DRAFT FINAL

2016 Annual Report

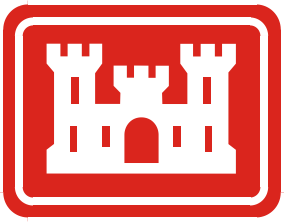
Long-Term Monitoring

Former Fort Devens Army Installation
BRAC Legacy Sites

Devens, Massachusetts

Contract W912WJ-15-C-0002

Prepared for



U.S. Army Corps of Engineers

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DRAFT FINAL
2016 ANNUAL REPORT
LONG-TERM MONITORING
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS
DECEMBER 2017

CERTIFICATION:

I hereby certify that the enclosed Report, shown and marked in this submittal, is that proposed to be incorporated with Contract Number W912WJ-15-C-0002. This document was prepared in accordance with the U.S. Army Corps of Engineers (USACE) Scope of Work and is hereby submitted for Government Approval.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAFES	Army Air Force Exchange Service
AOC	area of contamination
AREE	Areas Requiring Environmental Evaluation
AST	above-ground storage tank
BEC	BRAC Environmental Coordinator
BRAC	Base Realignment and Closure
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMR	Code of Massachusetts Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
COC	contaminant of concern
COD	chemical oxygen demand
CY	calendar year
1,2-DCB	1,2-dichlorobenzene
1,3-DCB	1,3-dichlorobenzene
1,4-DCB	1,4-dichlorobenzene
DCL	Devens Consolidation Landfill
Devens	former Fort Devens Army Installation
DO	dissolved oxygen
DoD	Department of Defense
DPW	Department of Public Works
DRFTA	Devens Reserve Forces Training Area
DRMO	Defense Reutilization and Marketing Office
DRO	Diesel Range Organics

EBS	Environmental Baseline Survey
ECSM	Expanded Conceptual Site Model
ELAP	Environmental Laboratory Accreditation Program
EPH	extractable petroleum hydrocarbons
ESD	Explanation of Significant Differences
ESMA	Excavated Soils Management Area
FD	field duplicate
FOST	Finding of Suitability to Transfer
FS	Feasibility Study
FFS	Focused Feasibility Study
ft/ft	feet per foot
GERE	Grant of Environmental Restrictions and Easements
GW-1	Groundwater Classification 1
GW-3	Groundwater Classification 3
HA	Housing Area
HFA	Human Factors Application
HLA	Harding Lawson Associates
Horne	Horne Environmental Services, Inc.
IC	institutional controls
IDW	investigation-derived waste
KGS	KOMAN Government Solutions, LLC
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LEL	lower explosive limit
LIFOC	Lease in Furtherance of Conveyance

LTM	long-term monitoring
LTMMP	Long-Term Monitoring and Maintenance Plan
LUC	land-use control
LUCIP	Land Use Control Implementation Plan
µg/L	micrograms per liter
MassDEP	Massachusetts Department of Environmental Protection
MassDevelopment	Massachusetts Development and Finance Agency
MCL	Maximum Contaminant Level
MCP	Massachusetts Contingency Plan
MEC	munitions and explosives of concern
mg/L	milligrams per liter
mm	millimeter
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl *tert*-butyl ether
NAE	North Atlantic Division, New England District
NELAP	National Environmental Laboratory Accreditation Program
NFA	no further action
NOAA	National Oceanic and Atmospheric Administration
OER	Ordnance and Explosive Remediation, Inc.
O&M	operations and maintenance
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity

PASI/SSI Report	Preliminary Assessment/Site Inspection and Supplemental Site Investigation Comprehensive Report
PCB	polychlorinated biphenyl
POL	petroleum, oils, and lubricants
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPD	Relative Percent Difference
SA	Study Area
SPIA	South Post Impact Area
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCE	trichloroethene
TDS	total dissolved solids
TPH	total petroleum hydrocarbons
TSS	total suspended solids
TTO	total toxic organics
µg/L	microgram per liter
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
UXO	unexploded ordnance

VOC	volatile organic compound
VPH	volatile petroleum hydrocarbons
Weston	Weston Solutions, Inc.

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EXECUTIVE SUMMARY

KOMAN Government Solutions, LLC (KGS) has prepared this 2016 Annual Report on behalf of the U.S. Army Corps of Engineers (USACE)-North Atlantic Division, New England District (NAE) to document the ongoing Long-Term Monitoring (LTM) activities in several areas of concern (AOC) at the Main Post of the former Fort Devens Army Installation (Devens), located in Devens, Massachusetts. The LTM activities described within this report were performed to fulfill requirements of site-specific Records of Decision (RODs) and were performed in accordance with the 2015 *Long Term Monitoring and Maintenance Plan* (LTMMP) (Sovereign /HGL 2015).

The scope of this document details the 2016 LTM activities conducted at AOC 57, AOC 69W, AOC 43G, AOCs 32 and 43A, the Devens Consolidation Landfill (DCL), and the Grant Housing and 37-mm Impact Area (**Figure 1**).

The Army conducted the spring LTM event in June 2016 at AOC 57, AOCs 32/43A, and the DCL. Nine monitoring wells and one surface water location were sampled in the spring. The fall LTM event was conducted in October 2016 at AOC 43G, AOC 69W, and the DCL, and included samples from eighteen groundwater monitoring wells. Samples that contained contaminants of concern (COCs) at concentrations exceeding the criteria set forth in the respective RODs are summarized below.

- AOC 57 (Area 3) – During the spring 2016 LTM event, groundwater samples were collected from three monitoring wells and one surface water location at Area 3. Total and dissolved arsenic in groundwater exceeded the 10 µg/L cleanup goal established by the 2001 ROD. The total and dissolved iron results from the surface water sample exceeded the 1,000 µg/L benchmark based on U.S. Environmental Protection Agency (USEPA) water quality criteria (**Table 1**).

- AOC 69W – Groundwater was sampled from eight monitoring wells and two well points during the fall LTM event. Arsenic, iron, manganese, and extractable petroleum hydrocarbons (EPH) exceeded the site-specific monitoring criteria (**Table 2**).

- AOC 43G – Five wells were sampled during the fall LTM event. Iron, manganese, and volatile petroleum hydrocarbons (VPH) exceeded the site-specific cleanup goals (**Table 3**).

- AOCs 32 and 43A – Groundwater was sampled from four monitoring wells during the spring LTM event. Arsenic, VPH, and 1,4-dichlorobenzene (1,4-DCB) exceeded the site-specific cleanup goals (**Table 4**).

- DCL – Three monitoring wells were sampled during the spring and fall LTM events. Laboratory analytical results from these events indicated no exceedances of the site-specific monitoring criteria. Additionally, the December 2016 leachate sample results were either non-detect or below discharge permit limits for all parameters.

The following sections summarize the key conclusions associated with the 2016 LTM program. Recommendations for changes to the LTM program are not provided in this report; instead, such recommendations will be presented in a revised LTMMP prepared on an as-needed basis. Remedial duration assessments are also not provided in this LTM report. Remedial duration

assessments were presented in the *2015 Five-Year Review Report* (H&S Environmental, Inc. [H&S], 2015) for sites with (AOC 43G and AOCs 32/43A) and without (AOC 69W and AOC 57) ROD-established remedial timeframes. These assessments indicated that the remedial durations established in the respective RODs will be met with continued long-term monitoring and Institutional Controls (ICs). The Army will evaluate remedial durations again as part of the 2020 Five-Year Review.

AOC 57 Conclusions

- Total and dissolved arsenic were detected at concentrations above the MCL in monitoring wells 57M-95-03X and 57M-96-11X. The 2016 groundwater sampling results for arsenic remain consistent with previous events. Graphical and statistical analysis of the data trends over time indicate that the total arsenic concentrations in wells 57M-95-03X and 57M-96-11X are remaining relatively stable.

- Total and dissolved iron were detected above the USEPA Water Quality Criteria at surface water sampling location 57-AREA3-SW1 during the spring sampling event.

- Land Use Controls (LUC) remain effective at AOC 57.

AOC 69W Conclusions

- The EPH C_{11}-C_{22} aromatic hydrocarbon fraction was detected at concentrations above the monitoring benchmark in source area well ZWM-99-22X, but is showing a statistically significant downward trend over time. EPH C_{11}-C_{22} aromatic and C_9-C_{18} aliphatic hydrocarbon fractions were detected at concentrations above respective benchmarks in source area well 69W-94-13 but do not show a statistically significant trend over time. Dissolved arsenic, iron, and manganese were above the respective cleanup goals in ZWM-99-22X and 69W-94-13. The arsenic concentrations in well 69W-94-13 appear to be stable as no statistically significant trend was observed. A statistically significant upward trend was noted in well ZWM-99-22X for the complete dataset collected since spring 2000; however, arsenic concentrations have been consistently decreasing in that well since fall 2009. Manganese was detected in ZWM-99-23X above the 291 µg/L cleanup goal, but has a statistically significant downward trend for the overall monitoring period.

- LUCs remain effective at AOC 69W.

AOC 43G Conclusions

- Concentrations of benzene, ethylbenzene, and xylenes at AOC43G were below the remedial cleanup goals established in the ROD. Total iron concentrations exceed the cleanup goal at wells AAFES-2 (with a downward trend) and XGM-97-12X (with no apparent trend). Total manganese concentrations exceed the cleanup goal at AAFES-2 (downward trend), XGM-93-02X (downward trend), XGM-94-04X (no trend), and XGM-97-12X (downward trend). This is likely due to a reducing groundwater environment that is low in dissolved oxygen (DO) and high in turbidity, generating more soluble and mobile iron and manganese.

- VPH C5-C8 aliphatics and C9-C10 aromatics were detected slightly above the benchmark in three wells; AAFES-2, XGM-94-04X, and XGM-97-12X. These wells are located downgradient of the former UST tanks. VPH concentrations are evaluated against MCP standards for comparison purposes, but the standards are not considered cleanup goals under the ROD. For VPH C5-C8 aliphatics, no statistically significant data trends were noted for wells AAFES-2, AAFES-6/6R, XGM-93-02X, or XGM-97-12X. An upward trend was noted for well XGM-94-04X; this well will continue to be monitored for trends over time during 2017. For VPH C9-C10 aromatics, downward concentration trends were noted for the sampled wells except for sentinel well XGM-94-04X which had no detectable trend. No statistically significant trends were identified for the VPH C9-C10 data.

- LUCs remain effective at AOC 43G.

AOCs 32 and 43A Conclusions

- COCs at AOC 32 and 43A include arsenic, VPH and VOCs; in particular, the dichlorobenzene (DCB) isomers. Dissolved arsenic exceeded the cleanup goal in monitoring well 32M-01-14XOB and 1,4-DCB exceeded the cleanup goal in the source area well 32M-01-18XBR. VPH C9-C10 aromatics also exceeded monitoring criteria in the source area well 32M-01-18XBR. No statistically significant trends were identified for these parameters. VPH concentrations are evaluated against MCP standards for comparison purposes, but the standards are not considered cleanup goals under the ROD.

- Source area well 32M-01-18XBR has had diminishing concentrations of arsenic, 1,4-DCB, and VPH C9-C10 aromatics following the February 2009 persulfate injection event.

- LUCs remain effective at AOCs 32 and 43A.

DCL Conclusions

- The groundwater sampling results from the DCL monitoring wells have maintained non-detections or low-level detections below the monitoring benchmarks.

- Well LFM-03-07 was inaccessible for sampling during 2016 because it had been paved over by recent construction activities adjacent to the site. MassDevelopment is currently working to locate/uncover the well so it can be determined whether the well remains in good condition for sampling during 2017.

- The DCL leachate sample results were within the discharge permit limits for all parameters.

- The LUC inspections of the DCL contributor sites (AOC 9, AOC 40, and Study Area 13) revealed no changes in land use at the individual contributor sites. Per the requirements of the 2006 transfer deed, these contributor sites are not being used or are intended to be used for residential purposes.

Grant Housing Area and 37-mm Impact Area Conclusions

- The LUC inspections of the Grant Housing Area (HA) and 37-millimeter (mm) Impact Area indicated no changes in land-use.

Table 1
AOC 57 – Area 3
Contaminant of Concern Cleanup Goal Exceedances

Well Identification	Analyte	Cleanup Goal (µg/L) [1]	Benchmark (µg/L)	Detected Result (µg/L)
Groundwater				
57M-95-03X [2]	Arsenic (total)	10	--	31
	Arsenic (dissolved)	10	--	25
57M-96-11X [3]	Arsenic (total)	10	--	290
	Arsenic (dissolved)	10	--	130
Surface Water				
57-AREA3-SW1	Iron (total)	--	1,000 [4]	19,000
	Iron (dissolved)	--	1,000 [4]	6,500

Notes:

[1] The Cleanup Goal for arsenic is the MCL standard.

[2] Sentry Well

[3] Source Area Well

[4] The monitoring benchmark for iron is the USEPA Water Quality Criterion.

Table 2
AOC 69W
Contaminant of Concern Monitoring Criteria Exceedances

Well Identification October 2016	Analyte	Cleanup Goal (µg/L) [1]	Benchmark (µg/L) [4]	Detected Result (µg/L)
69W-94-13[2]	Arsenic (dissolved)	10	--	76
	Iron (dissolved)	9,100	--	11,000
	Manganese (dissolved)	291	--	2,600
	EPH[4] C9-C18 Aliphatics	--	700	1,100
	EPH[4] C11-C22 Aromatics	--	200	410
ZWM-95-18X[3]	EPH[4] C11-C22 Aromatics	--	200	240
ZWM-99-22X[2]	Arsenic (dissolved)	10	--	150
	Iron (dissolved)	9,100	--	18,000
	Manganese (dissolved)	291	--	960
	EPH[4] C11-C22 Aromatics	--	200	210
ZWM-99-23X[3]	Manganese (dissolved)	291	--	590

Notes:

[1] Cleanup Goal for arsenic is the MCL standard. Cleanup goals for iron and manganese are background levels.

[2] Source Area Well

[3] Sentry Well

[4] EPH concentrations are evaluated against MCP standards for comparison purposes, but the standards are not considered cleanup goals under the ROD.

Table 3
AOC 43G
Contaminant of Concern Cleanup Goal Exceedances

Well Identification October 2016	Analyte	Cleanup Goal (µg/L) [1]	Benchmark (µg/L)[4]	Detected Result (µg/L)
AAFES-2[2]	Iron (total)	9,100	--	11,000
	Manganese (total)	291	--	2,800
	VPH C5-C8 Aliphatics	--	300	850
	VPH C9-C10 Aromatics	--	200	730
AAFES-7	Manganese, Total	291	--	510
XGM-93-02X[2]	Manganese (total)	291	--	1,400
XGM-94-04X[3]	Manganese (total)	291	--	1,500
	VPH C5-C8 Aliphatics	--	300	480
	VPH C9-C10 Aromatics	--	200	320
XGM-97-12X[2]	Iron (total)	9,100	--	25,000
	Manganese (total)	291	--	1,700
	VPH C5-C8 Aliphatics	--	300	420
	VPH C9-C10 Aromatics	--	200	340

Notes:

[1] Cleanup goals for iron and manganese are background levels.

[2] Source Area Well

[3] Sentry Well

[4] VPH concentrations are evaluated against MCP standards for comparison purposes, but the standards are not considered cleanup goals under the ROD.

Table 4
AOCs 32 and 43A
Contaminant of Concern Cleanup Goal Exceedances

Well Identification June 2016	Analyte	Cleanup Goal (µg/L) [1]	Benchmark (µg/L)[4]	Detected Result (µg/L)
32M-01-14XOB[2]	Arsenic (dissolved)	10	--	13
32M-01-18XBR[3]	1,4-dichlorobenzene	5.0	--	38
	VPH[4] C9-C10 aromatics	--	200	450

Notes:

[1] Cleanup Goals for arsenic and 1,4-DCB are the MCL standards.

[2] Downgradient Well

[3] Source Area Well

[4] VPH concentrations are evaluated against MassDEP GW-1 standards for comparison purposes, but are not considered cleanup goals under the ROD.

1.0 INTRODUCTION

KOMAN Government Solutions, LLC (KGS) prepared this 2016 Annual Long-Term Monitoring (LTM) Report to detail the performance of ongoing LTM activities required at the former Fort Devens Army Installation (Devens) site, located in Devens, Massachusetts (**Figure 1**). LTM activities were performed in accordance with the revised Long-Term Monitoring and Maintenance Plan (LTMMP) (Sovereign/HGL, 2015).

1.1 Long-Term Monitoring Program Background

The overall LTM program instituted at Devens is a result of the individual Records of Decision (RODs) issued for each AOC referenced in this report. These AOCs include:

- AOC 57 – Building 3713 Fuel Oil Spill (Harding Environmental, Science & Engineering, 2001)
- AOC 69W – Fort Devens Elementary School (Building 215) Fuel Oil Spill Site (Harding Lawson Associates [HLA], 1999a)
- AOC 43G – Historical Gas Station G (USEPA, 1996)
- AOCs 32 and 43A – Defense Reutilization and Marketing Office (DRMO) Yard and former Petroleum, Oils, and Lubricants (POL) Storage Area (Horne Environmental Services, Inc. [Horne], 2001);
- The DCL (HLA, 1999b)
- Grant Housing Area (HA) and 37-millimeter (mm) Impact Area (Weston Solutions, Inc. [Weston], 2009)

The RODs established site-specific Remedial Actions for each AOC, as well as the LTM program, Land Use Controls (LUCs), and, in some cases, removal actions. The Army and USEPA evaluate the effectiveness of the Remedial Actions as part of the Five-Year Review reports (HLA, 2000a; Nobis Engineering, Inc., 2005; HGL, 2010; and H&S, 2015). Since the inception of the LTM program, the monitoring requirements at some of the AOCs have been modified or removed. Sampling at AOC 57, AOC 69W, AOC 43G, AOCs 32 and 43A, and DCL in 2016 was modified based on LTM optimization presented in the LTMMP (Sovereign/HGL, 2015), as follows:

- Modifications to the AOC 57 sampling program beginning in 2015 discontinued sampling at four groundwater wells and two surface water locations in Area 2.
- Modification to the AOC 69W sampling program included the removal of VPH analysis from eight groundwater monitoring well locations.
- Modifications to the AOC 43G sampling program included discontinued sampling at locations AAFES-5, AAFES-6R, XGM-94-07X and XGM-94-08X. Sampling analysis for manganese and VPH were removed from alternate-year sampling events (CY2015, CY2017, etc.). Sampling analysis for non-alternate year (CY2016, CY2018) continued with full list Target Analyte Metals (TAL) and VPH analyses.

- Modifications to the AOCs 32 and 43A sampling program included discontinued sampling of the fall event, and reduction of spring sampling to include well 32M-01-13XBR, 32M-01-17XBR, 32M-01-18XBR and 32M-01-14XOB. Analysis changes included the removal of EPH from the sampling program.

- The DCL sampling program was not modified.

1.2 Site Description and History

Devens is located in the towns of Ayer and Shirley in Middlesex County, and Harvard and Lancaster in Worcester County, Massachusetts, approximately 35 miles northwest of Boston, Massachusetts. The installation occupied approximately 9,260 acres and was comprised of the North Post, the Main Post, and the South Post (**Figure 1**). Route 2 divides the South Post from the Main Post. The Nashua River runs through the North, Main, and South Posts. The area surrounding Devens is largely rural residential property.

Camp Devens was established in 1917 as a temporary training area for soldiers during World War I. Prior to 1917, the area was occupied by residential homes and farmland. In 1932, the site was named Fort Devens and made a permanent installation with the primary mission of commanding, training, and providing logistical support for non-divisional troop units. The installation also supported the Army Readiness Regional and National Guard units in the New England area. Devens was used for a variety of training missions between 1917 and 1990. Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, Devens was placed on the National Priorities List on November 21, 1989, due to environmental contamination at several sites.

Devens was identified for cessation of operations and closure under Public Law 101-510, the Defense Base Realignment and Closure (BRAC) Act of 1990, and officially closed in March 1996. As part of the Devens BRAC program, portions of the property formerly occupied by Fort Devens were retained by the Army for reserve forces training and renamed the Devens Reserve Forces Training Area (DRFTA). Areas not retained as part of DRFTA have been either transferred or are in the process of being transferred to new owners for reuse and redevelopment.

In May 1996, portions of the Main and North Posts, and all of the South Post, were realigned as DRFTA. A total of 5,181.64 acres (344.94 acres of the Main Post enclave and 4,836.70 acres of the South Post) were retained for DRFTA with an additional 444.10 acres pending lease or transfer. Also in 1996, 3,040.4 acres were either leased (686.4 acres) or transferred (2,354 acres) to the Massachusetts Development and Finance Agency (MassDevelopment), Devens Commerce Center. A total of 1,079.62 acres was transferred to other federal agencies in 1997, including 221.62 acres to the Department of Justice Bureau of Prisons and 22 acres to the Department of Labor Job Corps Center.

In January and February 1998, the Army completed Environmental Baseline Surveys (EBSs) and Findings of Suitability to Transfer (FOSTs) to approve for transfer two parcels (0.7 acre and 4.9 acres) of the Main Post to MassDevelopment for Innovation and Technology Business use. In March 1999, another 1.3-acre parcel of the Main Post was transferred to MassDevelopment for Innovation and Technology Business use and a FOST was approved for the transfer of 95 acres of

the Main Post to MassDevelopment for rail, industrial, and trade-related use. In 1999, 836 acres of Devens along the Nashua River Area were transferred to the Department of Interior U.S. Fish and Wildlife Service for use as an open space as part of the Oxbow National Wildlife Refuge.

A total of 325 environmental investigation sites have been addressed at Devens under CERCLA. Twenty-one sites were defined as AOCs, 63 were defined as Study Areas (SA), and 241 sites were defined as Areas Requiring Environmental Evaluation (AREE). The 241 AREE sites have been addressed in final No Further Action (NFA) Decision Documents. Sixty of the 63 SAs have been addressed in final NFA Decision Documents and the remaining three SAs have been addressed in final RODs.

1.3 Groundwater Hydrology

Devens is located in eastern Massachusetts, approximately 35 miles northwest of Boston, Massachusetts. The proximity of the Atlantic Ocean, Long Island Sound, and the Berkshire Hills plays an important role in determining the weather and climate of the Devens area.

The depth to groundwater was recorded within a 24-hour period at monitoring wells within each AOC as part of the 2016 LTM Program. Plotting the collected groundwater elevation data allows a determination of groundwater flow directions, which is essential in understanding contaminant migration pathways and evaluating the effectiveness of the monitoring well network. Groundwater elevations at monitoring wells were determined by subtracting the depth to water from the elevation of a reference point on the top of the well riser. The surface water elevation at staff gauges was determined by adding the observed water level to the elevation of a reference point on the staff gauge. **Table 5** shows water level elevations for the spring 2016 event. **Table 6** shows water level elevations for the fall 2016 event. Groundwater gradients present at each AOC, as determined from the available groundwater elevation data are expressed as feet per foot (ft/ft) of change in water table elevation.

Annual precipitation data for 2004 through 2016, as reported from the Fitchburg, Massachusetts, weather station, is presented in **Table 7**. The precipitation data reveals less precipitation across the Devens area prior to the June (spring) 2016 LTM event compared to the October (fall) 2016 LTM event. Lower than normal precipitation was reflected in the generally lower groundwater elevations encountered across the site during the spring and fall 2016 LTM events. In 2016, Massachusetts experienced the seventh driest March through November on record based on National Oceanic and Atmospheric Administration (NOAA) annual drought reports describing abnormally dry short- and long-term drought conditions in central Massachusetts.

1.4 Groundwater Sampling

The LTM program was conducted in accordance with the LTMMP (Sovereign/HGL, 2015) to monitor COC trends over time for the respective AOCs. During 2016, the LTM program was conducted by KGS and included:

- semi-annual groundwater LTM events at the DCL in June and October 2016;
- annual groundwater LTM event at AOCs 32/43A in June 2016;
- annual groundwater and surface water LTM event in June 2016 at AOC 57;
- annual groundwater LTM event in October 2016 at AOC 69W;
- annual groundwater LTM event in October 2016 at AOC 43G; and

- annual DCL leachate LTM event in December 2016.

1.4.1 Preparation for Sampling

Sampling activities were coordinated with the USACE-NAE, BRAC Environmental Coordinator (BEC) office, and the contracted analytical laboratory. The laboratory provided the sampling supplies (sample containers, packing material, custody seals, and coolers) to the sampling team per the specific sample requirements identified in **Table 8**. The sampling team drafted portions of chain of custody documents in advance of sampling. Chain-of-custody documents were finalized during the sampling events.

During the groundwater sampling activities, the sampling team used YSI water quality meters, LaMotte turbidity meters, MP10 pump controllers, QED Sample Pro Bladder pumps, Geopump peristaltic pumps, and Solinst water level indicators that were rented from Pine Environmental, Inc. of Woburn, Massachusetts. The sampling team also used dedicated Teflon™-lined sample tubing (purchased from Pine Environmental) for each monitoring well. Dedicated submersible bladder pumps were used in select wells. Sampling equipment was tested to ensure that it was functional prior to sampling. The well construction details for each groundwater monitoring well were reviewed prior to the sampling events for determination of non-dedicated well pump placement. The well construction diagrams were maintained on site during the sample events to confirm well screen interval information as needed.

Well construction details and other pertinent information are presented in **Table 9**. AOC-specific actions levels are summarized in **Table 10**. DCL leachate discharge limits are summarized in **Table 11**.

1.4.2 Sampling

Groundwater monitoring wells were purged and sampled in accordance with the USEPA Region 1 guidance document "Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells" (USEPA Region 1, 2010b). Low-flow bladder pumps were used, as described in the LTMMP (Sovereign/HGL, 2015). Samples submitted for dissolved metals analyses were field filtered through 0.45-micron filters directly into preserved sample bottles. Groundwater samples were also obtained using HydraSleeve™ technology at select wells during the spring 2016 LTM event. HydraSleeve™ is a proven, no-purge groundwater sampling method that significantly reduces sampling time and equipment needs. Further discussion of HydraSleeve™ technology and results are discussed in **Section 8**.

Sample preparation and analysis methods, containers, holding times, and preservatives for each AOC site parameter are summarized in **Table 8**. Location and construction details for each groundwater monitoring well, well point, sump, and surface water location are summarized in **Table 9**.

The groundwater elevation data for the spring and fall 2016 sampling events are summarized in **Table 5** and **Table 6**. The field sampling logs are presented in **Appendix A**.

1.4.3 Equipment Decontamination

Non-dedicated sampling and monitoring equipment was decontaminated between sampling locations in accordance with the Annual LTMMP Quality Assurance Project Plan (QAPP)

(KGS, 2016a) to prevent cross-contamination. Decontamination procedures are detailed in the QAPP (KGS, 2016a).

1.4.4 Investigation Derived Waste

Investigation-derived waste (IDW) was not generated during the 2016 LTM activities. Purge water collected during the 2016 LTM did not have total headspace VOC readings conducted based on 2015 purge water results. Purge water from wells was returned to the ground in proximity to the sample collection area following low flow sampling.

1.4.5 Monitoring Well Network Inspection and Repairs

The condition of the monitoring well network at each LTM site was inspected during the 2016 sampling events. Observations, if noted, are contained within the field sampling logs provided in **Appendix A**. Monitoring wells were found to be in good overall condition, except for DCL well LMF-03-07, which was inaccessible due to construction activities adjacent to the DCL during spring and fall 2016. MassDevelopment uncovered and repaired the monitoring well in July 2017.

1.5 Laboratory Testing

TestAmerica Laboratories, Inc. of Savannah, Georgia was the primary contract laboratory used for the analysis of water samples for the spring and fall 2016 LTM events. TestAmerica is compliant with the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, version 5.0 (DoD, 2013) under the DoD Environmental Laboratory Accreditation Program (ELAP) and holds current National Environmental Laboratory Accreditation Program (NELAP) accreditation for all applicable analytical methods. TestAmerica subcontracted to Katahdin Analytical Services of Scarborough, Maine to perform the required volatile petroleum hydrocarbon (VPH) and EPH analyses, using the MassDEP analytical methods. Katahdin holds MassDEP certification for these analyses.

1.5.1 Analyses

Samples were analyzed for the following AOC-specific sets of COCs:

- AOC 57 – total and dissolved metals in groundwater (for the COC arsenic, plus iron and manganese);
- AOC 69W – EPH and/or dissolved metals (arsenic, iron, and manganese);
- AOC 43G – VPH (including benzene, toluene, ethylbenzene, and xylenes [BTEX]), total alkalinity, and/or total TAL metals;
- AOC 32/43A – VOCs, VPH, and dissolved metals (arsenic and manganese);
- DCL monitoring wells – VPH, EPH, organochlorine pesticides, total select metals (including mercury), and the following general chemistry parameters: total dissolved solids (TDS), chloride, sulfate, nitrate/nitrite-as-N, total alkalinity, total cyanide, and chemical oxygen demand (COD);

- DCL leachate – VOCs, SVOCs, organochlorine pesticides/PCBs, total petroleum hydrocarbons (TPH), total metals, and wet chemistry parameters (total suspended solids [TSS], pH, total phenolics, and total cyanide).

Metals analyses were performed for total or dissolved metals on an AOC-specific basis as described above. The laboratory methods used to analyze groundwater samples from each AOC and the DCL leachate are listed in **Table 8**.

1.5.2 Analytical Results

The analytical results were compared to the available cleanup goals established in the ROD or monitoring criteria for each AOC. Arsenic results in groundwater were compared to the 10 µg/L MCL that was promulgated in 2006, which is lower than the cleanup standard that was previously established in the site-specific RODs. Site-specific COCs and the associated cleanup goals or comparison criteria for the AOCs, as identified in each site-specific ROD, are presented in **Table 10.** The DCL leachate discharge limits are presented in **Table 11**. Laboratory analytical results for water samples collected during the 2016 LTM events are discussed in the following subsections. The effects of contamination in laboratory and field blanks as well as the effects of other quality control issues associated with the analytical results are discussed in the data validation reports presented in **Appendix B2** and **B3**.

1.6 Quality Control

Analytical data were provided by a properly accredited laboratory (TestAmerica) and the data analyses, collection, and validation were performed per the approved LTMMP Quality Assurance Project Plan (KGS, 2016a). There were no outstanding quality control issues identified with the analytical results for any of the 2016 LTM samples.

1.6.1 Field Quality Control

Field duplicate samples were collected during sampling events at each AOC, at the rate of 10%, to evaluate field precision. Matrix spike (MS)/matrix spike duplicate (MSD) pairs (one set per AOC) were also submitted to evaluate matrix effects on analytical precision and accuracy.

The field instruments used to measure water quality parameters (temperature, DO, pH, ORP, specific conductance, and turbidity) were calibrated twice daily (prior to and following field use) in accordance with the manufacturer's instructions and in accordance with USEPA's Calibration of Field Instruments Standard Operating Procedure (USEPA Region 1, 2010a). If instrument calibration drift was evident at any time during sampling, the equipment was recalibrated immediately. No instrument drift or instrument error was noted during the spring or fall LTM events.

1.6.2 Data Evaluation for 2016 Long-Term Monitoring Events

The analytical results from the 2016 sampling events were evaluated for data acceptability in accordance with the USEPA Region 1 data validation guidelines (USEPA Region 1, 2013), the DoD QSM version 5.0 (DoD, 2013), and the laboratory's defined acceptance limits. The method requirements for the USEPA SW-846 QC guidance and the MassDEP VPH and EPH methods were also used as supplemental information. The Data Review reports for the spring and fall 2016

sampling events are presented in **Appendix B2** and **B3**, and the general findings are summarized below.

1.6.3 Chemical Analytical Quality Assurance/Quality Control

Data qualification was primarily the result of the following: blank contamination, including method and trip blanks; LCS and/or LCSD recovery and precision exceedances; low MS recoveries; surrogate recovery exceedances; and field duplicate (FD) precision.

Analyses were performed in general compliance with the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) requirements listed in the QAPP (KGS, 2016a). Good analytical practices and method requirements were followed and the laboratory was determined to be performing properly. No significant QC deficiencies were noted. Although some results required qualification based on the issues listed above; useable analyte results are reported for 99.9% of samples from the 2016 LTM events.

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2.0 AREA OF CONTAMINATION 57

2.1 Site Background

AOC 57 is located between Barnum Road and Cold Spring Brook on the northeast side of what was formerly the Main Post of Devens in the town of Harvard, Massachusetts (**Figure 1**). AOC 57 is located within a Zone II aquifer protection area[1] and portions of AOC 57 are located within a Non-Potential Drinking Water Source Area and a medium-yield aquifer (**Figure 2**). The portion of the former Devens site that includes AOC 57 was used primarily as a storage and maintenance area for military vehicles. AOC 57 consists of three sub-areas (Area 1, Area 2, and Area 3) that are located south to southeast of Building 3713 and former Buildings 3756, 3757, and 3758 (**Figure 2**). The sub-areas received storm water runoff and waste from vehicle maintenance at former vehicle storage yards related to Building 3713 and former Buildings 3757 and 3758. A NFA ROD was completed for Area 1 (Harding, 2001) following the removal of PAH-contaminated soil in 1997.

Each sub-area includes an upland area that slopes downward to a delineated wetland area bordering Cold Spring Brook. The ROD identified the 228-foot elevation line as the border between the upland and the 100-year flood plain for Cold Spring Brook. The floodplain boundary is located approximately 260 feet from Cold Spring Brook in Area 2 and approximately 400 feet from Cold Spring Brook in Area 3. Areas 2 and 3 are depicted on **Figure 3** and **Figure 4**, respectively.

In September 1992, an investigation was performed to determine the presence or absence of environmental contamination at AOC 57 that may have occurred following a February 1977 fuel oil spill. The investigation revealed the presence of groundwater, soil, and sediment contaminated with oil, volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), pesticides, metals, and polychlorinated biphenyls (PCB).

Based on the results of the investigation, the Army proposed that a limited soil removal action be conducted at Area 2. A removal action began at Area 2 in August 1994 and continued until September 1994, when it was discovered that contamination extended beyond the limits originally estimated. Approximately 1,300 cubic yards of soil were removed and the site was transferred to the RI/FS process. In the spring of 1999, a soil removal action focusing on PCBs and extractable petroleum hydrocarbons (EPH) in soil was performed at Area 3 based on data obtained from the RI. A total of 1,860 cubic yards of soil was removed.

In June 2000, the Army completed an RI at AOC 57 Areas 2 and 3 that revealed the presence of residual contamination at both sites. A ROD for Areas 2 and 3 was issued in September 2001. The ROD selected Alternative II-3, Excavation (For Possible Future Use) and LUCs for Area 2 and Alternative III-2a, Excavation (To Accelerate Groundwater Cleanup) and LUCs for Area 3. Data obtained and observations made at Area 2 between 2002 and 2003 (during the soil excavation activities and subsequent investigations) prompted the submittal of an Explanation of Significant Differences (ESD) in March 2004. The ESD expanded the Area 2 LTM activities to include EPH C_{11}-C_{22} aromatics and PCB Aroclors. Based on evaluation of long-term monitoring data through 2014, sampling at AOC 57 Area 2 was discontinued in 2015 and monitoring was reduced at Area 3.

[1] MassDEP establishes public water supply protection areas in accordance with the Drinking Water Regulations at 310 CMR 22.02. In part, a Zone II groundwater protection area is defined as the area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated.

Construction of a solar panel manufacturing facility between Areas 2 and 3 and Barnum Road began in 2008 and was completed in 2009. The solar panel manufacturing facility has since been closed but the building has been taken over by another company, Nypro. The same building footprint and infrastructure remain in place.

2.2 Groundwater Hydrology

Interpretive water-table elevations for the June 2016 LTM event at AOC 57 Areas 2 and 3 are presented on **Figure 5** and **Figure 6**.

Data from the spring 2016 LTM event at AOC 57 show groundwater flowing in a south/southeast direction, toward Cold Spring Brook, which is consistent with historical observations of groundwater flow patterns in this area. The groundwater gradient at Area 2 was 0.005 ft/ft and the Area 3 gradient was 0.013 ft/ft during the spring 2016 LTM event. The groundwater gradient for both areas was calculated at one location that was representative of average conditions across the site. Although the groundwater gradient typically varies across each site based on topography and seasonal variations in groundwater elevations, the selected flow paths are deemed as generally representative of site conditions.

2.3 Groundwater Sampling

Beginning in 2008, groundwater at AOC 57 Area 3 has been sampled in the spring on an annual basis. As described in **Section 1.1**, the sampling program was modified in 2015 to suspend sampling at Area 2 but continue gauging wells as part of the sampling event at Area 3. Wells sampled as part of the LTM program in June 2016 include Area 3 wells 57M-95-03X and 57M-96-11X.

2.4 Surface Water Sampling

During the spring 2016 LTM sample event, a surface water sample was collected from location 57-AREA3-SW1 within Area 3. A discrete grab sample was collected as close to the bottom of the water column as possible, without allowing bottom sediment to enter the sample container.

2.5 Analytical Results

Groundwater analytical results for Area 3 from the spring 2016 LTM event are summarized in **Table 12**. Surface water analytical results from the spring 2016 LTM event are summarized in **Table 13**. Samples were submitted for total and dissolved arsenic, iron, and manganese analyses (Sovereign/HGL, 2015). Results are presented on **Figure 7**.

2.5.1 June 2016 Data Summary

- Metals – The following total arsenic concentrations exceeded the MCL of 10 µg/L: 31 µg/L in well 57M-95-03X and 290 µg/L in well 57M-96-11X. The results for dissolved arsenic in these wells also exceeded the MCL: 25 µg/L in well 57M-95-03X and 130 µg/L in well 57M-96-11X. Dissolved arsenic was detected in the surface water sample from 57-AREA3-SW1 at 8.1 µg/L.

- Source area well 57M-96-11X had a total iron concentration of 32,000 µg/L, which exceeds the 9,100 µg/L background level. The total iron concentration in surface water

sample 57-AREA3-SW1 (19,000 µg/L) was above the USEPA Water Quality Criterion of 1,000 µg/L. Total manganese was detected in each of the samples and exceeded the 291 µg/L background concentration in the source area well 57M-96-11X (2,800 µg/L).

2.5.2 AOC 57 Data Trends

The results of the 2016 LTM event at AOC 57 were compared to results from previous sampling events. Historical exceedances of the cleanup goals for AOC 57 Area 3 from 2003 through 2016 are summarized in **Table 14**. Graphical and statistical analyses are presented in **Appendix C**.

Total arsenic concentrations in Area 3 remained above the MCL (10 µg/L) in groundwater monitoring wells 57M-96-11X (290 µg/L) and 57M-95-03X (31 µg/L). Graphical and statistical analysis of the data trends over time (**Appendix C**) indicate that the total arsenic concentrations in well 57M-95-03X are stable. Arsenic concentrations at 57M-96-11X have varied from slightly higher concentrations in 2003 and 2004 of 240 µg/L to 270 µg/L, to slightly lower concentrations from 2004 to 2014 of 148 µg/L to 192 µg/L, to slightly higher concentrations in 2015 and 2016 of 284 µg/L to 290 µg/L. No statistically significant trends were noted in wells 57M-96-11X ($p = 0.352$) and 57M-95-03X ($p = 0.235$) at the selected, 95% confidence level.

Field monitoring data indicates a reducing environment is present in the aquifer (low DO and ORP), which can promote the mobilization of metals such as arsenic from native soils.

2.5.3 Water Quality Parameters

General water quality chemistry parameters (pH, temperature, specific conductivity, ORP, DO, and turbidity) were measured at each of the sampled wells during the 2016 sampling event. These parameters are measured concurrently with low-flow sampling and are used to determine groundwater stabilization within each well prior to sampling. Final field readings taken prior to collection of each groundwater sample are presented in **Table 12**. The ORP and DO data are used to determine whether reducing or oxidizing conditions are present at a specific well. Low ORP values (below 50 millivolts) and DO concentrations below 1 mg/L are generally associated with elevated arsenic, iron, and manganese concentrations. While reductive conditions may facilitate the breakdown of petroleum hydrocarbons, they can also cause naturally occurring arsenic in the soils to mobilize by reducing the relatively insoluble arsenic (V) oxidation state to soluble arsenic (III). Such reducing conditions also yield higher concentrations of iron and manganese. Together, the ORP, DO, and metals data indicate that reducing conditions are established at wells 57M-95-03X and 57M-96-11X.

2.6 Data Evaluation for 2016 Long-Term Monitoring Events

Groundwater samples were collected from two AOC 57 wells and one surface water location in June 2016. Samples were submitted to TestAmerica for total and dissolved metals analyses.

Based on the data evaluation elements reviewed (including holding times, blank sample results, field duplicate results, laboratory control sample [LCS]/laboratory control sample duplicate [LCSD] recoveries, and matrix spike [MS]/matrix spike duplicate [MSD] recoveries), the total and dissolved metals results for all AOC 57 groundwater and surface water samples were acceptable as reported. No qualifications were needed.

2.7 Land-Use Controls

AOC 57 is owned by the Army but leased to MassDevelopment per a Lease in Furtherance of Conveyance (LIFOC) agreement. Under the lease agreement, MassDevelopment must comply with the LUCs included within the LIFOC. Per the ROD signed in September 2001, LUCs were established to limit the potential exposure to the contaminated soil and groundwater under both the existing and future site conditions. The LUCs ensure that exposure to any remaining contaminated soils beneath the site is controlled. The LUCs also prohibit the extraction of groundwater from the site for industrial or potable water supply use. These LUCs are to be incorporated either in full or by reference into all deeds, easements, mortgages, leases, or any other instruments of transfer prior to the transfer of the property to MassDevelopment, until such time that soil and groundwater concentrations reach cleanup levels. During the Five-Year Review process, existing land-use is evaluated to ensure control requirements are being met. A site-specific annual LUC checklist, including physical on-site inspection and interview components, was developed in 2007 for use during LUC verification activities. The checklist is presented in **Appendix D**.

2.7.1 Land-Use Control Interviews

Interviews were conducted with Mr. Ron Ostrowski of MassDevelopment and Mr. Neil Angus of the Devens Enterprise Commission, regarding the following items:

- Familiarity with the LUCs imposed upon the property and documentation of these controls;
- Excavations (planned or emergency) that may involve soils and groundwater in Areas 2 or 3; and
- Proposed plans for property sale, future redevelopment and construction, or demolition activities at the site.

Mr. Angus stated that the building at 112 Barnum Road was transferred to a new owner in 2015 and is now owned by an LLC. The tenant remains Nypro, a provider in the precision manufacturing of plastic products. There were no other changes to the site in 2016. Prior to any construction, Nypro will obtain local approval from MassDevelopment.

2.7.2 Land-Use Control On-Site Inspection

LUCs at AOC 57 were verified during annual groundwater sampling events performed by the KGS team. During sampling activities, a LUC inspection was performed to identify the following:

- Any signs of increased exposure potential to the public from soil and/or surface water contaminants;
- Any evidence that groundwater extraction wells were installed at the site; and
- Any evidence of site use changes.

No evidence of increased exposure potential was observed during the spring 2016 sampling event.

2.8 Conclusions

Based on the previous remedial activities performed at AOC 57 and evaluation of the available monitoring data, monitoring of Area 2 was eliminated in the 2015 spring sampling event (Sovereign/HGL, 2015) and monitoring was reduced at Area 3 to every five years following this 2016 sampling event. AOC 57 currently does not pose an exposure risk and is not expected to pose a risk in the future. Groundwater and surface water at Area 3 were sampled for total and dissolved metals (arsenic, iron, and manganese).

The total arsenic concentrations in groundwater underlying Area 3 was consistent with the previous LTM results. The presence of arsenic above the MCL appears to be related to high iron and manganese concentrations, low ORP readings (below 50 millivolts), and low DO readings (below 1 mg/L), which are associated with reducing conditions in the aquifer. Area 3 wells 57M-96-11X and 57M-95-03X contain elevated arsenic concentrations above the MCL standard. Groundwater sampling results indicate that arsenic concentrations are generally steady over time, with no statistically significant trends detected**.** The metals will come out of solution when the aquifer reverts to an oxidizing state within the impacted area or when the impacted groundwater reaches and expands into an oxidizing environment, therefore there is no anticipated impact to the Zone II.

Iron concentrations in the Area 3 surface water (57-AREA3-SW-1) have been consistently above the USEPA Water Quality Criteria since spring 2011. Surface water sampling results indicate limited potential for off-site migration of COCs via the groundwater to surface water discharge pathway.

The monitoring results are consistent with the conceptual site model. After removal of the source, natural attenuation processes have effectively reduced the remaining concentrations of site COCs (PCE, cadmium, 1,4-dichlorobenzene, PCBs, and extractable petroleum hydrocarbon C11-C22 aromatic carbon range) to below their respective remediation goals without offsite migration. Reducing conditions in the aquifer are a byproduct of the biodegradation of fuel products which has resulted in elevated arsenic concentrations in groundwater. The reducing conditions resulted in the mobilization of arsenic from the natural sediments. As with many other fuel-contaminated sites, once the fuel products have been attenuated, the metals in the aquifer formation will revert to their pre-existing stable geochemistry and dissolved-phase concentrations will decrease (API, 2011). Arsenic concentrations in groundwater at AOC 57 have decreased or remained steady since removal of the source of contamination. The extent of the elevated arsenic is defined. Downgradient of the site, the arsenic concentrations in surface water are below the USEPA Water Quality Criteria and are sometimes below the MCL. Trend analysis of arsenic in surface water strongly suggests that arsenic concentrations will decrease or remain steady (USACE, 2011).

The ROD remedy includes LUCs to limit potential exposure to contaminated soil and groundwater under both existing and future site use. During sampling, observations were made to identify any signs of increased exposure potential. No evidence of increased exposure potential was observed during the 2016 LTM event. Although access is not restricted, the site is remote and the building on-site blocks direct access to the site thereby making the site less accessible. The Army will continue to perform LTM and LUC inspections until site conditions warrant discontinuation of sampling and change in LUC implementation.

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3.0 AREA OF CONTAMINATION 69W

3.1 Site Background

AOC 69W is located by the northeast corner of the intersection of Jackson Road and Antietam Street on the northern portion of what was formerly the Main Post at Devens (**Figure 1**). AOC 69W consists of the former Devens Elementary School (Building 215), its associated parking lot, and the adjacent lawn extending approximately 300 feet northwest to Willow Brook (**Figure 8**). The building is currently home to the Francis W. Parker Charter Essential School. Impacts at AOC 69W are attributed to two separate releases of No. 2 heating oil in 1972 and 1978. It is estimated that 7,000 to 8,000 gallons of No. 2 heating oil were released into soil from each event.

The 1972 release occurred during the installation of a new 10,000-gallon underground storage tank (UST). The release was addressed, in part, by the installation of an oil skimmer near the release point to recover the released heating oil. A secondary control measure involved the installation of a 250-gallon underground concrete collection vault placed approximately 250 feet to the northwest to capture oily water. It is not clear how many gallons of heating oil or oily water were recovered, although it is estimated that the 250-gallon vault was pumped out every 3 months for a period of time (HLA, 1999a).

The 1978 release resulted from a failed piping joint in the oil pipes that led to the old boiler. A large hole was excavated on the north side of the school adjacent to the loading dock to locate the source of the release. Reports indicate that residual oil was collected from the excavation for one month before the damaged piping was found and replaced (HLA, 1999a). Shortly after the release, an oily sheen was reported in Willow Brook and the associated wetlands north of the school. More than 2,000 gallons of residual oil was captured with the oil recovery system. A removal action was performed in 1998 that included the removal of approximately 3,500 cubic yards of petroleum-contaminated soil, the oil recovery system's 250-gallon underground vault and its associated piping, and the 10,000-gallon UST. The soil removal action was limited by the presence of the building.

Several investigations have been performed to identify impacts to surface and subsurface soil and groundwater at AOC 69W. The ROD issued for AOC 69W in June 1999 selected "Limited Action" as the remedy for subsurface soils and groundwater and included LTM, LUCs, and five-year reviews. The intent of the ROD was primarily to address soil and groundwater contaminated with fuel oil. The LTM was developed to monitor for any potential off-site migration of contaminants and to verify that elevated concentrations decreased over time. The 1999 ROD listed arsenic and MassDEP EPH and VPH as the monitored analytes. Sampling for VPH was discontinued in 2014.

Based on detections of manganese in groundwater at the well point 69WP-08-01installed in 2008, the Army installed an additional downgradient well point 69WP-13-01 in 2013 to monitor for potential manganese migration.

The construction of a modular building expansion for the rear portion of the Frances W. Parker Charter Essential School was completed in 2009. The AOC 69W remedy and sampling program were not impacted by the construction activities.

3.2 Groundwater Hydrology

Data from the fall 2016 LTM gauging event at AOC 69W indicate that groundwater flows north-northwest direction, which is consistent with historical groundwater flow patterns in this area. A groundwater gradient of 0.02 ft/ft is present in the main portion of AOC 69W and is represented on **Figure 9**. The gradient was calculated perpendicular to groundwater equi-potential lines across AOC 69W.

3.3 Groundwater Sampling

Groundwater at AOC 69W is sampled annually in the fall. Wells sampled in October 2016 included: 69W-94-13, 69W-94-14, ZWM-95-15X, ZWM-95-18X, ZWM-99-22X, ZWM-99-23X, ZWM-99-24X, ZWM-01-25X, and well points 69WP-08-01 and 69WP-13-01. Water levels were collected from 17 vicinity wells and piezometers: 69W-94-12, 69W-94-13, 69W-94-14, ZWM-01-25X, ZWM-01-26X, ZWM-95-15X, ZWM-95-16X, ZWM-95-17X, ZWM-95-18X, ZWM-99-22X, ZWM-99-23X, ZWM-99-24X, ZWP-95-01X, ZWP-95-02X, 69WP-08-01, 69WP-13-01 and the Willow Brook piezometer.

3.4 Analytical Results

The annual 2016 LTM event was performed in October. The fall 2016 sampling event consisted of collecting eight groundwater monitoring well samples, one field duplicate sample, and two well point samples. The samples were analyzed for EPH and dissolved metals (arsenic, iron, and manganese) except for the sample from well point 69WP-08-01, which was analyzed for dissolved metals only and well point 69WP-13-01, which was analyzed for dissolved manganese only (in concurrence with the 2015 LTMMP). The fall 2016 analytical results are presented in **Table 15** and on **Figure 10** and **Figure 11**.

3.4.1 October 2016 Data Summary

- EPH Carbon Fractions – C11-C22 aromatic hydrocarbon concentrations exceeded the 200 µg/L benchmark in monitoring wells 69W-94-13 (410 µg/L), ZWM-95-18X (240 µg/L) and ZWM-99-22X (210 µg/L). The result for C9-C18 aliphatic hydrocarbons from well 69W-94-13 (1,100 µg/L) exceeded the 700 µg/L benchmark. The other EPH hydrocarbon results were non-detect or below benchmark levels. EPH concentrations are evaluated against MassDEP GW-1 standards for comparison purposes.
- Dissolved Metals – Arsenic concentrations exceeded the 10 µg/L MCL standard in samples from monitoring wells 69W-94-13 (76 µg/L) and ZWM-99-22X (150 µg/L). The other arsenic results were non-detect or below the MCL. Manganese concentrations were above the background level of 291 µg/L in wells 69W-94-13 (2,600 µg/L), ZWM-99-22X (960 µg/L), and ZWM-99-23X (590 µg/L). Manganese was detected below the background in the other sampled wells. Iron was detected above the 9,100 µg/L background level in sentry well 69W-94-13 (11,000 µg/L) and from source well ZWM-99-22X (18,000 µg/L). The other iron results were either non-detect or detected below the background value.

3.4.2 AOC 69W Data Trends

The results of the 2016 sampling event at AOC 69W were compared to results from previous sampling events. Historical exceedances of the monitoring criteria at AOC 69W from

2000 through 2016 are presented in **Table 16**. Graphical and statistical analyses of selected wells are presented in **Appendix C**.

The EPH compound concentrations, specifically the C_{11}-C_{12} aromatic fraction, indicate a slight increase since 2015. The C11-C22 aromatic results from well 69W-94-13 increased from below the monitoring criterion (200 µg/L) at 175 µg/L in 2015 to 410 µg/L in 2016. The 2016 results, while slightly higher than previous results, are consistent with historical results, which have ranged from 152 µg/L to 379 µg/L since spring 2006 (and up to a maximum of 1,900 µg/L in 2002), and do not show a statistically significant trend ($p = 0.336$) at the selected 95% confidence level. The C11-C22 results from wells ZWM-95-15X and ZWM-99-23X have increased from non-detect (100 µg/L U) to just slightly above the reporting limit at 100 and 110 µg/L, respectively, but still remain below the monitoring criterion of 200 µg/L. The results from these wells have been non-detect since 2009; the low-level detections reported in 2016 are not significant and may be due to increased sensitivity of the analytical method. C11-C12 EPH concentrations in well ZWM-99-22X show a statistically significant downward trend over time ($p = 0.006$).

Arsenic results decreased overall in fall 2016 but remained above 10 µg/L in wells 69W-94-13 (76 µg/L) and ZWM-99-22X (150 µg/L). The arsenic concentrations in well 69W-94-13 appear to be stable as no statistically significant trend was observed ($p = 0.107$). A statistically significant upward trend was noted in well ZWM-99-22X ($p = 0.04$) for the complete dataset collected since spring 2000; however, arsenic concentrations have been consistently decreasing in that well since fall 2009. The fall 2016 results for arsenic in wells ZWM-95-15X (3.7 µg/L) and ZWM-95-23X (7.7 µg/L) fell below 10 µg/L.

Manganese concentrations continued to fluctuate with no apparent trend from May 2000 to October 2016, except for well ZWM-99-23X which had a statistically significant downward trend ($p = 0.003$). Well ZWM-01-25X had a statistically significant upward trend for the overall dataset from 2000 to 2016 ($p = 0.026$); however, manganese concentrations have been on an overall downward trend since fall 2009. The October 2016 results for wells 69W-94-13 (2,600 µg/L), ZWM-99-22X (960 µg/L), and ZWM-99-23X (590 µg/L) continue to exceed the 291 µg/L benchmark. The fall 2016 results for manganese in wells ZWM-99-22X and ZWM-99-25X fell below 291 µg/L for the first time since 2005.

3.4.3 Water Quality Parameters

General water quality chemistry parameters (pH, temperatures, specific conductivity, ORP, DO, and turbidity) were measured at each of the wells during the 2016 sampling events. These parameters are measured concurrently with low-flow sampling and are used to determine groundwater stabilization within each well prior to sampling.

Final field readings taken prior to collection of each groundwater sample are presented in **Table 15**. The ORP and DO data are used to determine whether reducing or oxidizing conditions are present at a specific well. **Table 15** shows that low or negative ORP values and DO concentrations below 1 mg/L are generally associated with elevated arsenic, iron, and manganese concentrations. While reducing conditions may facilitate the breakdown of petroleum hydrocarbons, they can also cause naturally occurring arsenic in the soils to mobilize by reducing the relatively insoluble arsenic (V) oxidation state to soluble arsenic (III). Such reducing conditions also yield higher concentrations of iron and manganese. Overall, the ORP, DO, and

metals data indicate that reducing conditions are established at wells 69W-94-13, ZWM-99-22X, ZWM-95-23X, 69WP-08-01, and 69WP-13-01.

3.5 Data Evaluation for 2016 Long-Term Monitoring Events

Groundwater samples were collected from eight AOC 69W wells in October 2016. Samples were analyzed at TestAmerica for dissolved metals and submitted to Katahdin Analytical Services for EPH analysis.

Based on the data evaluation elements reviewed (including holding times, blank sample results, field duplicate results, surrogate recoveries, LCS/LCSD recoveries, and MS/MSD recoveries), the data may be used without qualification, except the following:

Extractable Petroleum Hydrocarbon Analysis:

- The detected and non-detected results for EPH carbon ranges and PAH from sample ZWM-95-15X were qualified as estimated (J/UJ) based on low surrogate recoveries. The detected results for C11-C22 aromatics and naphthalene in the field duplicate sample pair, ZWM-99-22X/DUP1 were qualified as estimated (J) based on the relative percent difference (RPD) above 30%.

Dissolved Metals Analysis:

- The dissolved metals results for all AOC 69W wells were acceptable as reported. No qualifications were needed.

3.6 Land-Use Controls

Ownership of AOC 69W was transferred from the Army to MassDevelopment in August 2007. MassDevelopment later transferred ownership of AOC 69W to the Francis W. Parker Charter Essential School, the current owner of the property. LUCs were implemented to limit potential exposure to contaminated soil and groundwater under existing and future site conditions, per the 1999 ROD and a subsequent deed (Deed, 2007). The LUCs ensure that the remaining contaminated soils beneath and adjacent to the building are not excavated. The LUCs also prohibit the extraction of groundwater from the site for industrial or potable water supply use. Existing land use is evaluated as part of the Five-Year Review process to ensure control requirements are being met. A site-specific annual LUC checklist, including physical onsite inspection and interview components, was developed in 2007 for use during LUC verification activities. The checklist is presented in **Appendix D**.

3.6.1 Land-Use Control Interviews

Interviews were conducted with Ms. Michelle McKenna of the Francis W. Parker Charter Essential School, Mr. Ron Ostrowski of MassDevelopment, Mr. Neil Angus of the Devens Enterprise Commission, regarding the following items:

- Familiarity with the LUCs imposed upon the property and documentation of these controls;
- Excavations (planned or emergency) that may have extended to soil below 2 feet in depth north of the school within the excavated soils management area (ESMA) delineated on **Figure 8**;

- The source of public drinking water for the property; and
- Proposed plans for property sale, future redevelopment, and construction or demolition activities at the site.

Ms. McKenna and Mr. Ostrowski stated that there were no changes to the property in 2016.

3.6.2 Land-Use Control On-Site Inspection

LUCs were verified during annual groundwater sampling events performed by the KGS team. During sampling activities, a LUC inspection was performed to identify the following:

- Any signs of increased exposure potential to the public from soil and/or surface water contaminants;
- Any evidence (repaved cut marks or penetrations in the pavement) within the ESMA that have not been otherwise identified and properly documented by the property owner;
- Any evidence that groundwater extraction wells had been installed at the site; and
- Any evidence of site use changes.

The Francis W. Parker Charter Essential School currently occupies the property; and MassDevelopment supplies potable water to the school. There were no excavations or penetrations through pavement within the ESMA observed during 2016. No groundwater extraction wells have been installed on the site and no evidence of increased exposure potential was observed during the most 2016 LTM sampling event.

3.7 Conclusions

The groundwater COCs for AOC 69W are arsenic and EPH carbon fractions. The monitoring criterion for arsenic is the MCL (10 µg/L) and the criteria for iron (9,100 µg/L) and manganese (291 µg/L) are set at background levels. EPH concentrations are evaluated against MCP standards for comparison purposes but the standards are not considered cleanup goals under the ROD.

Arsenic levels remain above the 10 µg/L MCL standard in groundwater from wells 69W-94-13 (76 µg/L) and ZWM-99-22X (150 µg/L). Arsenic was non-detect in the 2016 sample from the downgradient well point 69WP-08-01. The manganese criterion of 291 µg/L was exceeded in wells 69W-94-13, ZWM-99-22X, and ZWM-99-23X. Manganese was below the monitoring criterion at downgradient well points 69WP-08-01 and 69WP-13-01 at 78.4 µg/L and 140 µg/L, respectively. Elevated dissolved metals, including arsenic and manganese, is anticipated and is due to reducing conditions resulting from hydrocarbon degradation. The metals dissolution is self-limiting once the hydrocarbon source is mitigated and is not expected to migrate a significant distance beyond the original hydrocarbon release point.

EPH C11-C22 aromatics continued to be detected in groundwater from well ZWM-99-22X (210 µg/L) and well 69W-94-13 (410 µg/L) at concentrations above the 200 µg/L benchmark. EPH C11-C22 aromatics were also detected above the benchmark in the sample from well ZWM-99-18X. The EPH C9-C18 aliphatic hydrocarbon results from source area well 69W-94-13 increased from non-detect in 2015 to 1,100 µg/L in 2016. This result exceeds the benchmark of 700 µg/L and appears anomalous compared to previous non-detect results. The EPH C9-C18 results from this well will be further evaluated during the 2017 sampling event.

Groundwater sampling results indicate that, overall, COC concentrations have remained consistent with minor fluctuations since 2009 (with the exception of C9-C18 EPH in well 69W-94-13 which appears to be anomalous and will be resampled in 2017), and the potential for EPH off-site migration has decreased over time. Sampling results at AOC 69W sentry wells indicate that EPH and arsenic are not migrating off site in groundwater.

The ROD remedy includes LUCs to limit potential exposure to contaminated soil and groundwater under both existing and future site use. Observations were made during sampling to identify any signs of increased exposure potential. No evidence of increased exposure potential was observed during the fall 2016 LTM event. The Army will continue LTM activities and LUC inspections until conditions warrant a change in LTM activities. LUCs are likely to remain in place at AOC 69W for the near future.

4.0 AREA OF CONTAMINATION 43G

4.1 Site Background

AOC 43G is in the central portion of the former Main Post of Fort Devens (**Figure 1**). It is located at the southwestern corner of Feinburg Road and Queenstown Street. The layout of AOC 43G is depicted on **Figure 12**. AOC 43G consists of the former Army Air Force Exchange Service (AAFES) gas station (Areas 2 and 3) and historical Gas Station G (Area 1) and has been the subject of RIs due to petroleum contamination from the past operations. The former gas station was used as a motor pool fueling station during the World War II era. The identified USTs at AOC 43G have been removed.

In 1996, the Army conducted a FS to evaluate potential remedial alternatives and signed a ROD to document the selected remedy. The selected Remedial Action for AOC 43G relies on intrinsic bioremediation, groundwater and contaminant modeling, and long-term groundwater monitoring to evaluate the effectiveness of the alternative at controlling groundwater contamination and site risk. Intrinsic remediation is a remedial approach that relies on natural attenuation to remediate contaminants in the subsurface. The remedy will mitigate existing groundwater contamination through natural attenuation and bioremediation and reduce the potential risk of future commercial/industrial exposure to contaminated groundwater. Components of the selected remedy included assessment, data collection and groundwater modeling, LTM, annual reporting to USEPA and MassDEP, and performing 5-year site reviews. Groundwater sampling results and modeling indicated that intrinsic remediation is a viable remedial option for AOC 43G.

4.2 Groundwater Hydrology

An analysis of data from the fall 2016 LTM event shows groundwater flow to be in a west-to-east direction for AOC 43G (**Figure 13**), which is consistent with the site's surficial topography and historical flow patterns. Water levels were collected on October 14, 2016 from wells AAFES-2, AAFES-5, AAFES-6R, AAFES-7, XGM-94-04X, XGM-94-07X, XGM-94-08X, XGM-94-10X, XGM-93-02X and XGM-97-12X. A groundwater gradient of 0.060 ft/ft was calculated at this AOC for the fall 2016 LTM event. The groundwater gradient was calculated perpendicular to the equipotential lines across the main portion of the site in the direction of groundwater flow.

4.3 Groundwater Sampling

Groundwater sampling activities at AOC 43G are conducted annually in the fall. Wells sampled at AOC 43G were source wells AAFES-2, XGM-93-02X, and XGM-97-12X and downgradient sentinel wells XGM-94-04X and AAFES-7.

4.4 Analytical Results

The analytical results for the fall 2016 LTM event at AOC 43G are summarized in **Table 17**. A summary of the exceedances over time at AOC 43G from 1999 to 2016 is presented in **Table 18**. The VPH and alkalinity data for the 2016 LTM event are summarized on **Figure 14**. Total metals results are summarized on **Figure 15**.

4.4.1 October 2016 Data Summary

- VPH Carbon Fractions – VPH concentrations are evaluated against MCP standards for comparison purposes. The C_5-C_8 aliphatics result of 480 µg/L and the C_9-C_{10} aromatics result of 320 µg/L for well XGM-94-04X exceeded respective benchmarks. The C_5-C_8 aliphatics results for the source area wells AAFES-2 (850 µg/L) and XGM-97-12X (420 µg/L) persist above the 300 µg/L benchmark. The C_9-C_{10} aromatics results for the source area wells; AAFES-2 (730 µg/L) and XGM-97-12X (340 µg/L) remain above the 200 µg/L benchmark.

- VOCs – Target VOCs; benzene, ethylbenzene, *m,p*-xylenes, *o*-xylene and toluene were either non-detect or were below applicable MCLs standards in each of the sampled wells.

- Total metals – Total manganese concentrations exceeded the 291 µg/L background level in groundwater at five monitoring wells, with concentrations ranging from 510 µg/L in sentinel well AAFES-7 to 2,800 µg/L in well AAFES-2. Total iron was detected above the 9,100 µg/L background level in monitoring wells AAFES-2 (11,000 µg/L), and XGM-97-12X (25,000 µg/L). The other iron results were either non-detect or detected below 9,100 µg/L.

- Alkalinity measured in samples from each of the wells ranged from 140 to 170 mg/L (calcium carbonate equivalents). No monitoring criterion is established for this parameter.

4.4.2 AOC 43G Data Trends

The fall 2016 LTM results were compared to previous sampling events. Historical exceedances of the cleanup goals from 1999 through 2016 are presented in **Table 18**. Graphical and statistical analyses of selected wells are presented in **Appendix C**. Statistical analyses were compared to a 95% confidence level.

Benzene concentrations at wells AAFES-2, XGM-93-02X, and XGM-97-12X have been below the cleanup goal (5 µg/L) in recent years and were non-detect (3.0 U µg/L) in 2016. Toluene concentrations in well XGM-97-12X have been at or below the cleanup goal since 2001.

VPH monitoring criteria was established by the Army to evaluate intrinsic remediation at AOC 43G. The ROD does not include VPH as a cleanup goal, but the analysis is used to gauge the cleanup of the site and to determine whether a risk-based standard needs to be developed. VPH concentrations are evaluated against MCP standards for comparison purposes. The 2016 data indicated a decrease in VPH C_9-C_{10} aromatics concentration at well AAFES-2 from 827 µg/L in 2015 to 730 µg/L in 2016, at well XGM-97-12X from 1,560 µg/L to 340 mg/L, and at well XGM-93-02X from 62.3 µg/L to non-detect (100 µg/L). These downward trends were statistically significant ($p < 0.001$) at the selected confidence level. Only sentinel well XGM-94-04X had an increase from non-detect (100 U µg/L) in 2015 to 320 µg/L in 2016; however, the overall trend over time shows no statistically significant trend ($p = 0.317$).

The VPH C_5-C_8 aliphatic carbon fraction appears to indicate a general downward trend for some monitoring wells since the historical highs observed in November 2005; however, fluctuations periodically occur. This cyclic pattern may be caused by seasonal fluctuations of the water table with extreme high or low precipitation events. For the fall 2016 sampling event, wells XGM-94-

04X (480 µg/L), XGM-97-12X (420 µg/L), and AAFES-2 (850 µg/L) contained VPH C_5-C_8 aliphatic hydrocarbon above 300 µg/L. No statistically significant data trends since the beginning of the monitoring program were noted for wells AAFES-2 (p = 0.379), AAFES-6/6R (p = 0.172), XGM-93-02X (p = 0.164), or XGM-97-12X (p = 0.055), although an upward trend was noted for well XGM-94-04X (p = 0.031). Well XGM-94-04X will continue to be monitored for its concentration trends over time.

The VPH C_9-C_{12} aliphatic concentrations have fluctuated since 1999. In 2016, the VPH C_9-C_{12} concentrations in the sampled AOC 43G wells were below the 700 µg/L benchmark. No statistically significant trends were identified for the VPH C_9-C_{12} data (p > 0.05).

The manganese concentrations in groundwater wells at AOC 43G are generally above the 291 µg/L background level corresponding with high total iron concentrations. Statistically significant downward trends in iron concentrations were identified for 2 of the 3 wells sampled in 2016: AAFES-2 (p = 0.012) and XGM-93-02X (p = 0.004). No statistically significant trend was identified for iron in well XGM-97-12X (p = 0.135). For manganese, statistically significant downward trends were identified for 3 of the 5 wells sampled in 2016: AAFES-2 (p = 0.002), XGM-93-02X (p = 0.008), and XGM-97-12X (p = 0.007). No statistically significant trend was identified for manganese in wells AAFES-7 (p = 0.174) or XGM-94-04X (p = 0.162).

4.4.3 Water Quality Parameters

General water quality chemistry parameters (pH, initial and final temperatures, specific conductivity, ORP, DO, and turbidity) were measured at each of the wells during the 2016 sampling event. These parameters are measured concurrently with low-flow sampling and are used to determine groundwater stabilization within each well prior to sampling.

The final field readings taken prior to collection of each groundwater sample at AOC 43G are reported in **Table 17**. As observed at other AOCs, low or negative ORP values combined with DO concentrations below 1 mg/L indicate that reducing conditions exist in the groundwater environment, and thus, are generally associated with elevated iron and manganese concentrations. The ORP, DO, and metals data in **Table 17** indicate that reducing conditions are still prevalent in groundwater at the central AOC 43G wells, but oxidizing in nature at the downgradient well AAFES-7.

4.5 Data Evaluation for 2016 Long-Term Monitoring Events

Groundwater samples were collected from five AOC 43G wells in October 2016. The samples were analyzed at TestAmerica Laboratories for total and dissolved metals and total alkalinity and were analyzed at Katahdin Laboratory for VPH analysis.

Based on the data evaluation elements reviewed (including holding times, blank sample results, field duplicate results, surrogate recoveries, LCS/LCSD recoveries, and MS/MSD recoveries), the data may be used without qualification, except the following:

- VPH Hydrocarbon Analysis – VPH hydrocarbon results were acceptable, as reported. No qualifications were needed.

- Total and Dissolved Metals and Alkalinity Analyses – The results for aluminum, iron, magnesium and manganese were qualified as estimated (J) in sample XGM-94-04X due to

MS/MSD recoveries less than control limits. The results for aluminum in the field duplicate sample pair, XGM-97-12X 43G-DUP1, were qualified as estimated (J) due to MS/MSD percent recoveries above 30%. The alkalinity results for all AOC 43G wells were acceptable, as reported.

4.6 Land-Use Controls

AOC 43G is currently under Army ownership. Per the October 1996 ROD, substantive requirements of LUCs that restrict access to contaminated groundwater and soil are in place at AOC 43G. The September 2007 *Addendum to the Real Property Master Plan* (Army, 2007) included supplemental information on LUCs established under BRAC and CERCLA programs that are applicable to the former AAFES Gas station. The LUCs were designed to protect the integrity and effectiveness of the remedy. Any proposed actions that affect the AOC 43G property must consider following the ROD requirements, which include:

- Ensure that the property is not used for residential purposes and prohibit the use of groundwater beneath the site;
- If the Army transfers the property by lease or deed, an Environmental Baseline Survey will be conducted to ensure that the remedy remains protective by incorporating all necessary environmental protection provisions within the FOST and the property transfer deed; and
- Any intrusive construction work must consider that residual soil and groundwater contamination has been documented for AOC 43G, and such actions should be coordinated with the Department of Public Works (DPW), and the BRAC.

In addition to the above LUCs, a site-specific annual LUC checklist, including physical on-site inspection and interview components, was developed in 2007 for use during LUC verification activities. The checklist is presented in **Appendix D**.

4.6.1 Land-Use Control Interviews

An interview was conducted with Mr. Robert Simeone of USACE regarding the following items:

- Familiarity with the LUCs imposed upon the property and documentation of these controls;
- The source of public drinking water for the property; and
- Proposed plans for property sale, future redevelopment and construction or demolition activities at the site.

Mr. Simeone stated that there were no changes to the property during 2016.

4.6.2 Land-Use Control On-Site Inspection

LUCs were verified during annual groundwater sampling events performed by the KGS team. During sampling activities, a LUC inspection was performed to identify the following:

- Any signs of increased exposure potential to the public from soil and/or surface water contaminants;
- Any evidence that groundwater extraction wells had been installed at the site; and

- Any evidence of site use changes.

No evidence of increased exposure potential was observed during the fall 2016 sampling event.

4.7 Conclusions

The ROD identifies groundwater site-specific cleanup goals for COCs at AOC 43G including benzene, ethylbenzene, xylene, manganese, and iron. Toluene and VPH monitoring criteria were not included in the ROD. For purposes of monitoring, toluene is compared to its MCL and VPH is compared to MCP standards. The Army uses the VPH concentrations to evaluate intrinsic remediation at AOC 43G and determine if risk based standards need to be developed.

Groundwater from source area wells AAFES-2 and XGM-97-12X exceeded cleanup goals for iron and manganese. Manganese exceedances were noted at each of the five wells in 2016, although statistically significant downward trends in manganese concentrations were identified in three of the five wells sampled in 2016. Statistically significant downward trends in iron concentrations were identified in two of three wells sampled in 2016. To further investigate the potential for off-site dissolved manganese migration, sentry well AAFES-7 is included as part of the LTM program. The 2016 concentration for total manganese from AAFES-7 exceeded the 271 µg/L background level at 510 µg/L in 2016 but below the benchmark in 2015 (139 µg/L); fluctuating results have occurred from 2008 to 2016. Since 2008, five out of nine annual sampling events have had manganese levels below 271 µg/L at AAFES-7.

Benzene, ethylbenzene, and xylenes results are either non-detect or below the cleanup goals in each of the sampled source area wells.

VPH monitoring for C5-C8 aliphatics and C9-C10 aromatics have exceedances at source area wells AAFES-2 and XGM-97-12X. VPH concentrations are expected to be present within this area. VPH monitoring for C5-C8 aliphatics and C9-C10 aromatics at sentry well XGM-94-04X increased from non-detect or below criteria in 2015 to exceedances of the monitoring criteria in 2016. VPH trends in well XGM-94-04X will continue to be monitored in 2017.

The monitoring results are consistent with the conceptual site model. Natural attenuation processes have effectively reduced the fuel COCs (benzene, ethylbenzene, and xylenes) to below their respective remediation goals without offsite migration. Consistent decreasing or steady state trends of manganese concentrations in groundwater have been well documented in annual monitoring reports, and support the CSM that the elevated metals concentrations in groundwater are a result of the reducing conditions generated by the biodegradation of fuel-related contamination. This pattern of natural attenuation of fuel contaminants in groundwater and elevated metals without offsite migration is consistent with documented conditions at the similar site AOC 43J (Haley & Aldrich, Inc., 2017). As with many other fuel-contaminated sites, once the fuel products have been attenuated, the metals in the aquifer formation will revert to their pre-existing stable geochemistry and dissolved-phase concentrations will decrease (API, 2011).

Inspection activities conducted on site during LTM sampling indicated that no intrusive work has been conducted and therefore no evidence of increased exposure potential.

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5.0 AREAS OF CONCERN 32 AND 43A

5.1 Site Background

AOCs 32 and 43A are located east of Cook Street and north of Independence Drive. A portion of AOC 32 intersects a Zone II aquifer protection area[2] **(Figure 16)**. AOC 32 (DRMO Yard) was an active materials storage facility from approximately 1964 to 1995. It consisted of three fenced areas where various materials were processed and stored, and contained a former waste oil UST (UST #13). The tank was removed in 1992; and contaminated soils were excavated and disposed of off-site. COCs historically have included VOCs, petroleum hydrocarbons, and lead. Arsenic and manganese have also exceeded site criterion. Monitored natural attenuation was the selected remedy for addressing the groundwater contamination. **Figure 16** shows the new warehouse overlying the footprint of the former AOC features.

AOC 43A (POL Storage Area) served as the central distribution point for all gasoline stations at Fort Devens during the 1940s and 1950s, and was subsequently used to store fuels for various purposes. The distribution facility consisted of a main gasoline station, a pump house, four 12,000-gallon USTs, one 10,000-gallon UST, two 12,000-gallon above-ground storage tanks (AST), and two 8,000-gallon ASTs. Gasoline was delivered by rail car and transferred to the tanks. The POL Storage Area consisted of a fenced lot within a developed industrial area of buildings, roads, and grass lots. The site investigation indicated that a low level of xylene and an elevated level of petroleum hydrocarbons existed in the subsurface soils. The RI concluded that groundwater contamination required a remedial action evaluation. After the FS was completed, monitored natural attenuation was chosen as the selected remedy for groundwater and incorporated into the sites' 1998 ROD.

Quarterly groundwater sampling conducted between January and October 1999 in AOCs 32/43A demonstrated that the plume was not migrating, and semi-annual sampling rounds were implemented to monitor the downward trend of concentrations over time (Stone and Webster Environmental Technology & Services, 2000a and 2000b). It was concluded that additional sampling was needed to determine if the future warehouse installation would influence the migration of contaminants or groundwater hydraulics. Groundwater sampling was discontinued at AOC 43A in the fall of 2005 because cleanup goal exceedances had not been observed in AOC 43A wells since 2002. Wells SHL-15 and 32M-92-01X were removed from the sampling program in 2007 because they are located hydraulically cross-gradient/upgradient of historical source areas and are not likely to be influenced by either source area. Each well was retained for the collection of groundwater level data. A remedial action consisting of injection of a persulfate oxidant was implemented in February 2009 to augment the natural attenuation remedy at AOC 32 in the vicinity of the former USTs. The remedial action targeted the remaining site COCs, including the dichlorobenzene isomers, at well 32M-01-18XBR. The findings and conclusions for this remedial action are reported in the 2009 *AOCs 32 & 43A Persulfate Injection Letter Report* (HGL, 2009).

[2] MassDEP establishes public water supply protection areas in accordance with the Drinking Water Regulations at 310 CMR 22.02. In part, a Zone II groundwater protection area is defined as the area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated.

5.2 Groundwater Hydrology

Interpretive overburden and bedrock water table elevation maps prepared for AOCs 32 and 43A show that groundwater generally flows to the south in the overburden and to the south-southwest in the bedrock with a component of easterly flow on the east side of the area (**Figure 17** and **Figure 18**). The groundwater gradient in the overburden was 0.02 ft/ft during the fall 2016 monitoring event and 0.014 ft/ft in bedrock during the same period. The selected flow direction and subsequent gradient calculations were based on areas perceived to represent typical gradients based on the observed equipotential contours.

The overall flow patterns at these AOCs during the 2016 LTM events were generally consistent with previous events. Groundwater elevations during the 2016 monitoring events were in a range observed during previous LTM performance monitoring events. The groundwater elevation data are shown on **Figure 17** and **Figure 18**.

5.3 Groundwater Sampling

Groundwater sampling at AOC 32 was reduced to an annual event in the 2015 LTMMP (Sovereign/HGL, 2015). Wells sampled during the spring 2016 LTM event included wells 32M-01-13XBR, 32M-01-14XOB, 32M-01-17XBR, and 32M-01-18XBR.

5.4 Analytical Results

The annual spring 2016 LTM event consisted of four AOC 32 monitoring well samples. The 2016 AOC 32 groundwater analytical results for the spring annual LTM event are summarized in **Table 19**. VPH concentrations from the spring LTM 2016 event are summarized on **Figure 19**. Dissolved metal concentrations for the spring LTM 2016 event are on **Figure 20**.

5.4.1 June 2016 Data Summary

- VOCs – Groundwater collected from monitoring well 32M-01-18XBR contained a concentration of 1,4-dichlorobenzene (38 µg/L) above cleanup goal of 5 µg/L. The other VOC results were either below respective cleanup goals or were non-detect.
- Dissolved Metals – Arsenic (dissolved) was detected in groundwater at a concentration above the 10 µg/L cleanup goal in monitoring well 32M-01-14XOB (13 µg/L). The other arsenic (dissolved) results were either non-detect or detected were below 10 µg/L. The manganese groundwater sample results were either non-detect or were below the 3,500 µg/L benchmark.
- VPH Carbon Fractions – The C_9-C_{10} aromatic results for well 32M-01-18XBR (450 µg/L) exceeded the benchmark. The other VPH carbon fraction groundwater sample results were non-detect.
- VPH Target Analytes – VPH target analytes (BTEX) groundwater sample results were non-detect at the reporting limits.

5.4.2 AOC 32 Data Trends

Results from 2016 sampling events at AOC 32 were compared to results from previous sampling events. Historical exceedances of the cleanup goals from 2006 through 2016 for AOC 32 are

summarized in **Table 20**, and a summary of the cleanup goal exceedances from 2002 to 2016 for source area well 32M-01-18XBR is presented in **Table 21**. Graphical and statistical analyses of selected wells are presented in **Appendix C**. Statistical analyses were compared to a 95% confidence level.

A major contributor to the decrease in COC concentrations in groundwater is the February 2009 sodium persulfate injection performed near source area well 32M-01-18XBR. Prior to the 2009 injection, COC concentrations, primarily dichlorobenzene (DCB) isomers, exhibited seasonal fluctuations and no definitive concentration trend. Post injection monitoring reveals COC concentration reductions with values below pre-injection levels. No additional persulfate injections are currently planned due to the continued diminishing of COCs.

As shown in **Table 21**, trichloroethene (TCE) concentrations in source area well 32M-01-18XBR have below the monitoring criterion since Fall 2004 and has largely remained non-detect since October 2007. Bromodichloromethane and chloroform in well 32M-01-18XBR have been non-detect since October 2006.

The target analytes 1,2-dichlorobenzene (1,2-DCB), 1,3-dichlorobenzene (1,3-DCB), and 1,4-DCB were detected above the associated monitoring criteria in groundwater at well 32M-01-18XBR from 2002 to 2009. However, since the February 2009 sodium persulfate injection, all three isomers have exhibited concentration declines. Furthermore, the three isomers continue to depict inter-related trends that fluctuate from event to event and are likely the result of sequential microbial de-chlorination and degradation reactions. 1,2-DCB has been below the monitoring criteria since May 2010. 1,3-DCB has been below the criteria since June 2014 and has shown a statistically significant downward concentration trend ($p = 0.029$) since the injection was conducted in 2009. Only 1,4-DCB was detected above its criterion (5 µg/L) in the source well, 32M-01-18XBR (38 µg/L), in 2016. Since the 2009 injection, 1,4-DCB concentrations have shown a general downward trend, although not statistically significant at the selected confidence interval ($p = 0.08$).

The VPH C_9-C_{10} aromatics concentrations at well 32M-01-18XBR have demonstrated an overall downward trend, although not statistically significant ($p = 0.111$). The VPH C_9-C_{12} and EPH C_9-C_{18} aliphatic concentrations decreased to below the monitoring criteria by 2005 and 2007 respectively. EPH concentrations have been below the monitoring criteria since 2007 and were not analyzed in 2016. The VOC and VPH concentrations at well 32M-01-18XBR are expected to continue to decrease.

Arsenic has been periodically detected above the 10 µg/L cleanup goal in AOC 32 wells since 2006 (**Table 20**). Historical total arsenic concentrations at 32M-01-14XOB were consistently above 10 µg/L; ranging up to a high of 93.1 µg/L in 2015, with no overall statistically significant trend ($p = 0.311$). The concentration for dissolved arsenic in 32M-01-14XOB was 13 µg/L for 2016. Historical total arsenic concentrations at source well 32M-01-18XBR have fluctuated between 2 µg/L (2013) and 51 µg/L (2009); dissolved arsenic was 2.8 J µg/L in 2016 and has been below the cleanup goal since Fall 2010. These fluctuations likely stem from the established reducing environment near this well compared to that of the other AOC 32 wells. As discussed for other AOCs, such a reducing environment, combined with a low DO concentration, promotes more soluble, non-sequestered arsenic and therefore, a higher groundwater concentration.

Manganese concentrations above the 3,500 µg/L background level have been detected in groundwater at AOC 32 since 2006 (**Table 20**) and have remained below the benchmark since 2006 with the exception of periodic detections in 2008 and 2009 in sentry well 32M-01-14XOB.

By comparison, source well 32M-01-18XBR had historical concentrations of manganese above 3,500 µg/L from April 2002 through May 2009 (**Table 21**). However, data from 2009 through 2016 indicate groundwater under well 32M-01-18XBR has reverted to an oxidized environment. Combined with increasing DO, the result is sequestration of arsenic and manganese back into the aquifer soils and lower concentrations in the groundwater sample.

5.4.3 Water Quality Parameters

General water quality chemistry parameters (pH, temperature, specific conductivity, ORP, DO, and turbidity) were measured at each of the four wells during the spring 2016 sampling event. These parameters are measured concurrently with low-flow sampling and are used to determine groundwater stabilization within each well prior to sampling.

The final field readings for water quality parameters at AOC 32 during the spring 2016 sampling event are reported in **Table 19**. The ORP and DO data show that reducing conditions are not consistently present in the wells at AOC 32, with the exception of well 32M-01-14XOB. A comparison of the 2010 through 2016 field results indicates that well 32M-01-18XBR has reverted to an oxidizing environment.

5.5 Data Evaluation for 2016 Long-Term Monitoring Events

Groundwater samples were collected from four AOC 32 wells in June 2016. Samples were analyzed at TestAmerica Laboratories, Inc. for VOCs and dissolved metals and submitted to Katahdin Analytical Services for VPH analysis.

Based on the data evaluation elements reviewed (including holding times, blank sample results, field duplicate results, surrogate recoveries, LCS/LCSD recoveries, and MS/MSD recoveries), the data may be used without qualification.

Volatile Organic Compound Analysis

- VOC results for the AOC 32 wells were acceptable, as reported. No qualifications were needed.

Volatile Petroleum Hydrocarbon Analysis

- VPH results for the AOC 32 wells were acceptable, as reported. No qualifications were needed.

Dissolved Metals Analysis

- Dissolved metals results for the AOC 32 wells were acceptable, as reported. No qualifications were needed.

5.6 Land-Use Controls

Ozark Automotive Distributers, Inc. (a division of O'Reilly Automotive, Inc.) currently operates the property at AOCs 32/43A. LUCs were established to limit the potential exposure to the contaminated soil and groundwater under both the existing and future site conditions, per the ROD

signed in February 1998, and was incorporated into the deed upon transfer to MassDevelopment. The LUCs were included in the deed when O'Reilly Automotive, Inc., purchased the property. The LUCs ensure that exposure to any remaining contaminated soils beneath the site is controlled and the extraction of groundwater from the site for industrial or potable water supply is not permitted. LUCs are verified during annual sampling events performed by KGS. Existing land-use is evaluated as part of the Five-Year Review process to ensure control requirements are being met. A site-specific annual LUC checklist, including physical on-site inspection and interview components, was developed in 2007 for use during LUC verification activities. The checklist is presented in **Appendix D**.

5.6.1 Land-Use Control Interviews

Interviews were conducted with Mr. Ron Ostrowski and Mr. Neil Angus of MassDevelopment, and Mr. Jason Pahl of O'Reilly Automotive, regarding the following:

- Familiarity with the LUCs imposed upon the property and documentation of these controls;
- Excavations (planned or emergency) that may involve soils and groundwater; and
- Proposed plans for property sale, future redevelopment, and construction or demolition activities at the site.

Mr. Ostrowski and Mr. Angus stated that the building is owned and operated by O'Reilly Automotive. The contact for the site is Facilities Manager, Jason Pahl. He confirmed that there have been no changes at the facility and no ground disturbance at the site during 2016.

5.6.2 Land-Use Control On-Site Inspection

LUCs were verified during annual groundwater sampling events performed by the KGS team. During sampling activities, a LUC inspection was performed to identify the following:

- Any signs of increased exposure potential to the public from soil and/or surface water contaminants;
- Any evidence that groundwater extraction wells had been installed at the site; and
- Any evidence of site use changes.

MassDevelopment supplies potable water to the large warehouse that currently occupies the property. No evidence of increased exposure potential was observed during the 2016 sampling events.

5.7 Conclusions

Groundwater samples were collected from four monitoring wells at AOC 32 in June 2016. Groundwater from well 32M-01-14XOB had a detection of dissolved arsenic above the cleanup goal of 10 µg/L. The concentrations of 1,4-DCB and VPH C9-C10 in source area well 32M-01-18XBR have been above the monitoring criteria since June 2014. 1,2-DCB has been below the monitoring criteria since May 2010. 1,3-DCB has been below the criteria since June 2014 and has shown a statistically significant downward concentration trend ($p = 0.029$) since the injection was conducted in 2009. There were no other exceedances of cleanup goals/benchmarks during the spring 2016 sampling event.

LUCs have been implemented to limit exposure to contaminated groundwater under current and future site use. No evidence of increased exposure potential was observed during LTM sampling activities or during the LUC inspections.

6.0 DEVENS CONSOLIDATION LANDFILL (DCL)

6.1 Site Background

The DCL was constructed on the former Fort Devens golf course driving range to accommodate excavated material from seven remedial areas consisting of two Study Areas (SAs), four AOCs, and one pesticide removal project at three Devens housing areas (HAs). The DCL is shown on **Figure 21**. The seven DCL contributor sites were:

1. SA 12: A 0.5-acre location where construction debris and yard waste were deposited (approximately 8,700 cubic yards);
2. SA 13: A 1-acre area used from 1965 to the mid-1990s for yard-waste (approximately 10,000 cubic yards);
3. AOC 9: An area used for storing wood, concrete, asphalt, metal, brick, glass, and tree stumps (approximately 121,000 cubic yards);
4. AOC 11: A former landfill used from 1975 to 1980 for disposal of wood-frame hospital demolition debris (approximately 35,000 cubic yards);
5. AOC 40: 4 acres used for construction debris, ash, stumps, and logs (approximately 125,400 cubic yards);
6. AOC 41: A 0.25-acre landfill in the South Post Impact Area (SPIA) that was used up to the 1950s for disposal of non-explosive material and household debris (approximately 1,500 cubic yards); and,
7. HAs Grant, Locust, and Cavite: Soils and walling material contaminated with VOCs or pesticides (approximately 2,290 tons of soil and approximately 1,240 tons of concrete).

The USEPA approved the ROD for landfill remediation of the first six areas in July 1999. It included provisions for either on-site or off-site disposal options. The on-site landfill construction alternative was selected as the preferred alternative. Construction of the DCL commenced in September 2000 and was completed in November 2002. *The Remedial Action Closure Report* prepared by Shaw Environmental (formerly Stone & Webster, Inc.) in September 2003 was accepted, certifying that the DCL was constructed and capped in accordance with the ROD, and met the performance standards and/or response objectives in the ROD. The ROD required the collection of samples from ground water monitoring wells in accordance with 310 Code of Massachusetts Regulations (CMR) 19-132 to assess the effectiveness of the remedy. LTM activities have been performed since the completion of the landfill construction.

The Closure Report provides the operations and maintenance manual for the DCL (Shaw, 2003). The USACE was responsible for operating and inspecting the landfill facility and the KGS team was responsible for groundwater and leachate discharge sampling in 2016. Generated leachate is discharged to the Devens sewage system under an industrial wastewater discharge permit. Effluent criteria and reporting requirements are specified in the leachate discharge permit, which was updated August 21, 2006. MassDevelopment established new effluent criteria beginning 2009.

6.2 Well Inspection

Monitoring well LFM-99-06A was decommissioned in 2015 and a replacement well LFM-99-06A-RP was installed (KGS, 2016b).

Well LFM-03-07 was inaccessible for sampling during 2016. Recent construction activities by MassDevelopment adjacent to the DCL resulted in this well being paved over. MassDevelopment uncovered and repaired the monitoring well in July 2017.

6.3 Groundwater Hydrology

Groundwater flow patterns at the DCL show a northeasterly flow pattern for the spring and fall 2016 events as indicated on **Figure 22** and **Figure 23**, respectively. Groundwater elevations were consistently lower (approximately ranging from 1.5 to 4 feet lower) during the fall 2016 event relative to those observed during the spring 2016 LTM event due to short term drought conditions in 2016. Groundwater flow patterns beneath the landfill during the spring and fall 2016 events remained consistent. The calculated groundwater gradients during June and October 2016 were 0.043 ft/ft and 0.044 ft/ft, respectively. The groundwater gradient was calculated between monitoring wells LFM-99-02B and LFM-99-05B for each groundwater gauging event. The flow lines used to calculate the gradient are believed to be representative of groundwater flow at the site. Analysis of the groundwater levels in monitoring wells located in the overburden (LFM-99-5A and LFM-99-6A-RP) and Profiles 1 and 2 (**Figure 24)** indicate that the groundwater level continues to be lower than the elevation of the landfill liner.

6.4 Groundwater Sampling

Groundwater at DCL is sampled semi-annually as part of the spring and fall LTM events. Wells to be sampled during the spring and fall LTM event included LFM-99-02B, LFM-99-05A, LFM-99-06A-RP, and LFM-03-07. As noted in **Section 6.2**, well LFM-03-07 was inaccessible due to construction site activities adjacent to the DCL and could not be sampled during the spring or fall 2016 events.

Water level readings are collected from monitoring wells LFM-99-01B, LFM-99-03B, and LFM-05B during the spring and fall hydraulic events. The depth to water for each well is evaluated against shallow "trigger" depths listed in **Table 22.** If the depth to water is less than the "trigger" depth, there is a potential that groundwater may come into contact with the landfill and these locations would need to be sampled along with the LTM wells. The depth to water/groundwater elevations from the spring and fall 2016 hydraulic events compared to the "trigger" depths to water/groundwater elevations are summarized in **Table 22.** The water table remained below the "trigger" values during the 2016 hydraulic events and no additional sampling was required. Analytical results for the spring and fall 2016 DCL LTM wells are presented in **Table 23** and **Table 24.**

6.5 Leachate Sampling

The DCL is permitted to discharge industrial wastewater to the Devens Sewerage System in accordance with Industrial Discharge Permit No. 017 granted by MassDevelopment. The permit legally binds the DCL effluent to meet the specified permit conditions. Penalties can be applied if the effluent discharge exceeds the conditions specified in the permit. Leachate monitoring was

performed on a quarterly and semi-annual frequency until August 2006 when MassDevelopment approved a reduction in the leachate monitoring to an annual event. Sampling is performed each year between October 1 and December 31, and self-monitoring reports are due to MassDevelopment by January 5 of the following year. **Table 25** lists the DCL Leachate analytical results from sampling on December 8, 2016. A summary of the DCL leachate analytical results is presented in **Section 6.8.3.**

6.6 Devens Consolidation Landfill Leachate Discharge Quantity Monitoring

DCL leachate discharge quantity monitoring was historically performed monthly by MassDevelopment personnel. Operation and maintenance (O&M) of the leachate pumping station began in March 2008. Monitoring results are used to calculate leachate discharge quantities for comparison with historical discharge data. Leachate discharge quantities are presented in **Table 26**. Leachate discharge quantities are decreasing over time and have decreased substantially since the landfill cap was completed.

6.7 Landfill Inspections

Since its completion, the DCL has been inspected annually by USACE to ensure it continues to eliminate the potential risk to human health and the environment. The inspection frequency was changed from semi-annual (spring and fall) to annual in 2008 based on recommendations in the USEPA and MassDEP approved LTMMP (HGL, 2008).

The DCL landfill cap was inspected on November 9, 2016, by USACE personnel. Observations were made regarding the vegetative cover, vegetation types, erosion, settlement, and general condition of the various features. The following list summarizes the findings of the fall inspection:

- The landfill cap was in good condition, with no settlement or significant erosion. In general, the cap vegetation appeared healthy and provides good coverage of most areas of the cap, however the original perennial grasses and clover are beginning to get replaced over large areas of the cap, with weedy and some woody species invading. The woody vegetative growth gets cut during the annual mowing; however, the stalks are left over, and should be removed, and the areas reseeded. Some of the woody species are near gas vents and along riprap areas, and were not fully cut, and could become established. Maintenance activities to re-establish growth (i.e., re-seeding, fertilizer) should be performed in general over the entire cap, due to a mixture of species which do not promote dense growth. Track marks from mowing were visible during the inspection. Reseeding and grass reestablishment would help with preventing future erosion. The cap and adjacent area vegetation were mowed during fall 2016. Annual mowing should be continued.
- The site and access roads are located on private property owned by Mass Development. Gates at the south end of the landfill restrict access. The access road from the entry gate around to the leachate pump station was in good condition. There were no ruts, potholes, or eroded areas.
- The fence is in good condition. The fence and entry gates, rock features (such as drainage swales and riprap), telephone poles lying on the ground, and the site's topography, help to minimize entry onto the site by motor vehicles. These access limitations appear to be adequate at the present time with no signs of vandalism or other unauthorized entry.

- The cap drainage system was in good condition. Drainage channels were free of sediment and debris. The vegetation on the side slopes of the landfill was healthy and dense. A minimal amount of grass was growing in the gabion slope drains, but there were no species that appeared to have extensive root systems that would disrupt the function of the system. Some woody vegetation has begun to establish in the drainage channel around the perimeter of the landfill. The woody vegetation stumps should be removed before they become established in the drainage system components.

- The perimeter toe drain was showing signs of vegetation beginning to establish. The toe drain appeared to be functioning properly, and there were no visible signs of erosion or developing slope stability problems. Toe drains should continue to be monitored for vegetation, which should be removed periodically to maintain proper operation of the toe drain.

The gas vent system is in excellent condition. Vent pipes V-1, V-2, V-5 and V-6 have broken bird screens, V-7 and V-8 are missing bird screens. The remaining vent pipes and bird/insect screens are intact and functioning as intended. Gas monitoring showed: zero readings for hydrogen sulfide (H_2S), VOCs and carbon monoxide (CO) except for V-4 which had a CO reading of 1 part per million (ppm); carbon dioxide (CO_2) levels ranging from 5% at V-6 to 18% at V-7; and variable levels of oxygen (O_2), methane (CH_4), and CH_4 Lower Explosive Limit (LEL) levels. A GEM 2000 gas monitor was used to monitor the gas vents for methane, CO_2, oxygen, and LEL. A MultiRAE+ was used to check VOC levels, hydrogen sulfide, CO, oxygen, and LEL readings. Gas vents V-5, V-6, V-7, and V-9 had methane levels greater than 100% LEL, as measured on the GEM 2000, and are the highest vents located near the top of the landfill. Although historically there are high LEL readings for some of the higher elevation vents on the landfill, this is not believed to be a concern. The landfill is fully encapsulated and, hence, the methane production is the result of the natural degradation of the organics from within the soils and sediments excavated and placed in the landfill during the construction process. The majority of the methane appears to be within the confined space of the respective vents of the passive gas collection system. The reason that the methane is predominantly observed in the higher elevation gas vents is that methane is lighter than air (predominantly N_2 and O_2). Once the methane has been passively vented to the atmosphere, it disperses rapidly and is not expected to pose a significant ignitability risk. At the present time, an assessment of an active system does not seem to be warranted as these wells are passively vented directly to the atmosphere and the vents are not located near a potential ignition source.

Minor maintenance actions for the drainage system that are recommended at this time include removal of vegetation that has begun to show establishment within drainage channels (gabion slope drains, riprap toe drain, perimeter riprap drainage channels, etc.) and the crushed stone access roads.

Routine maintenance activities that should continue to be performed are annual mowing and monitoring and control of encroaching vegetation in the drainage system. The annual mowing of the cap should be done in late August to avoid harming ground-nesting songbirds. Mowing should also include the adjacent open field areas. The full report for the November 2016 inspection is presented in **Appendix E.**

6.8 Analytical Results

Groundwater analytical results for the spring and fall 2016 DCL LTM events are presented in **Table 23** and **Table 24**, respectively. The spring and fall 2016 sampling events consisted of collecting three groundwater monitoring well samples and one field duplicate sample. Per the LTMMP, four wells are typically sampled during the spring and fall events; however, as noted in **Section 6.2**, LFM-03-07 was inaccessible due to construction activities adjacent to the DCL and could not be sampled during the spring or fall 2016 events.

The annual fall 2016 leachate sampling event consisted of a single landfill effluent leachate sample collected on December 8, 2016 to fulfill the requirements of MassDevelopment Industrial Wastewater Discharge Permit No. 017. The leachate monitoring results are presented in **Table 25**.

6.8.1 June 2016 LTM Data Summary

- Extractable Petroleum Hydrocarbon (EPH) fractions and target PAH were non-detect in each of the sampled DCL wells.
- Volatile Petroleum Hydrocarbon (VPH) fractions and target VOC were either non-detect or detected below monitoring criteria.
- Organochlorine pesticide results were non-detect in each of the sampled wells.
- Target metals results were either non-detect or detected below the respective MCL standards.
- Total cyanide results were either non-detect or detected below the MCL.
- Wet chemistry parameters TDS, chloride, sulfate, nitrate/nitrite and total alkalinity were reported in groundwater from each of the three wells during spring 2016. TDS concentrations ranged from 470 to 810 mg/L; chloride concentrations ranged from 160 mg/L to 370 mg/L; sulfate concentrations ranged from 17 to 29 mg/L; total alkalinity concentrations ranged from 71 to 100 mg/L and nitrate/nitrite concentrations ranged from 0.60 to 2.9 mg/L. COD was non-detect in the sampled wells.

6.8.2 October 2016 LTM Data Summary

- EPH fractions and target PAH were non-detect in all DCL wells, except for a trace detection of naphthalene in well LFM-99-05A (3.2 µg/L) which was below the monitoring criterion of 20 µg/L.
- VPH fractions and target VOC were either non-detect or detected below monitoring criteria. Organochlorine pesticide results were non-detect in each of the sampled wells.
- Target metals results were either non-detect or detected below respective MCL standards.
- Total cyanide results were either non-detect or detected below the MCL.
- Wet chemistry parameters TDS, chloride, sulfate, nitrate/nitrite, and total alkalinity were reported in groundwater at all three sampled wells. TDS concentrations ranged from 560 to 730 mg/L; chloride concentrations ranged from 260 to 360 mg/L; sulfate concentrations ranged from 23 to 31 mg/L; nitrate/nitrite concentrations ranged from 0.81 to 3.8 mg/L; and total alkalinity concentrations ranged from 87 to 160 mg/L. COD reported at 5.0 J and 5.4 J mg/L in two wells.

6.8.3 December 2016 Leachate Analytical Data Summary

- Semi-volatile organic compounds, SVOCs, organochlorine pesticides and PCBs were non-detect in the leachate sample. There was a trace level of the VOC, acetone (3.8 µg/L), reported in the leachate sample.
- Total toxic organics (TTO) is defined as the sum of all detected VOCs, SVOCs, organochlorine pesticides and PCBs. The TTO concentration for the leachate sample was 0.0038 J mg/L.
- TPH was detected in the leachate sample at 0.87 mg/L.
- Target metal results per the Wastewater Discharge Permit No. 017 were non-detect, except for nickel at 0.0037 J mg/L.
- Wet chemistry parameters indicated the leachate pH was 7.7, which is within the permit range of 4.5-9.5. Total Suspended Solids (TSS) was reported at 1.2 J mg/L, below the 400 mg/L limit established in MassDevelopment Industrial Wastewater Discharge Permit No. 017.

6.8.4 DCL Data Trends

Historical analytical results for the DCL wells are summarized in **Table 27**, **Table 28**, and **Table 29**. Groundwater samples from wells LFM-99-02B and LFM-99-05A (**Table 27** and **Table 28**) have remained at trace or non-detect levels for EPH and organochlorine pesticides since monitoring began in 2003.

Similarly, metals concentrations have been consistently non-detect or below the respective MCLs in groundwater at all three DCL monitoring wells since the November 2003 sampling event.

The 2016 wet chemistry parameters also remained generally consistent with past data.

6.8.5 Water Quality Parameters

General water quality chemistry parameters (pH, temperature, specific conductivity, ORP, DO, and turbidity) were measured at each of the wells during the 2016 sampling events. These parameters are measured concurrently with low-flow sampling and are used to determine groundwater stabilization within each well prior to sampling.

The final field readings taken prior to collection of each groundwater sample are reported in **Table 23** and **Table 24**. Any contaminant detection at the DCL wells is sporadic and low in concentration; therefore, no definitive correlation can be established between the measured groundwater quality parameters and the presence or absence of contamination in the sampled wells.

6.9 Data Evaluation for 2016 Long-Term Monitoring Events

6.9.1 June 2016 Groundwater Analytical Data Review

Groundwater samples were collected from three DCL wells in June 2016. The samples were analyzed at TestAmerica Laboratories, Inc. for organochlorine pesticides, total metals, cyanide and wet chemistry parameters (TDS, alkalinity, chloride, sulfate, nitrite/nitrate, and COD). DCL LTM samples were submitted to Katahdin Analytical Services for VPH and EPH analyses. The

DCL leachate sample was also submitted to Katahdin for VOC and SVOC analyses by drinking water Methods 624 and 625.

Based on the data evaluation elements reviewed (including holding times, blank sample results, field duplicate results, surrogate recoveries, LCS/LCSD recoveries, and MS/MSD recoveries), the data are acceptable as reported and may be used without qualification.

6.9.2 October 2016 Groundwater Analytical Data Review

Groundwater samples were collected from three DCL wells in October 2016. Samples were analyzed at TestAmerica Laboratories, Inc. for organochlorine pesticides, total metals, cyanide, and wet chemistry parameters (TDS, alkalinity, chloride, sulfate, nitrite/nitrate, and COD). Samples were submitted to Katahdin Analytical Services for VPH and EPH analyses. The data were found to be usable, with some individual data points requiring qualification as outlined below.

Organochlorine pesticide Analysis:

- The non-detect results for select pesticides in sample LFM-99-06RP were qualified as estimated (UJ) due to low MS/MSD recoveries.

6.9.3 December 2016 Leachate Analytical Data Review

One leachate sample was collected in December 2016. The leachate sample was submitted to TestAmerica for total metals, cyanide, TPH (DRO), total phenol, pesticides/PCBs and wet chemistry parameters. Samples were submitted to Katahdin Analytical Services for VOC and SVOC analyses. The data were found to be usable as reported and may be used for its intended purpose.

6.10 Land-Use Controls

MassDevelopment maintains ownership of the DCL property and agreed to grant the Army a permanent easement in 2001 to build and operate the landfill (Easement Agreement, 2001). DCL contributor sites AOC 9, AOC 40, and SA 13 were transferred from the Army to MassDevelopment in March 2006. The March 2006 deed included LUCs to prevent residential development of the property (Deed, 2006).

The 1999 ROD had indicated LUCs "were planned for the proposed Consolidation Landfill." LUC inspections are conducted per the "LUC Monitoring Plan" included in the 2008 LTMMP. A site-specific annual LUC checklist, including physical on-site inspection and interview components, was developed in 2007 for use during LUC verification activities. The checklist is included in **Appendix D**.

6.10.1 Land-Use Control Interview

An interview was conducted with Mr. Ron Ostrowski of MassDevelopment regarding the following items:

- Familiarity with the LUCs imposed upon the property and documentation of these controls;
- Excavations (planned or emergency) that may involve soils and groundwater; and

- Proposed plans for property sale, future redevelopment and construction or demolition activities at the site.

Mr. Ostrowski acknowledged the construction activity near the DCL had inadvertently paved over monitoring well LFM-03-07, as noted in **Section 6.**2. MassDevelopment is currently working to locate the well and determine whether it can be restored for sampling in 2017.

6.10.2 Land-Use Control On-Site Inspection

LUCs were verified during annual groundwater and landfill leachate sampling events performed by the KGS team. During sampling activities, a LUC inspection was performed to identify the following:

- Any signs of increased exposure potential to the public from soil and/or surface water contaminants;
- Any evidence that groundwater extraction wells had been installed at the site; and
- Any evidence of site use changes.

No groundwater extraction wells have been installed on the site. As noted above, monitoring well LFM-03-07 was inaccessible in 2016 during construction activities adjacent to the DCL. These construction activities continued through 2016. The condition of the well is currently being evaluated for restoration for the 2017 sampling events.

In addition to the on-site DCL inspection, a LUC inspection of the DCL contributor sites (AOC 9, AOC 40, and SA 13) was performed and are included in the 2015 Five Year Review Addendum (KGS, 2017). LUCs were incorporated in the 2006 deed as stated previously. The findings of the contributor site inspection revealed no abnormalities or changes in land-use at the individual contributor sites and there was no evidence of residential development as specified in the LUCs.

6.11 Conclusions

The 2016 results for the DCL groundwater monitoring wells remained consistent with groundwater results from previous LTM events. EPH and organochlorine pesticide results have been non-detect or detected below the associated analytical reporting limits since 2004. Metals results have been below MCLs in the DCL monitoring wells groundwater samples since 2003 and the 2016 results were consistent with the historical results.

The 2016 wet chemistry parameters were generally consistent with previous results, and continue to indicate a downward trend for chloride and TSS since their notable spike in 2006.

LUC activities conducted onsite during LTM sampling activities indicated no evidence of increased exposure potential to site COCs. LUC inspections of the DCL contributor sites (AOC 9, AOC 40, and SA 13) revealed no changes in land use at those locations. Per the requirements of the 2006 transfer deed, these contributor sites are not being used, or under development, for residential purposes**.**

There were no exceedances of the DCL Wastewater Discharge Permit No. 017 in the December 2016 sampling of the DCL leachate.

7.0 HOUSING AREAS AND 37-MM IMPACT AREA

7.1 Site Background

The Grant HA, Oak HA, Maple HA, and 37-mm Impact Area are located within the Main Post, located between Hospital Road, El Carney Street, and the Nashua River. A map illustrating the location of the HAs and 37-mm Impact Area is presented on **Figure 25.** Historical records indicate that training was conducted within the then wooded HAs from 1917 until a multi-family housing development was constructed in the late 1950s. A 37-mm range was located along the western boundary of the Grant HA with an impact area, which occupies approximately 2 acres, on the northern slope of Oak Hill.

In 1994/1995, USACE completed a study to document the locations of all the training areas and ranges at Devens. Based on the findings of this study, The Archive Search Report, several former weapons training ranges within the former installation were identified. Several potential MEC sites were identified. Grant HA, along with portions of the Oak and Maple Housing Areas, were designated as Area 11. A 1995 munitions response investigation confirmed the presence of MEC throughout Area 11 with a clustering of MEC located at the southern end of Area 11, north of the former Oak Housing Area (USACE, 1995).

In 1996, MEC removal actions were performed at the 37-mm Impact Area and extending into the former Oak and Maple HAs. Over fifty unexploded 37-mm projectiles and many 37-mm fragments were located and disposed. Most of the ordnance that was discovered was found in the two dense clusters indicating former target locations. This removal action was summarized in the Final Removal Action Report (Human Factors Application [HFA], 1996).

Following the removal action in 1996, concerns regarding the potential for remnant unexploded ordnance (UXO) to exist in the soil within Grant HA resulted in MassDevelopment contracting Ordnance and Explosive Remediation, Inc. (OER) to conduct a survey of the area. Digital geophysical surveying was completed to evaluate whether munitions and explosives of concern (MEC) existed. The 1996 MEC investigation by USACE and the 2004/2005 MEC survey and removal action by OER removed all identified UXO located within 18 inches of the surface over the Grant HA and portions of the surrounding HAs. The OER removal action found and destroyed 31 UXO (20 37-mm practice round projectiles, four mines, one rifle grenade, and six stokes mortars), and 17 other ordnance items. Most the UXO were found within an estimated 2-acre area associated with the target Impact Areas and the north slope of Oak Hill. This area is located on the southwest edge of the Grant HA. The survey and removal action results were presented in the *Site Specific Final Report, Digital Geophysical Mapping (DGM) & Unexploded Ordnance (UXO) Removal, Grant Housing Area, Former Ft. Devens, Harvard, Worcester, Massachusetts* (OER, 2006).

Based on the findings of the previous investigations and removal actions, an Expanded Conceptual Site Model (ECSM) (USACE, 2006) was developed for the former Grant HA that extended to portions of the Oak and Maple Housing Areas. The ECSM concluded that the characterization of the UXO survey is fully developed and sufficient to identify the areas of concern that have a potential for MEC.

In addition to the UXO removal, the Army conducted a pesticide removal action in 2002. It was determined that in the late 1950s and early 1960s, the Army had applied pesticides around the

housing units for a means of pest control. The removal action resulted in the excavation and disposal of more than 150,000 tons of soil and concrete from the Grant HA. The excavated soil and concrete were hauled and placed in the DCL landfill. During this removal action, no UXO was found. The Army also conducted a PCB Time Critical Removal Action from 2002 to 2005 within the Grant HA. Approximately 12,000 tons of soil were excavated and disposed. MEC was not encountered during the removal action.

These efforts were documented in the Preliminary Assessment/Site Inspection and Supplemental Site Investigation Comprehensive Report (PASI/SSI Report). The PASI/SSI also provided a detailed summary of land-use, habitat survey, and sampling efforts, which concluded that the Grant HA did not pose unacceptable hazards to ecological receptors. However, the PASI/SSI Report recommended a Focused Feasibility Study (FFS) be prepared to evaluate the alternatives involving LUCs for the Impact Area (Weston, 2008b).

The Army then contracted Weston to draft a FFS comparing the remedial alternatives addressing potential residual UXO at the Grant HA and the 37-mm Impact Area. The FFS evaluated potential remedial alternatives and was completed in 2008 (Weston, 2008a). Along with the FFS, a Proposed Plan was created in accordance with section 117 CERCLA, which gave the public the opportunity to participate in the remedial action.

A ROD was signed in 2009. The remedial action objective (RAO) for the Grant HA and 37-mm Impact Area is to prevent direct contact with UXO, which may remain in the soils at the site. As noted in the ROD, the LUCs are "preventative for direct contact as they educate the contractor and resident as to the potential presence of UXO and the actions to be taken if presumed UXO is encountered, which included not handling the UXO" (Weston, 2009). In pursuant to the ROD, the Land-use Control Implementation Plan (LUCIP) was created by the Army in May 2011 (U.S. Army BRAC, 2011). The document indicates that the LUCs for Grant HA include: (1) public education to property owners, residents, as well as any construction and/or utility contractors conducting ground intrusive activities on the property; and (2) a deed notice that will be inserted into any Grant HA deeds by MassDevelopment to convey there is no evidence of additional UXO present at the site, but that the possibility does remain that UXO could be discovered in the future. On an annual basis, the Army will also conduct annual reviews to confirm the overall effectiveness and compliance with the established LUCs.

Additionally, the LUCIP indicates that the LUCs for the Impact Area include:

(1) institutional controls (IC) to be implemented through a Grant of Environmental Restrictions and Easements (GERE);
(2) Access controls would be implemented using signage and fencing to restrict public access;
(3) public education to property owners, residents, as well as any construction and/or utility contractors conducting ground intrusive activities on the property;
(4) prohibitive directives to include restrictions on all ground intrusive activities; and
(5) annual site inspections to evaluate the access controls, monitor the potential presence of surficial UXO, and evaluate the overall effectiveness of the LUCs.

A MEC remedial investigation (RI) was conducted at former Oak and Maple Housing Areas in 2010/2011 based on recommendations in the PASI/SSI Report (Weston, 2008b). The investigation revealed that the probability of encountering MEC within the previously developed former Oak and Maple Housing Areas was considered to be extremely low (HGL, 2012). A FFS Addendum

to the Grant HA and 37-mm Impact Area FFS was prepared to address the former Oak and Maple Housing Areas (Sovereign/HGL, 2013). The FFS Addendum recommended LUCs for the former Oak and Maple HAs. The RAO for the former Oak and Maple HAs was the same as the Grant HA and 37-mm Impact Area (prevent direct contact with UXO/MEC, which may remain in soils) (Weston, 2009). The remedy for the former Oak and Maple Has was incorporated within the Grant HA and 37-mm Impact Area site via an Explanation of Significant Differences (Sovereign/HGL, 2014).

The additions to the ROD selected remedy, for application to the Oak and Maple Housing Areas, consist of inclusion of (1) pre-construction clearance of selected grids at the Oak Housing Area, (2) a MEC physical preview of any proposed construction footprint, (3) future MEC construction support for all intrusive activities in areas where construction support has not previously been conducted, (4) the inclusion of a deed notice for the prohibition of residential reuse within the LUCs and (5) LUC affirmative measures for public education.

Currently both the Grant, Oak, and Maple HAs and 37-mm Impact Area are under MassDevelopment ownership. The HAs are open space with ground covering consisting of bare soils, woodland, and unmaintained lawns. Former HA infrastructure, including roadways and utilities, remain in place. The Impact Area is a fenced area along the steeply sloping and wooded North Slope of Oak Hill.

The area is currently zoned for residential reuse per the Devens Reuse Plan. MassDevelopment executed and properly recorded a GERE for the Grant HA, which was recorded at the Worcester Registry of Deeds on December 19, 2011, book 48291, page 138.

7.2 Land-Use Controls

Ownership of Grant, Oak, and Maple HAs and 37-mm Impact Area was transferred from the Army to MassDevelopment in 1996. LUCs were implemented to ensure that public education to property owners, residents, as well as any construction and/or utility contractors conducting ground intrusive activities on the property was completed through distribution of education materials and development of a web-based visual and audio media. Another LUC details that a deed notice will be inserted by MassDevelopment into any Grant, Oak, and Maple HAs and 37-mm Impact Area deeds in which conveys that there is no evidence of additional UXO present at the site, but that the possibility does remain that UXO could be discovered in the future. A site-specific annual LUC checklist, including physical on-site inspection (if deemed necessary) and interview components, was developed in 2011 for use during LUC verification activities. The completed checklist for the 2016 LUC inspection is presented in **Appendix D.** The remaining fence repairs were completed in August 2017.

7.2.1 Land-Use Control Interviews

An interview was conducted with Mr. Ron Ostrowski of MassDevelopment, Mr. Neil Angus of the Devens Enterprise Commission, and Chief Joseph LeBlanc of the Devens Fire Department regarding the following items:

- Any reports during the reporting year of any objects discovered on the site, including any findings of UXO;
- Verify the existence of an educational website for the public;

- Verify the inclusion of required utility bill inserts;
- Verify the posting of utility bill insert in a conspicuous location;
- Verify distribution of current soils management policy to construction;
- Verify that awareness training is being conducted (if construction activities occurred during the reporting year); and
- Verify that supplemental deed notice has been included in deeds conveying portion of the Grant HA.

Jim Moore and Cathy O'Connor were also contacted regarding site utilities.

Interview notes are presented in **Appendix D**. In summary, there were no objects discovered on the site during 2016, including any findings of UXO. Proper signage remains in-place and all contractors are required to attend pre-construction meetings where UXO awareness information is presented. Copies of the Soils Management Plan and UXO information are available on the Devens Enterprise Commission website, www.devensec.com. The property was vacant for the 2016 reporting year; therefore, all information concerning utilities and deed notices was not applicable.

Mr. Ostrowski noted that MassDevelopment sold land along Grant Road to a developer, Mr. Dan Gainesboro. Mr. Gainesboro confirmed that the deed notice was included in the transaction paperwork.

7.2.2 Land-Use Control On Site Inspection

LUCs were verified during the Impact Area property site visit performed by the KGS team. A LUC inspection was performed to identify the following:

- Land-use conditions (fencing, signage, and vegetation);
- Any areas of UXO concern, performed by sweeping 10% of the site with a metal detector; and
- Any evidence of site use changes.

A visual inspection and UXO screening was conducted by KGS in 2016. The fence was inspected for damage and a metal detector was used to sweep the ground. A fallen tree was present on a section of the fence, resulting in approximately 30 feet of damaged fence. No other damage to the fence was noted. Steep areas and high brush within the center of the fenced area were avoided during the evaluation for UXO. The other areas were searched using a sweeping back and forth motion with the metal detector. Suspect points that were identified by the metal detector in 2013 and marked with orange flagging remain in place. At the time of the 2016 inspection, no exposed surface soils appeared to contain UXO. Overall, the findings of the site inspection revealed no abnormalities within the fenced 37-mm impact area. A new lock was installed on the main gate.

In April 2017, KGS removed fallen trees/branches from the fence and tightened up affected sections of the fence. The remaining fence repairs were completed in August 2017.

7.3 Conclusions

The RAO for the HAs and 37-mm Impact Area is to prevent direct contact with UXO that may remain in the soils at the site. The selected Remedial Action included LUCs in order to provide overall protectiveness of public health and welfare or the environment. During the 2016 review

period, the former Grant, Oak and Maple Housing Areas, and the 37-mm Impact Area were subject to annual LUC interviews, on-site inspections, as well as other affirmative measures and prohibitive directives (e.g., distribution of educational materials, providing awareness courses for site workers and residents, implementing deed notices, and maintaining signage). An additional LUC provision states that upon future transfer of the property from MassDevelopment, a deed notice will be provided to the new owners detailing the property's history. This notice will convey additional information on UXO investigations and removal actions conducted at HAs and 37-mm Impact Area, and include the conclusion of the ROD that the property with LUCs in place is suitable for the proposed future use and that there is no evidence of additional UXO present at the site, but that the possibility does remain that UXO could be discovered in the future.

The Grant Housing and 37-mm Impact Area LUCIP was issued in May 2011 and the draft final LUCIP Addendum for the Oak and Maple Housing Areas is under review by EPA and MassDEP. Although implementation of the LUCs required per the 2014 Explanation of Significant Differences for the former Oak and Maple Housing Areas has yet to be memorialized in a final LUCIP, the specific actions undertaken by Army to ensure protectiveness of human health and the environment in the short-term are described herein.

The site-specific annual LUC checklist, including physical on-site inspection and interview components, was utilized during this reporting year and interviews with knowledgeable personnel confirmed the overall effectiveness and compliance with the established LUCs. Results of the annual compliance monitoring indicate that no deviations or deficiencies to the LUCs were evident and corrective action(s) were not necessary.

Compliance with the LUCs was verified through the physical on-site inspection and interviews. Specifically, the following was verified:

- No deeds were conveyed.
- The electric utility distributes education inserts to new residents **(Appendix D)**.
- Education information is displayed on a community website.
- No work permits or zoning permits were found confirming intrusive activity did not occur at the site and the land use has not changed.
- A fence and signage were maintained to restrict public access.
- There was no evidence of site use change during the inspection.

The LUCs have been effective in preventing direct contact with UXO/MEC, which may remain in soils.

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8.0 HYDRASLEEVE SAMPLING

During the spring 2016 sampling events, HydraSleeve™ technology was utilized along with low stress/low flow sampling methods. This technology was included in the 2015 LTMMP with a recommendation to substitute low flow sampling techniques with HydraSleeve™ technology. The HydraSleeve™ technique would be validated through confirmatory sampling involving the collection of analytical samples by both means and comparing the results using relative percent difference (RPD) calculations. Previous studies have indicated that HydraSleeve™ sampling is a suitable substitute for low-flow sampling (Parsons, 2005; Fernandes and Roberts, 2001; MWH, 2009; MWH, 2010; NDCEE, 2012).

Spring sampling included the use of HydraSleeve™ technology at locations AOC 32 and AOC 57. HydraSleeve™ samplers were installed at selected locations after water level measurements were collected. HydraSleeves™ were installed per manufacturer's specifications and instructions. Each well was allowed to equilibrate prior to the HydraSleeve™ being removed. Since two samples (HydraSleeve™ and low flow) were collected; relative percent differences (RPD) were calculated to compare the results. RPD between "duplicate" results should be less than 30%. **Table 30** presents the comparison of HydraSleeve™ and low flow sample results for the spring 2016 VOC and metals analyses.

Analytical sample results for AOC 32 well 32M-01-17XBR showed variable results between the sampling techniques. The results for VOCs by the low flow technique were all non-detect (1.0 U µg/L) with trace levels reported for 1,2-DCB (1.1 µg/L) and 1,3-DCB (0.48 J µg/L) by the HydraSleeve™ technique. Dissolved manganese was non-detect by the low flow technique (3.0 U µg/L) but was detected at 46 µg/L by the HydraSleeve™ technique. RPDs could not be calculated.

Analytical results for total metals in the AOC 57 wells were more stable. The results for total iron, manganese and arsenic for well 57M-95-03X were comparable with %RPDs less than 30% except for the total arsenic %RPD at 32.4%. The %RPDs for total iron and manganese in well 57M-96-11X were less than 30%. However, there was wide variability at this location between the total arsenic results, which were 290 µg/L by low flow and 890 µg/L by HydraSleeve™ with a %RPD of 102%.

Overall, due to the large discrepancies between results (at the Main Post AOCs and other sites at Devens) and the limited volume of sample obtained from the HydraSleeve™ sampler; it appears that the use of HydraSleeve™ technology is not a viable alternative to established low-flow sampling procedures.

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9.0 REFERENCES

American Petroleum Institute (API), 2011. Groundwater Arsenic Manual, Attenuation of Naturally-Occurring Arsenic at Petroleum Impacted Sites.

Deed, 2006. Quitclaim Deed, Parcels A2A, A4, and A8, Between Defense Base Closure and Realignment Act of 1990, the United States of America, acting by and through the Department of the Army and Massachusetts Development Finance Agency. BK 38514. pg. 121. March.

Deed, 2007. Quitclaim Deed, Parcel A.15, Between United States of America, acting by and through the Department of the Army and Massachusetts Development Finance Agency. BK 50024. pg. 85. July.

Department of Defense, 2013. *Quality Systems Manual for Environmental Laboratories, Version 4.2*, Prepared by Environmental Data Quality Workgroup. July.

Easement Agreement, 2001. Between Army and MassDevelopment for Tract No. 400E. June.

Haley & Aldrich, Inc., 2017. *Report on 2015 Devens Annual Report and Remedial Strategy Evaluation AOC 43J, Devens*. November.

Harding Environmental, Science & Engineering, 2001. *Record of Decision, Area of Contamination 57, Devens Reserve Forces Training Area, Devens, Massachusetts*. September.

Harding Lawson Associates (HLA), 1999a. *Record of Decision, Area of Contamination 69W, Devens, Massachusetts*. June.

HLA, 1999b. *Record of Decision, Devens Consolidation Landfill, Devens, Massachusetts*. July.

HLA, 2000a. *First Five-Year Review Report for Devens Reserve Forces Training Area, Devens, Massachusetts*. September.

HLA, 2000b. *Final Remediation Investigation Report, Area of Contamination (AOC) 57, Devens, Massachusetts.*

HydroGeoLogic, Inc. (HGL), 2008. *Long-Term Monitoring Plan, Former Fort Devens Army Installation, Devens, Massachusetts*. October.

HGL, 2009. *AOCs 32 and 43A Persulfate Injection Letter Report*. June.

HGL, 2010. *2010 Five-Year Review Report, Former Fort Devens Army Installation, Devens, Massachusetts*. September.

HGL, 2012. *Draft Final Munitions and Explosives of Concern Remedial Investigation Report, Former Oak and Maple Housing Areas Munitions Response Site.*

Horne Environmental Services, Inc., 2001. *Record of Decision for the Defense Reutilization and Marketing Office Yard (AOC 32) and Petroleum, Oil, and Lubricants Storage Area (AOC 43A), Devens, Massachusetts*. February.

Human Factors Application, 1996. *Final Ordnance, Ammunition, and Explosive Removal Action Report.*

H&S Environmental, Inc., 2015. *Five Year Review for Former Fort Devens BRAC Legacy Sites.* September.

KGS, 2016a. *Quality Assurance Project Plan – Annual Long Term Monitoring and Maintenance Program.* June.

KGS, 2016b. *2015 Annual Report, Long-Term Monitoring, Former Fort Devens Army Installation, BRAC Legacy Sites, Devens, Massachusetts*. Prepared for the U.S. Army Corps of Engineers New England District. November.

KGS, 2017. *Draft Final 2015 Five Year Addendum, Devens Consolidated Landfill Contributor Sites AOC 9, 40, and SA 13.* October.

Nobis Engineering, Inc., 2005. *2005 Five-Year Review Report, Former Fort Devens, Devens, Massachusetts*. September.

Ordnance & Explosives Remediation, Inc., 2006. *Site Specific Final Report Digital Geophysical Mapping (DGM) & Unexploded Ordnance (UXO) Removal, Grant Housing Area, Former Ft. Devens, Harvard, Worcester, Massachusetts*. March.

Shaw Environmental, Inc., 2003. *The Remedial Action Closure Report*. September.

Sovereign and HGL, 2012. *Generic Quality Assurance Project Plan, Annual Long-Term Monitoring Program, Former Fort Devens Army Installation, Devens, Massachusetts and Sudbury Annex, Sudbury, Massachusetts.* October.

Sovereign/HGL, 2013. *Final Focused Feasibility Study Addendum Former Oak and Maple Housing Areas*. March.

Sovereign/HGL, 2014. *Final Explanation of Significant Differences for Grant Housing Area and 37-mm Impact Area.* September.

Sovereign/HGL. 2015. *Long Term Monitoring and Maintenance Plan for Former Fort Devens and Sudbury Annex.* Final. March.

Stone and Webster Environmental Technology & Services, 2000a. *Final Demonstration of Remedial Actions Operating Properly and Successfully, AOCs 32 and 43A, DRMO and POL, Devens, Massachusetts.* Prepared for the U.S. Army Corps of Engineers, New England District, Concord, Massachusetts. February.

Stone and Webster Environmental Technology & Services, 2000b. *Monitored Natural Attenuation Assessment Report, Volume I of II, AOC 32 DRMO, Devens, Massachusetts.* Prepared for the U.S. Army Corps of Engineers, New England District, Concord, Massachusetts. December.

U.S. Army BRAC Environmental Division, Army Garrison Fort Devens, 2011. *Land-use Control Implementation Plan, Grant Housing Area and 37-mm Impact Area, Former Fort Devens Army Installation, Devens, Massachusetts*. May.

U.S. Army, 2007. Real Property Management Plan for Devens Reserve Forces Training Area; Addendum, September.

U.S. Army Corps of Engineers (USACE), 1995. *Archive Search Report, Fort Devens, Ayer, Massachusetts*. May.

USACE, 2011. *Final Operating Properly and Successfully Demonstration for Area of Contamination 57*, May.

U.S. Environmental Protection Agency (USEPA), 1996. *Record of Decision, Areas of Contamination 43G and 43J, Devens, Massachusetts*. October.

USEPA, Region 1, 1989, 1996a, 1996b, 1996c, and 2004. *USEPA Region 1, EPA – New England Data Validation Functional Guidelines for Evaluating Environmental Analyses.*

USEPA, 2014. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, through update V*. Office of Solid Waste and Emergency Response. July.

USEPA, 2006. *National Recommended Water Quality Criteria*. Office of Water, Office of Science and Technology.

USEPA Region 1, 2010a. *Calibration of Field Instruments, standard operating procedures, (temperature, pH, dissolved oxygen, conductivity/specific conductance, oxidation/reduction potential [ORP], and turbidity*. North Chelmsford, MA. January.

USEPA, Region 1, 2010b. *Low Stress (low-flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells* (EQASOP-GW 001). January.

Weston Solutions, Inc. (Weston), 2006. *Final Polychlorinated Biphenyls Time Critical Removal Action Closure Report, Former Grant Housing Area Devens, Massachusetts*.

Weston, 2008a. *Focused Feasibility Study, Grant Housing Area and 37-mm Impact Area, Former Fort Devens Army Installation, Devens, Massachusetts*. April.

Weston, 2008b. *Final Preliminary Assessment/Supplemental Site Inspection Comprehensive Report, Study Area – Grant, Locust and Cavite Housing Areas, Former Fort Devens Army Installation, Devens, Massachusetts*. October.

Weston, 2009. *Record of Decision for Grant Housing Area and 37-mm Impact Area Former Fort Devens Army Installation, Devens, Massachusetts*. September.

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FIGURES

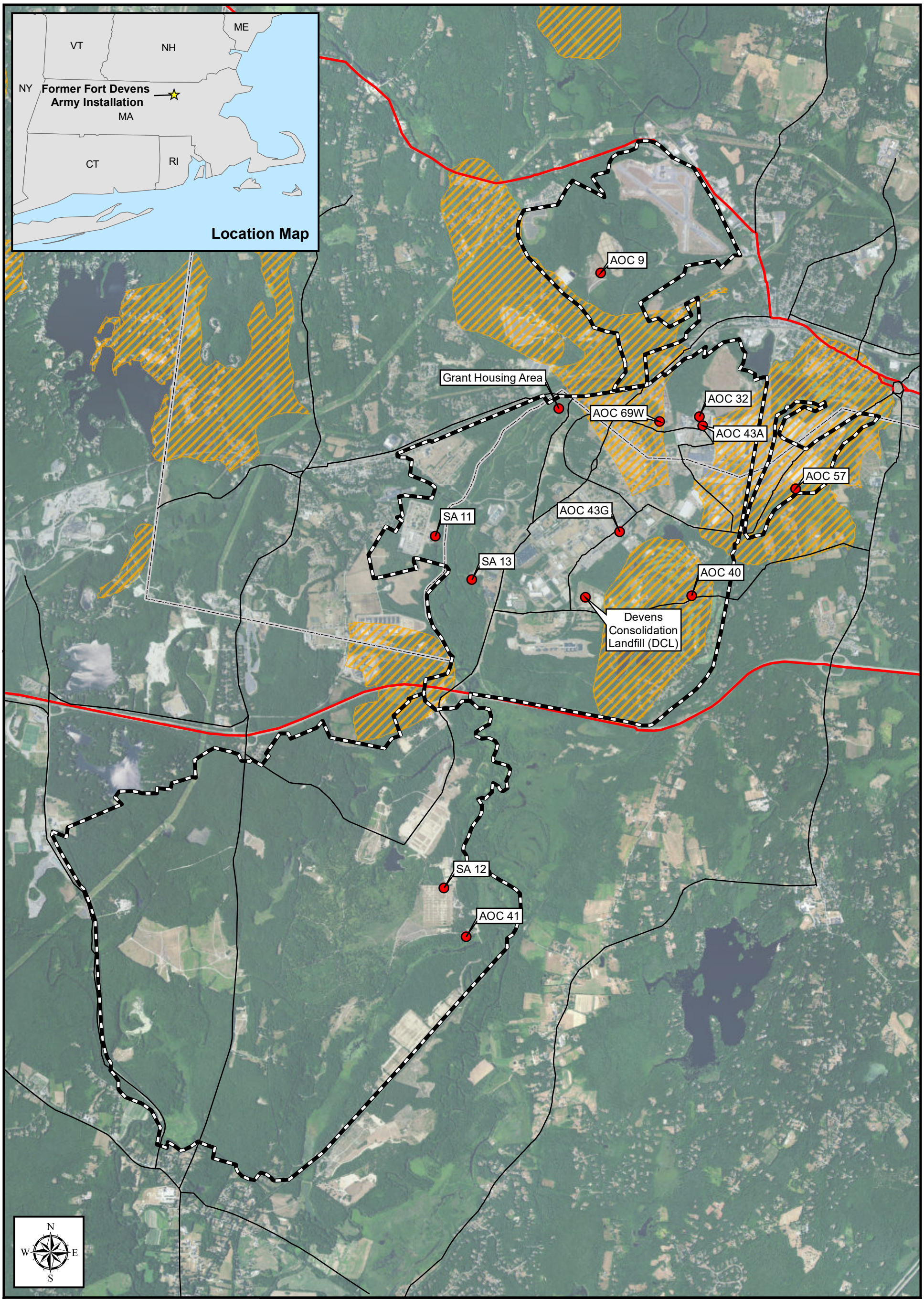


Figure 1
Site Location
Former Fort Devens
Army Installation

References: LTMMP (HGL/Sovereign 2015)
Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Area of Contamination (AOC)
- DEP Approved Wellhead Protection Areas (Zone II)
- Highway
- Major Road
- County Line
- Former Fort Devens Boundary

2016 Main Post Annual Report
Former Fort Devens Army Installation

Former Fort Devens Army Installation and Fort Devens Reserve Forces Training Area, Devens MA

KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100, Marlborough, MA 01752

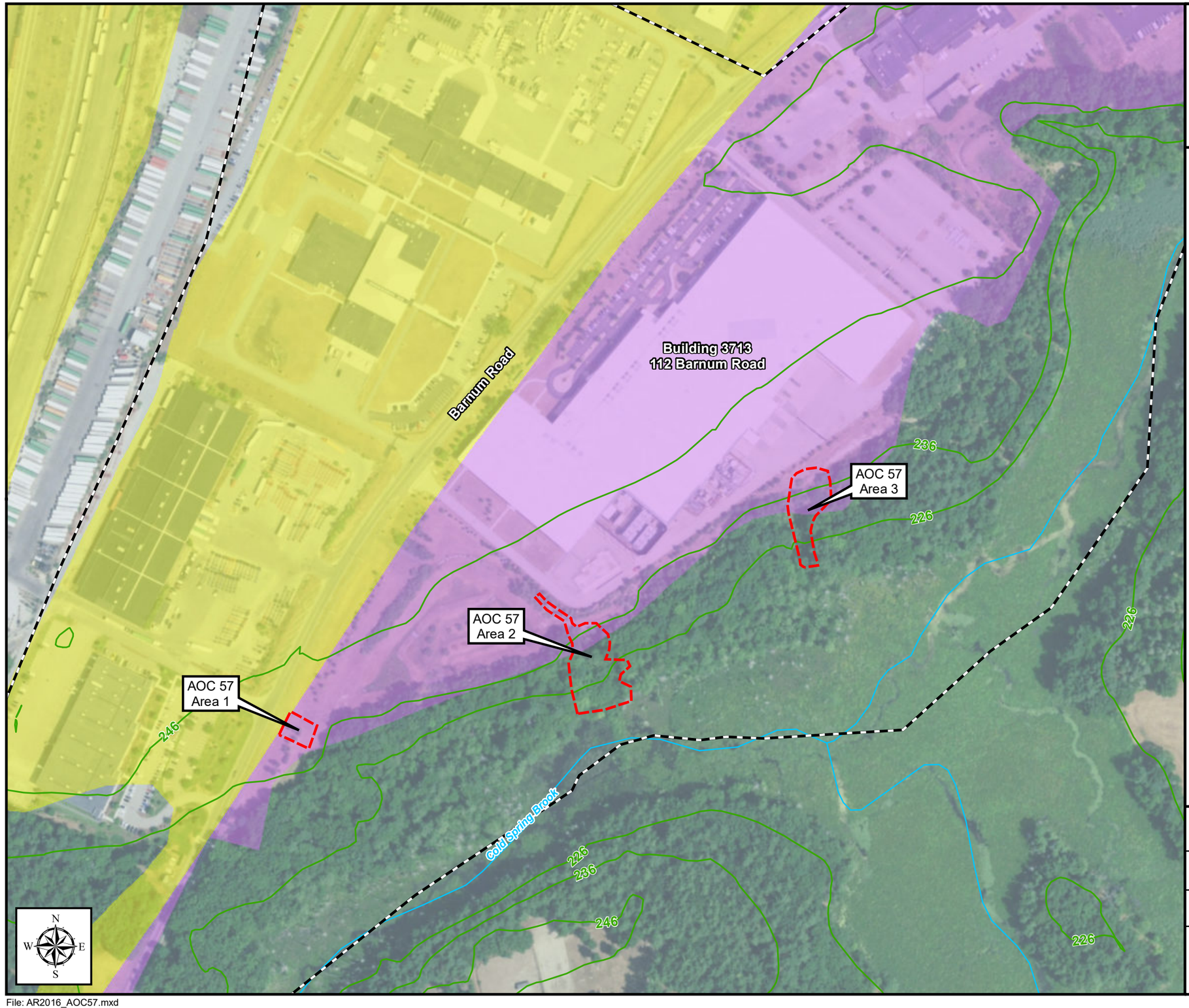
0 1,750 3,500
Feet

Date: 11/30/2017

Figure 1

File: AR2016_FFD.mxd

Figure 2
Site Layout
Area of Contamination 57
Area 1, 2 & 3



Legend

- Former Fort Devens Boundary
- Area of Contamination (AOC)
- Stream
- Topographic Contour (Ft AMSL)

Non Potential Drinking Water Source Area

- High Yield
- Medium Yield

Note:
AOC 57 lies within the MassDEP Zone II Wellhead Protection Area.

References:
Harding ESE

Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

2016 Main Post Annual Report
AOC 57 - Area 1, 2 & 3

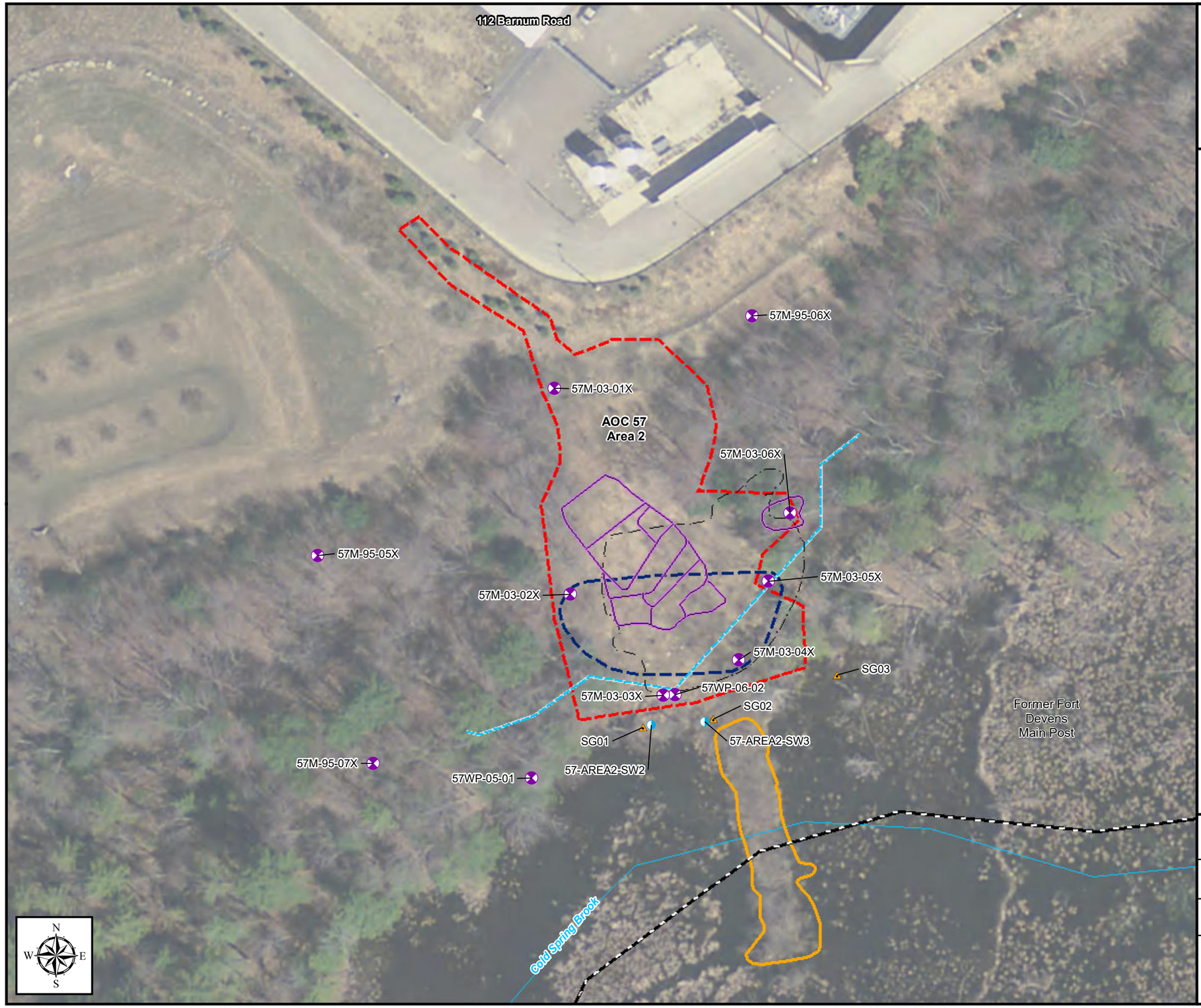
Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100, Marlborough, MA 01752

0 125 250 Feet	Date: 11/30/2017	Figure 2	KGS

File: AR2016_AOC57.mxd

Figure 3
Site Layout
Area of Contamination 57 - Area 2



Legend

- LTM Well - Gauge Only
- Staff Gauge
- Former Surface Water Sample Location
- 57M-03-06X — Well/Piezometer/Sample Location Identification
- Final Excavation Limit (2003)
- Conti Excavation Limit (2002)
- Former Fort Devens Boundary
- Flagged Wetland Limits
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on Fall 2003 to Spring 2011 analytical data)
- Containment Dam
- Area of Contamination (AOC)
- Stream

Note:
AOC 57 lies within the MassDEP Zone II Wellhead Protection Area.

References:
Sovereign/HGL LTMMP 2015

Aerial Sources: 2013, USGS, MassGIS

2016 Main Post Annual Report
AOC 57 - Area 2

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100, Marlborough, MA 01752

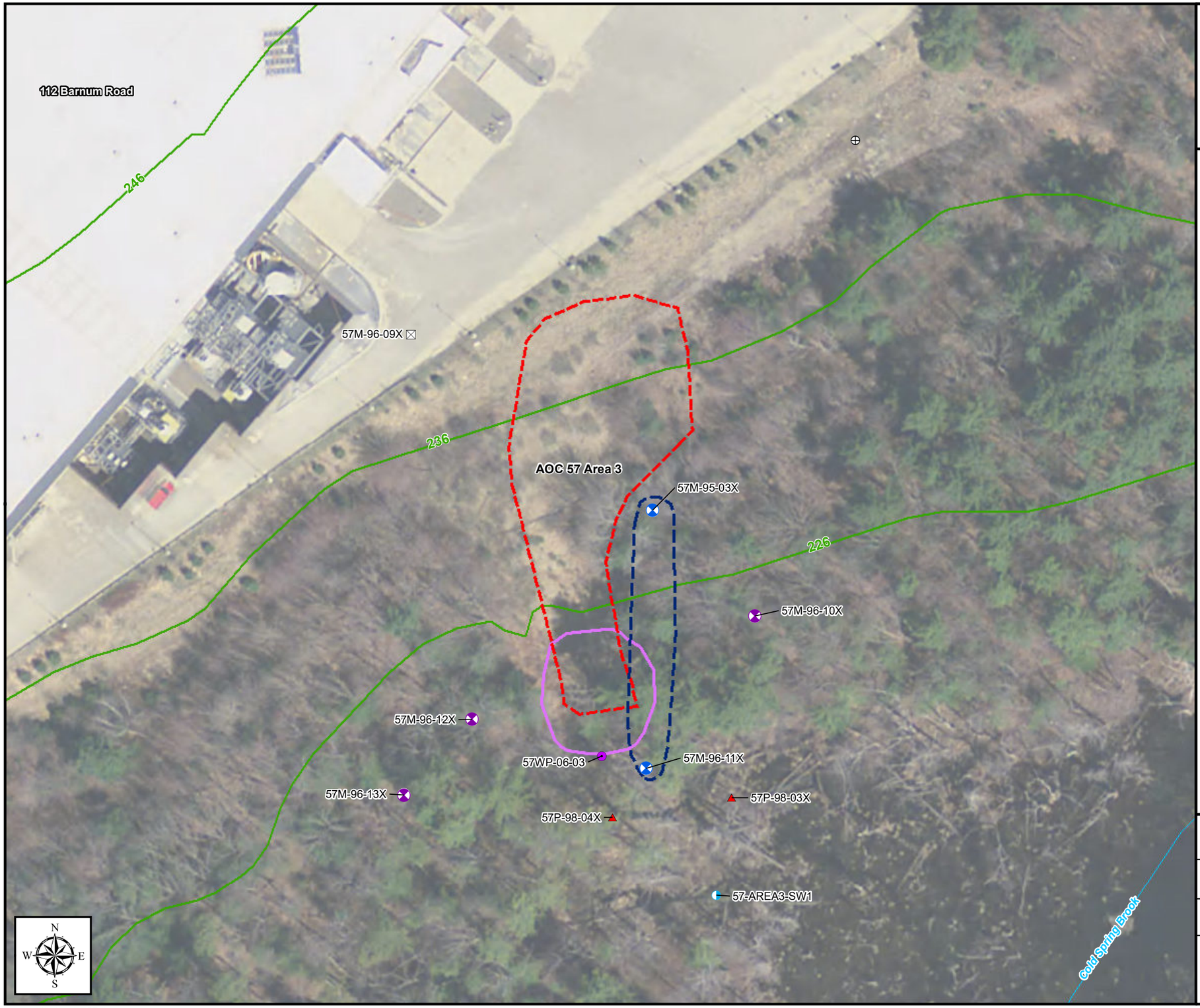
0 30 60
Feet

Date: 11/30/2017

Figure 3

File: AR2016_AOC57-2.mxd

Figure 4
Site Layout
Area of Contamination 57 - Area 3



Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Well Point - Gauge Only
- LTM Piezometer
- Former Surface Water Sample Location
- Monitoring Well - Abandoned (2012)
- Monitoring Well - Destroyed
- 57M-95-03X — Well/Piezometer/Sample Location Identification
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on Fall 2003 to Spring 2011 analytical data)
- Area of Contamination (AOC)
- Alternate III-2a Estimated Soil Excavation Area
- Stream
- Topographic Contour (Ft AMSL)

Notes:
AOC 57 lies within the MassDEP Zone II Wellhead Protection Area.
Well 57M-96-09X buried by construction.
LTM = Long-term monitoring

References:
LTMMP (HGL.Sovereign, 2015)

Aerial Sources: 2013, USGS, MassGIS

2016 Main Post Annual Report
AOC 57 - Area 3

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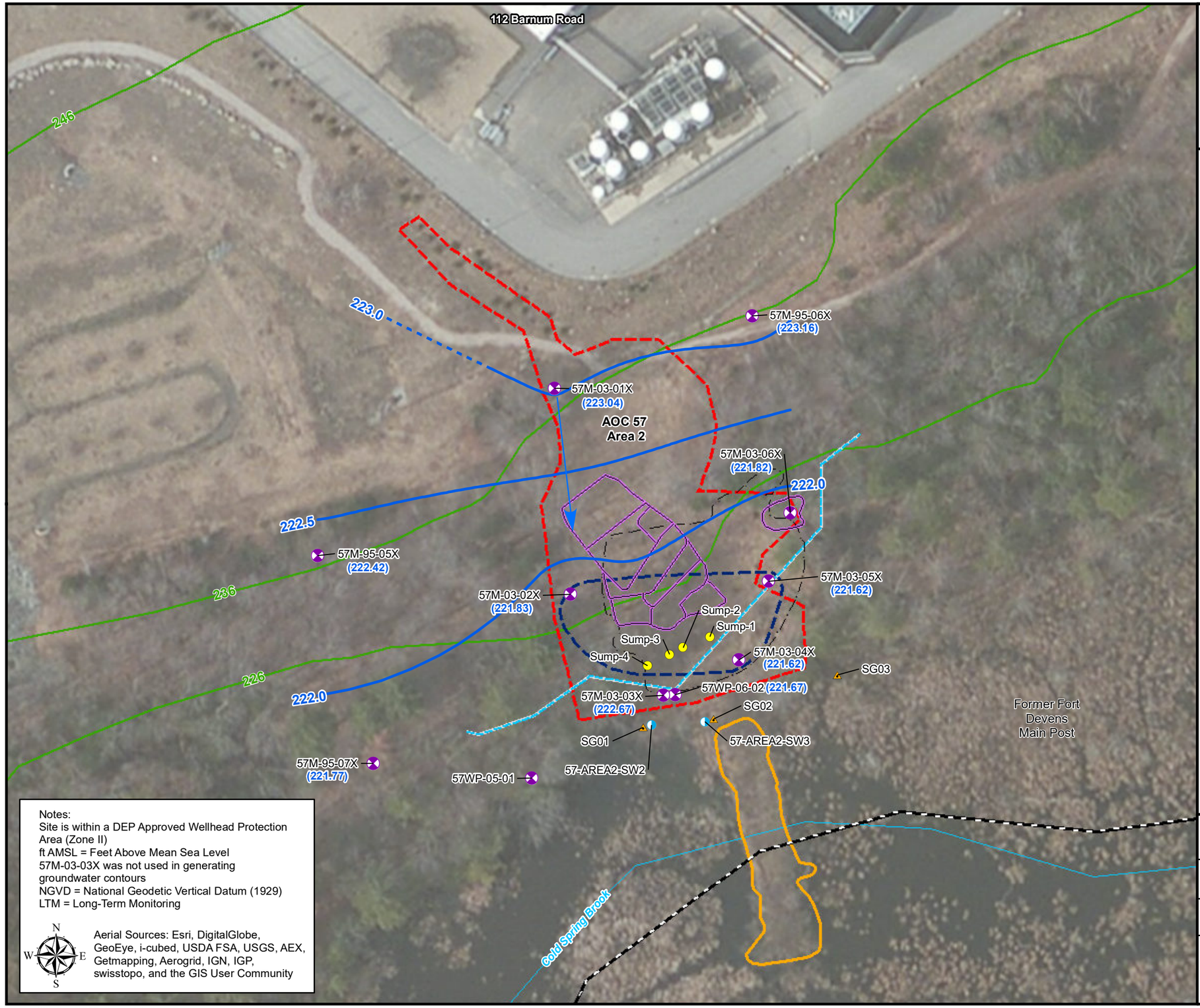
0 30 60
Feet

Date: 11/30/2017

Figure 4

File: AR2016_AOC57-3.mxd

Figure 5
Interpretive Water Table Elevation
Area of Contamination 57 - Area 2
May 2016



Notes:
Site is within a DEP Approved Wellhead Protection Area (Zone II)
ft AMSL = Feet Above Mean Sea Level
57M-03-03X was not used in generating groundwater contours
NGVD = National Geodetic Vertical Datum (1929)
LTM = Long-Term Monitoring

N
W E
S

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- LTM Well - Gauge Only
- Staff Gauge
- Former Surface Water Sample Location
- Sump
- Groundwater Elevation Contour (ft NGVD) (Contour Interval = 0.5 ft)
- Inferred Groundwater Elevation Contour
- (221.62) Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- 57M-03-06X Well/Piezometer/Sump/Sample Location Identification
- Final Excavation Limit (2003)
- Conti Excavation Limit (2002)
- Former Fort Devens Boundary
- Flagged Wetland Limits
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on Fall 2003 to Spring 2011 analytical data)
- Containment Dam
- Area of Contamination (AOC)
- Stream
- Topographic Contour (Ft AMSL)

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AOC 57 - Area 2

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0 30 60
Feet

Date: 11/30/2017

Figure 5

KGS

File: AR2016_AOC57_2_May2016GWC.mxd

Notes:
Site is within a DEP Approved Wellhead Protection Area (Zone II)
Well 57M-96-09X buried by construction.
ft AMSL = Feet Above Mean Sea Level
NGVD = National Geodetic Vertical Datum (1929)
LTM = Long-Term Monitoring

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

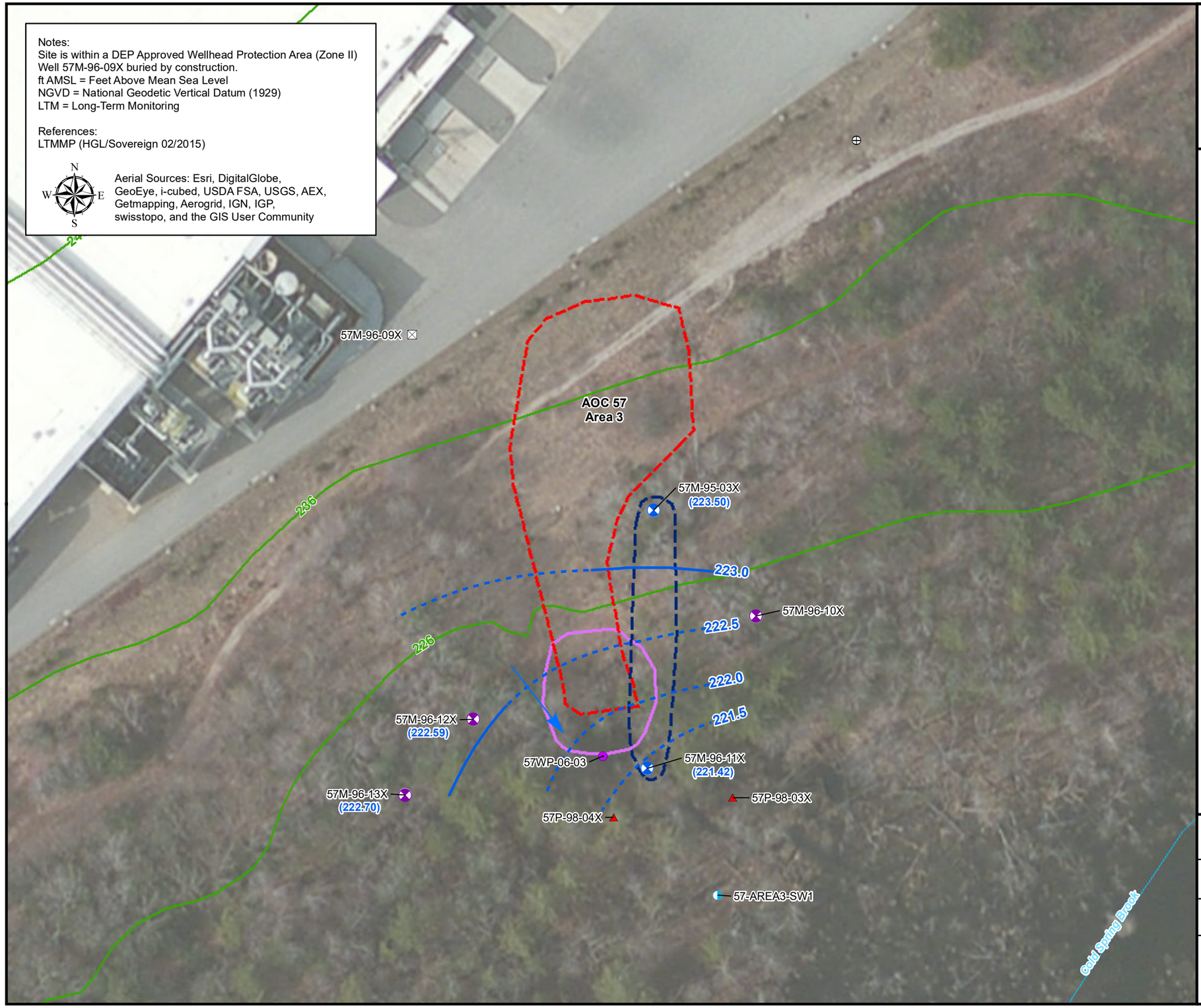

Figure 6
Interpretive Water Table Elevation
Area of Contamination 57 - Area 3
May 2016

Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Well Point - Gauge Only
- LTM Piezometer
- Former Surface Water Sample Location
- Monitoring Well - Abandoned (2012)
- Monitoring Well - Destroyed
- Groundwater Elevation Contour (ft NGVD) (Contour Interval = 0.5 ft)
- Inferred Groundwater Elevation Contour
- (222.59) Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- 57M-95-03X Well/Piezometer/Sample Location Identification
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on Fall 2003 to Spring 2011 analytical data)
- Area of Contamination (AOC)/ 1999 Excavation Area
- Alternate III-2a Estimated Soil Excavation Area (approximate location)
- Stream
- Topographic Contour (Ft AMSL)

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AOC 57 - Area 3

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0 30 60
Feet

Date: 11/30/2017

Figure 6

File: AR2016_AOC57_3_May2016GWC.mxd

Figure 7
Metal Concentrations in Groundwater and Surface Water
Area of Contamination 57 - Area 3
June 2016

Notes:

GW Cleanup Goal	
Metals	Result (µg/L)
Arsenic, Total	**10**
Arsenic, Dissolved	**10**

SW Benchmark	
Metals	Result (µg/L)
Iron, Total	**1,000**
Iron, Dissolved	**1,000**

Bold concentrations indicate detected parameter above Benchmark
Shaded and bold concentrations indicate detection above Clean Up Goal
µg/L = micrograms per liter
ft AMSL = feet above mean sea level
LTM = long term monitoring
AOC 57 lies within the MassDEP Zone II Wellhead Protection Area.

References:
LTMMP (HGL/Sovereign 02/2015)

N W E S

Aerial Sources: 2013, USGS, MassGIS

AOC 57
Area 3

57M-95-03X	June 2016
Metals	Result (µg/L)
Arsenic, Total	**31**
Arsenic, Dissolved	**25**

57M-96-11X	June 2016
Metals	Result (µg/L)
Arsenic, Total	**290**
Arsenic, Dissolved	**130**

57-AREA3-SW1	June 2016
Metals	Result (µg/L)
Iron, Total	**19,000**
Iron, Dissolved	**6,500**

57M-95-03X
57M-96-10X
57M-96-12X
57WP-06-03
57M-96-11X
57M-96-13X
57P-98-03X
57P-98-04X
57-AREA3-SW1
236
226
Gold Spring Brook

Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Well Point - Gauge Only
- LTM Piezometer
- Surface Water Sample Location
- 57M-95-03X — Well/Piezometer/Sample Location Identification
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on Fall 2003 to Spring 2011 analytical data)
- Area of Contamination (AOC)
- Alternate III-2a Estimated Soil Excavation Area
- Stream
- Topographic Contour (Ft AMSL)

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AOC 57 - Area 3

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0 30 60
Feet

Date: 12/18/2017

Figure 7

File: AR2016_AOC57_3_Metals_June2016.mxd

Figure 8
Site Layout
Area of Contamination 69W



Legend

- LTM Sample Well
- LTM Sample Well Point
- LTM Well - Gauge Only
- LTM Piezometer
- ZWM-01-26X — Well/Piezometer/Surface Water Elevation Location
- Parcel Boundary
- Surface Water Course
- Excavated Soils Management Area
- Topographic Contour (Ft AMSL)

Notes:
LTM = Long-term monitoring

References:
LTMMP (HGL.Sovereign, 2015)

Aerial Sources: 2013, USGS, MassGIS

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AOC 69W

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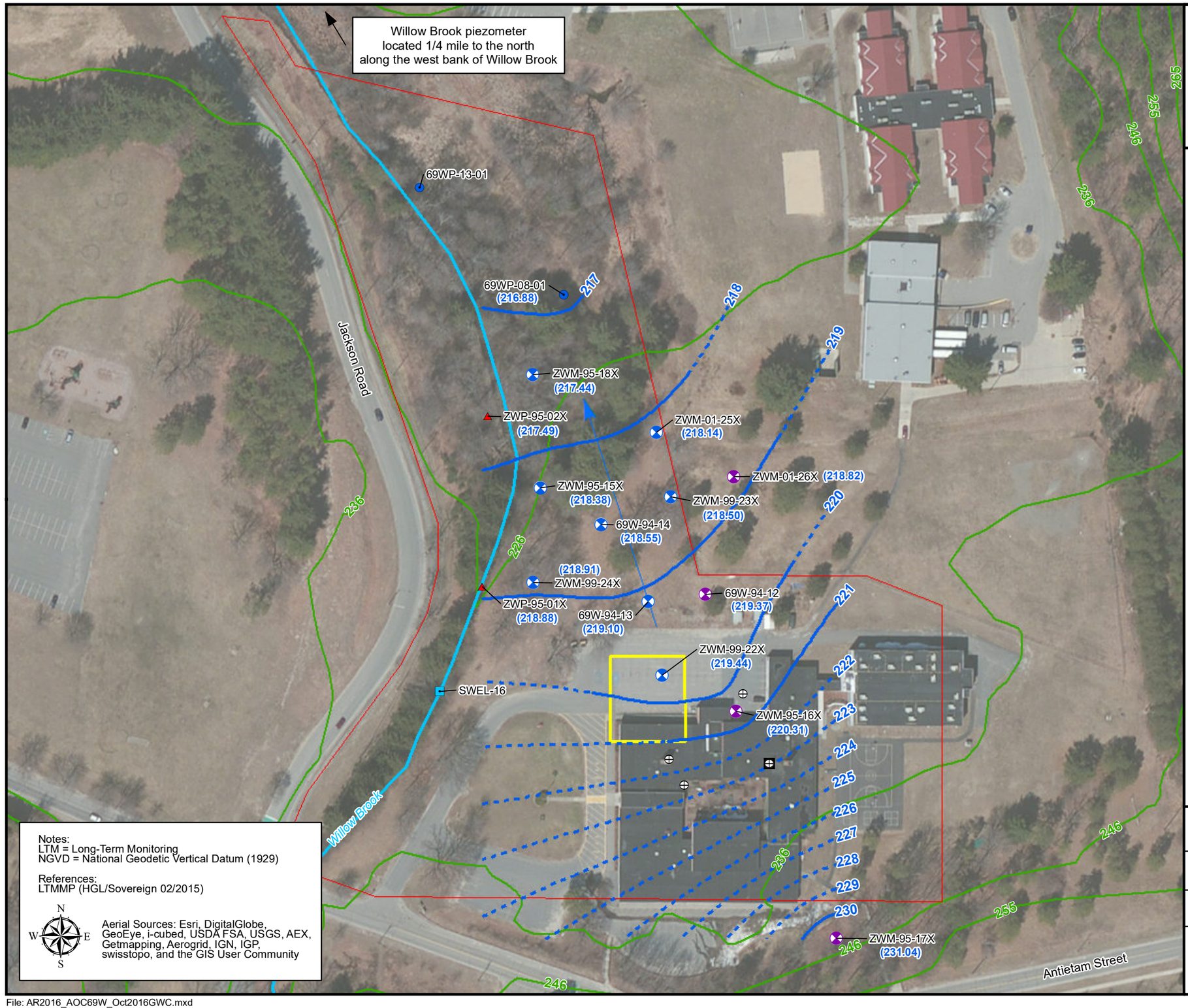
0 60 120
Feet

Date: 11/30/2017

Figure 8

File: AR2016_AOC69W.mxd

Figure 9
Interpretive Water Table Elevation
Area of Contamination 69W
October 2016



Notes:
LTM = Long-Term Monitoring
NGVD = National Geodetic Vertical Datum (1929)

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- LTM Sample Well
- LTM Sample Well Point
- LTM Well - Gauge Only
- LTM Piezometer
- Monitoring Well - Abandoned (2012)
- Monitoring Well - Presumed Destroyed
- Surface Water Elevation Location
- ZWM-01-26X — Well/Piezometer/Surface Water Elevation Location
- Groundwater Contour (ft NGVD) (Interval = 1 ft)
- Inferred Groundwater Elevation Contour
- 219.37 — Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- Parcel Boundary
- Surface Water Course
- Excavated Soils Management Area
- Topographic Contour (ft AMSL)

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0 60 120
Feet

Date: 11/30/2017

Figure 9

File: AR2016_AOC69W_Oct2016GWC.mxd

Figure 10
EPH Concentrations in Groundwater
Area of Contamination 69W
October 2016

Willow Brook piezometer located 1/4 mile to the north along the west bank of Willow Brook

69WP-13-01

69WP-08-01

ZWP-95-02X

ZWP-95-01X

ZWM-95-18X	October 2016
EPH	Result (µg/L)
C9-C18 Aliphatics	100 U
C11-C22 Aromatics	**240**

ZWM-95-18X

ZWM-95-15X	October 2016
EPH	Result (µg/L)
C9-C18 Aliphatics	220 J
C11-C22 Aromatics	100 J

ZWM-95-15X

ZWM-99-24X	October 2016
EPH	Result (µg/L)
C9-C18 Aliphatics	96 U
C11-C22 Aromatics	52 J

ZWM-99-24X

ZWM-99-22X	October 2016	October 2016 (DUP)
EPH	Result (µg/L)	
C9-C18 Aliphatics	100 U	100 U
C11-C22 Aromatics	**210**	**84**

ZWM-99-22X

ZWM-99-23X	October 2016
EPH	Result (µg/L)
C9-C18 Aliphatics	110 U
C11-C22 Aromatics	110

ZWM-99-23X

ZWM-01-25X

ZWM-01-26X

69W-94-13	October 2016
EPH	Result (µg/L)
C9-C18 Aliphatics	**1,100**
C11-C22 Aromatics	**410**

69W-94-13

69W-94-14

69W-94-12

ZWM-95-16X

ZWM-95-17X

Jackson Road

Willow Brook

Antietam Street

Building 215

226

235

236

246

255

265

N

W

E

S

Legend

- LTM Sample Well
- LTM Sample Well Point
- LTM Well - Gauge Only
- LTM Piezometer
- ZWM-01-26X — Well/Piezometer/Surface Water Elevation Location
- Parcel Boundary
- Surface Water Course
- Excavated Soils Management Area
- Topographic Contour (ft AMSL)

Notes:

Monitoring Criteria (µg/L)	
C9-C18 Aliphatics	**700**
C11-C22 Aromatics	**200**

U = Not Detected
Bold concentrations indicate detected parameter
Shaded and bold concentrations indicate detection above Monitoring Criteria
µg/L = micrograms per liter
EPH = Extractable Petroleum Hydrocarbon
LTM = Long-term monitoring

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: 2013, USGS, MassGIS

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0 60 120
Feet

Date: 12/15/2017

Figure 10

KGS

File: AR2016_AOC69W_EPH_Oct2016.mxd

Figure 11
Metal Concentrations in Groundwater
Area of Contamination 69W
October 2016



69WP-13-01	October 2016
Metals	Result (µg/L)
Arsenic	NA
Iron	NA
Manganese	**140**

ZWM-95-18X	October 2016
Metals	Result (µg/L)
Arsenic	3.0 U
Iron	50 U
Manganese	**12**

69WP-08-01	October 2016
Metals	Result (µg/L)
Arsenic	3.0 U
Iron	**7,100**
Manganese	**79**

ZWM-01-25X	October 2016
Metals	Result (µg/L)
Arsenic	3.0 U
Iron	50 U
Manganese	**78**

ZWM-95-15X	October 2016
Metals	Result (µg/L)
Arsenic	**3.7**
Iron	**180**
Manganese	**17**

ZWM-99-23X	October 2016
Metals	Result (µg/L)
Arsenic	**7.7**
Iron	**1,500**
Manganese	**590**

69W-94-14	October 2016
Metals	Result (µg/L)
Arsenic	3.0 U
Iron	**87**
Manganese	**27**

69W-94-13	October 2016
Metals	Result (µg/L)
Arsenic	**76**
Iron	**11,000**
Manganese	**2,600**

ZWM-99-24X	October 2016
Metals	Result (µg/L)
Arsenic	3.0 U
Iron	**41 J**
Manganese	**2.9 J**

ZWM-99-22X	October 2016	October 2016 (DUP)
Metals	Result (µg/L)	
Arsenic	**150**	**140**
Iron	**18,000**	**18,000**
Manganese	**960**	**980**

Legend

- LTM Sample Well
- LTM Sample Well Point
- LTM Well - Gauge Only
- LTM Piezometer
- ZWM-01-26X — Well/Piezometer/Surface Water Elevation Location
- Parcel Boundary
- Surface Water Course
- Excavated Soils Management Area
- Topographic Contour (ft AMSL)

Notes:

Clean Up Goal or Background (µg/L)	
Arsenic	**10**
Iron	**9,100**
Manganese	**375**

U = Not Detected
Bold concentrations indicate detected parameter
Italics and bold concentrations indicate detection above Background
Shaded and bold concentrations indicate detection above Clean Up Goal or Background
µg/L = micrograms per liter
LTM = Long-term monitoring

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: 2013, USGS, MassGIS

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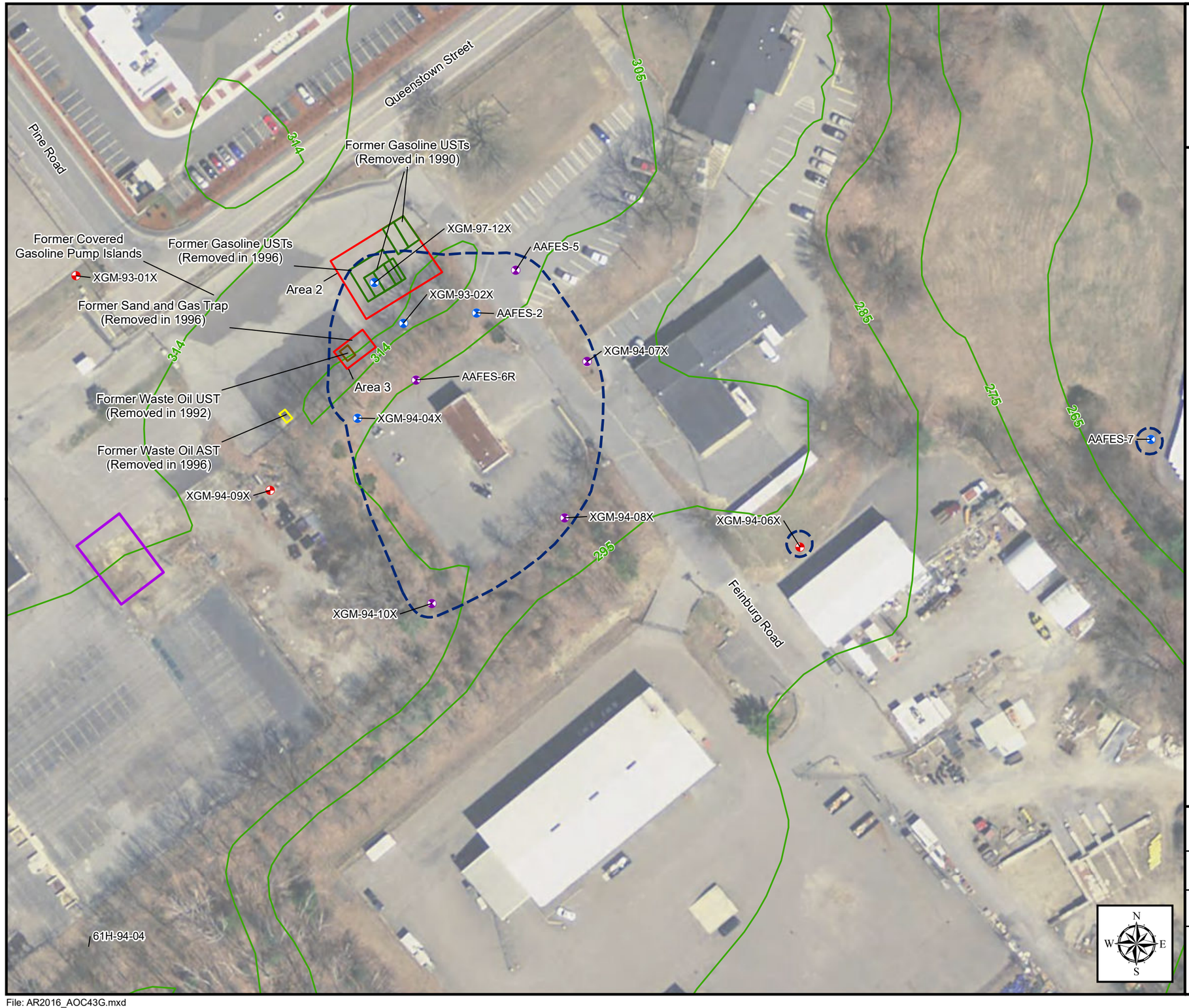
0 60 120
Feet

Date: 11/30/2017

Figure 11

File: AR2016_AOC69W_Metals_Oct2016.mxd

Figure 12
Site Layout
Area of Contamination 43G



Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Monitoring Well
- XGP-94-04X — Well/Piezometer Identification
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on 1999 to 2011 analytical data)
- Area 1
- Former Gasoline UST(s)
- Former Waste Oil UST
- Former Waste Oil AST
- Former UST Area
- Topographic Contour (Ft AMSL)

Notes:
AST = Above ground storage tank
UST = Underground storage Tank
LTM = Long-term monitoring

References:
TMMP (HGL/Sovereign, 2015)

Aerial Sources: 2013, USGS, MassGIS

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AOC 43G

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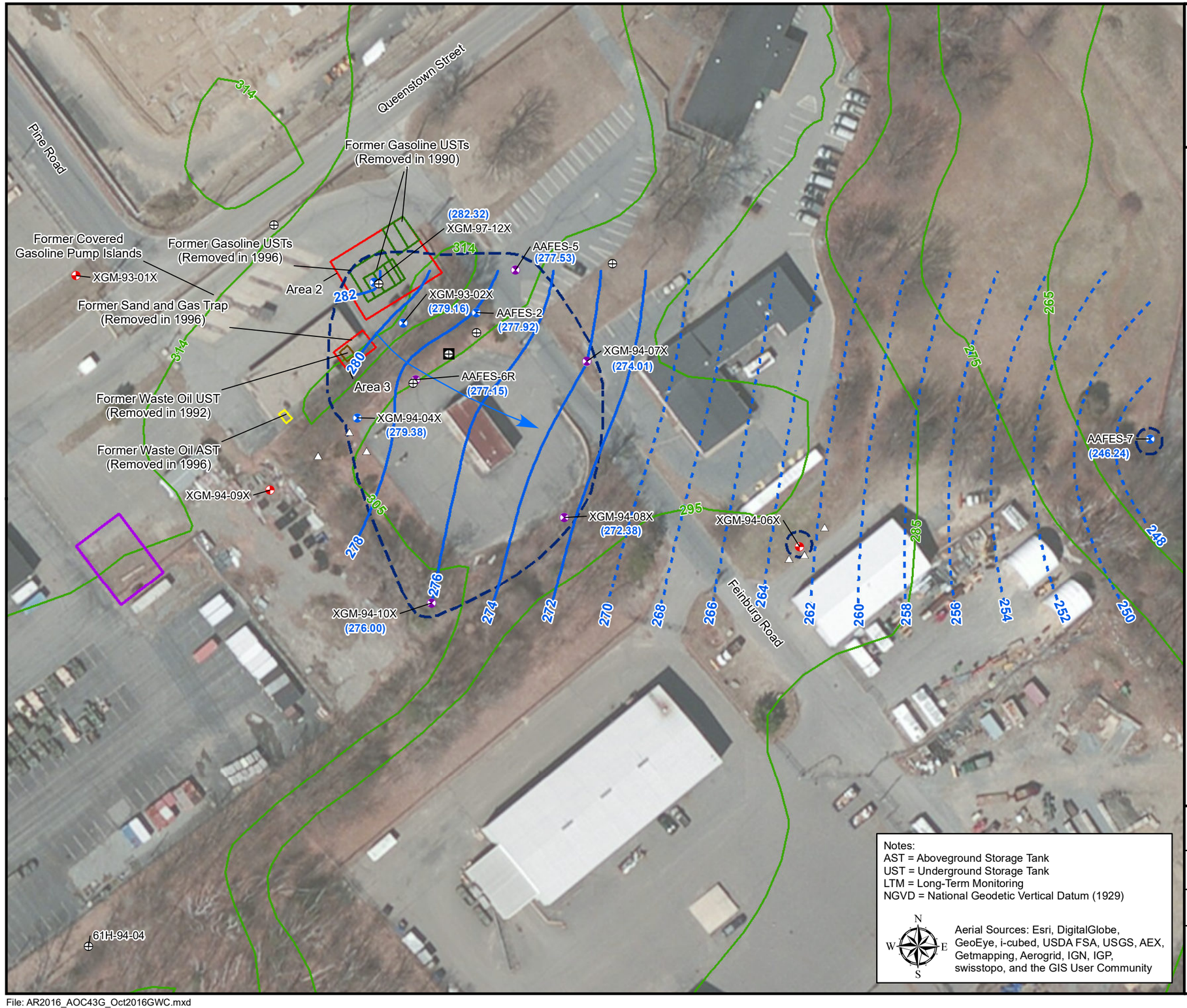
0 40 80
Feet

Date: 12/01/2017

Figure 12

File: AR2016_AOC43G.mxd

Figure 13
Interpretive Water Table Elevation
Area of Contamination 43G
October 2016



Notes:
AST = Aboveground Storage Tank
UST = Underground Storage Tank
LTM = Long-Term Monitoring
NGVD = National Geodetic Vertical Datum (1929)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Piezometer - Abandoned
- Monitoring Well
- Monitoring Well - Abandoned
- Monitoring Well - Presumed Destroyed
- XGP-94-04X — Well/Piezometer Identification
- Groundwater Flow Direction
- (274.01) — Groundwater Elevation (ft NGVD)
- Groundwater Elevation Contour (ft NGVD) (Contour Interval = 2 ft)
- Inferred Groundwater Elevation Contour
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on 1999 to 2011 analytical data)
- Area 1
- Former Gasoline UST(s)
- Former Waste Oil UST
- Former Waste Oil AST
- Former UST Area
- Topographic Contour (Ft AMSL)

References:
LTMMP (HGL/Sovereign 02/2015)

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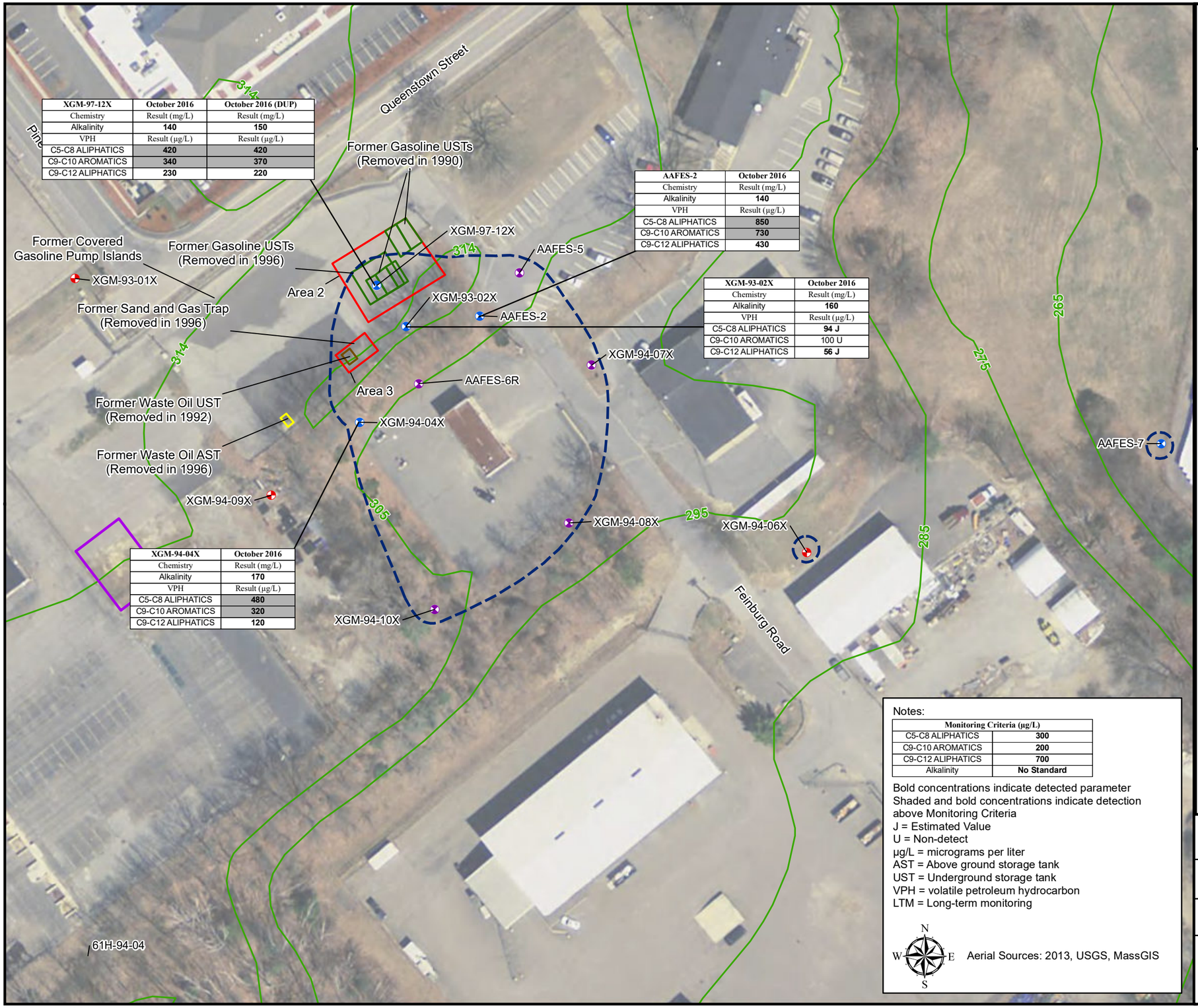
0 40 80
Feet

Date: 12/15/2017

Figure 13

File: AR2016_AOC43G_Oct2016GWC.mxd

Figure 14
VPH and Alkalinity Exceedances
Area of Contamination 43G
October 2016



XGM-97-12X	October 2016	October 2016 (DUP)
Chemistry	Result (mg/L)	Result (mg/L)
Alkalinity	**140**	**150**
VPH	Result (µg/L)	Result (µg/L)
C5-C8 ALIPHATICS	**420**	**420**
C9-C10 AROMATICS	**340**	**370**
C9-C12 ALIPHATICS	**230**	**220**

AAFES-2	October 2016
Chemistry	Result (mg/L)
Alkalinity	**140**
VPH	Result (µg/L)
C5-C8 ALIPHATICS	**850**
C9-C10 AROMATICS	**730**
C9-C12 ALIPHATICS	**430**

XGM-93-02X	October 2016
Chemistry	Result (mg/L)
Alkalinity	**160**
VPH	Result (µg/L)
C5-C8 ALIPHATICS	**94 J**
C9-C10 AROMATICS	100 U
C9-C12 ALIPHATICS	**56 J**

XGM-94-04X	October 2016
Chemistry	Result (mg/L)
Alkalinity	**170**
VPH	Result (µg/L)
C5-C8 ALIPHATICS	**480**
C9-C10 AROMATICS	**320**
C9-C12 ALIPHATICS	**120**

Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Monitoring Well
- XGP-94-04X Well/Piezometer Identification
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on 1999 to 2011 analytical data)
- Area 1
- Former Gasoline UST(s)
- Former Waste Oil UST
- Former Waste Oil AST
- Former UST Area
- Topographic Contour (ft AMSL)

Notes:

Monitoring Criteria (µg/L)	
C5-C8 ALIPHATICS	**300**
C9-C10 AROMATICS	**200**
C9-C12 ALIPHATICS	**700**
Alkalinity	**No Standard**

Bold concentrations indicate detected parameter
Shaded and bold concentrations indicate detection above Monitoring Criteria
J = Estimated Value
U = Non-detect
µg/L = micrograms per liter
AST = Above ground storage tank
UST = Underground storage tank
VPH = volatile petroleum hydrocarbon
LTM = Long-term monitoring

N W E S

Aerial Sources: 2013, USGS, MassGIS

References:
LTMMP (HGL/Sovereign 02/2015)

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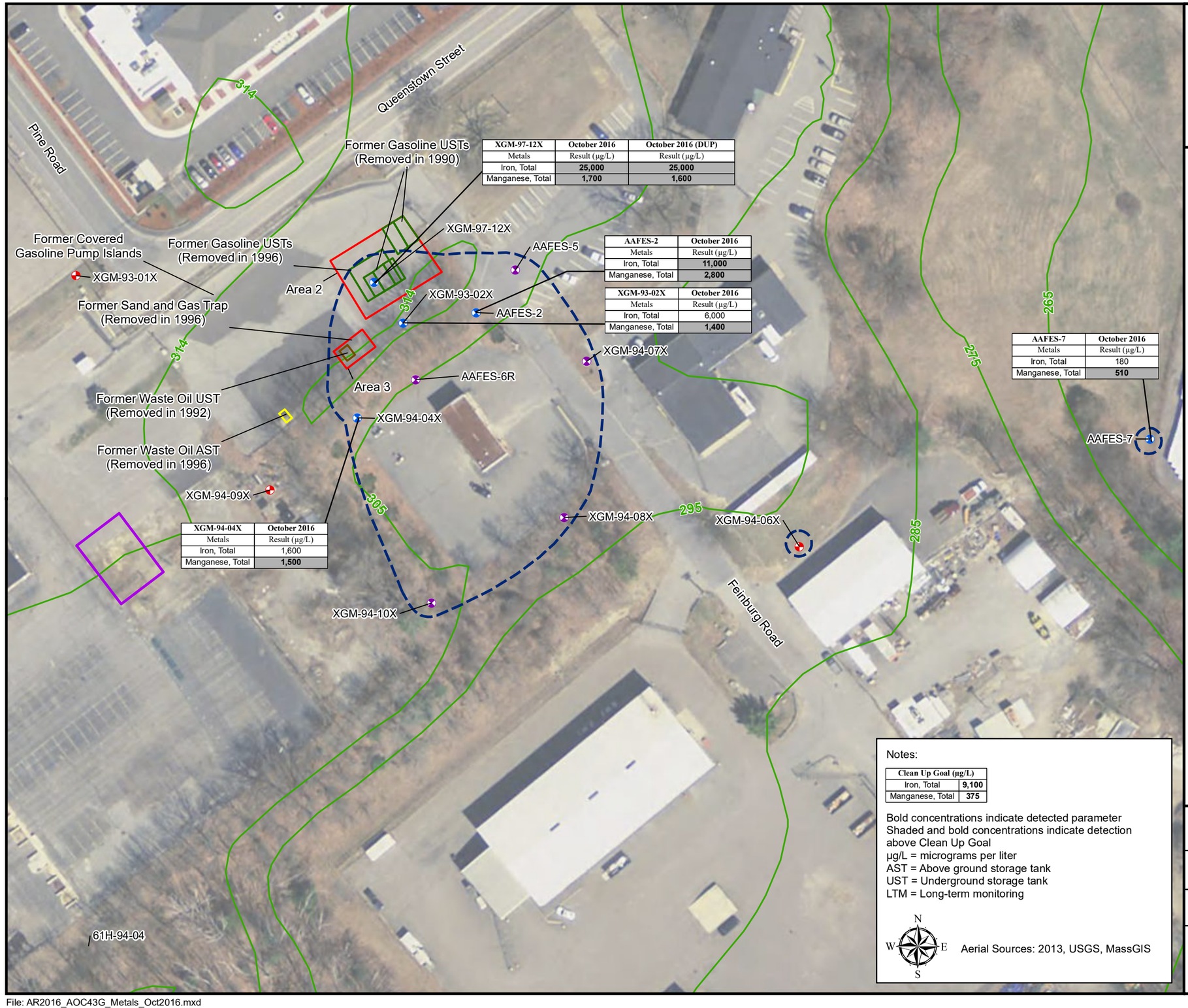
0 40 80 Feet

Date: 12/01/2017

Figure 14

File: AR2016_AOC43G_VPH_Alk_Oct2016.mxd

Figure 15
Metal Concentrations
Area of Contamination 43G
October 2016



XGM-97-12X	October 2016	October 2016 (DUP)
Metals	Result (µg/L)	Result (µg/L)
Iron, Total	**25,000**	**25,000**
Manganese, Total	**1,700**	**1,600**

AAFES-2	October 2016
Metals	Result (µg/L)
Iron, Total	**11,000**
Manganese, Total	**2,800**

XGM-93-02X	October 2016
Metals	Result (µg/L)
Iron, Total	6,000
Manganese, Total	**1,400**

AAFES-7	October 2016
Metals	Result (µg/L)
Iron, Total	180
Manganese, Total	**510**

XGM-94-04X	October 2016
Metals	Result (µg/L)
Iron, Total	1,600
Manganese, Total	**1,500**

Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Monitoring Well
- XGP-94-04X Well/Piezometer Identification
- Area 1
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on 1999 to 2011 analytical data)
- Former Gasoline UST(s)
- Former Waste Oil UST
- Former Waste Oil AST
- Former UST Area
- Topographic Contour (ft AMSL)

Notes:

Clean Up Goal (µg/L)	
Iron, Total	**9,100**
Manganese, Total	**375**

Bold concentrations indicate detected parameter
Shaded and bold concentrations indicate detection above Clean Up Goal
µg/L = micrograms per liter
AST = Above ground storage tank
UST = Underground storage tank
LTM = Long-term monitoring

N W E S

Aerial Sources: 2013, USGS, MassGIS

References:
LTMMP (HGL/Sovereign 02/2015)

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0 40 80 Feet

Date: 12/01/2017

Figure 15

File: AR2016_AOC43G_Metals_Oct2016.mxd

Figure 16
Site Layout
Area of Contamination 32 and 43A



Legend

- LTM Sample Well
- LTM Well - Periodic Gauge Only
- DEP Approved Wellhead Protection Areas (Zone II)
- 32M-92-01X — Well Identification
- Former Storage Tank(s)
- Former Building
- T-247 — Former Building Number
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on April 2002 to October 2011 analytical data)
- TPHC Soil Contamination
- Remaining Bedrock Outcrop
- Topographic Contour (Ft AMSL)

Notes:
AST = Above ground storage tank
UST = Underground storage Tank
DRMO = Defense Reutilization and Marketing Office
LTM = Long-term monitoring
TPHC = Total petroleum hydrocarbons

References:
LTMMP (HGL/Sovereign, 2015)

Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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AOC 32 and 43A

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KOMAN Government Solutions, LLC
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0 80 160
Feet

Date: 11/30/2017

Figure 16

KGS

File: AR2016_AOC32-43A.mxd

Notes:
AST = Aboveground Storage Tank
UST = Underground Storage Tank
DRMO = Defense Reutilization and Marketing Office
LTM = Long-Term Monitoring
TPHC = Total Petroleum Hydrocarbons
ft AMSL = Feet Above Mean Sea Level
NGVD = National Geodetic Vertical Datum (1929)

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SHL-15 (241.64)
32M-92-01X (243.60)
Tire Recycling Yard
32Z-01-07XOB (244.40)
32Z-01-06XBR
32Z-01-08XOB (243.43)
32Z-01-11XBR
DRMO East Yard
32M-01-14XBR
32M-01-14XOB (232.74)
Former UST 13 Excavation Area
32M-01-13XBR
32M-01-15XBR
32M-01-17XBR
SHL-25 (233.48)
32M-01-18XBR
32Z-01-12XBR
32M-92-03X (232.10)
T-204
(231.38)
43M-01-16XOB
43M-01-16XBR
P-186 Former Gasoline Pump House
32M-01-16XBR
Former ASTs
Former USTs
Former USTs (1990-1998)
T-216
T-401 Former Gasoline Pump House
Antietam Street
43M-01-17XBR
43M-01-17XOB (231.00)
32Z-01-10XBR
43M-01-20XOB (230.78)
43M-01-20XBR
32Z-99-02X
T-247
Cook Street
32Z-01-09XOB (230.55)
32Z-01-05XOB (230.71)
Independence Drive
N
W
E
S

Figure 17
Interpretive Water Table Elevation Overburden Wells
Areas of Contamination 32 and 43A
May 2016

Legend

- LTM Sample Well
- LTM Well - Periodic Gauge Only
- Monitoring Well - Paved Over
- Groundwater Contour (ft NGVD) (Interval = 2 ft)
- Inferred Groundwater Elevation Contour
- (230.71) Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- 32M-92-01X Well Identification
- DEP Approved Wellhead Protection Areas (Zone II)
- Former Storage Tank(s)
- Former Building
- T-247 Former Building Number
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on April 2002 to October 2011 analytical data)
- TPHC Soil Contamination
- Remaining Bedrock Outcrop
- Topographic Contour (Ft AMSL)

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AOC 32 and 43A

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

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0 80 160
Feet

Date: 11/30/2017

Figure 17

KGS

File: AR2016_AOC32-43A_May16GW-OB.mxd

Notes:
AST = Aboveground Storage Tank
UST = Underground Storage Tank
DRMO = Defense Reutilization and Marketing Office
LTM = Long-Term Monitoring
TPHC = Total Petroleum Hydrocarbons
ft AMSL = Feet Above Mean Sea Level
NGVD = National Geodetic Vertical Datum (1929)

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SHL-15
32M-92-01X
Tire Recycling Yard
32Z-01-07XOB
32Z-01-06XBR (244.97)
32Z-01-08XOB
32Z-01-11XBR
DRMO East Yard
32M-01-14XBR (234.22)
32M-01-14XOB
Former UST 13 Excavation Area
(241.31) 32M-01-13XBR
32M-01-15XBR (237.39)
32M-01-17XBR (233.67)
SHL-25
32M-01-18XBR (242.17)
32Z-01-12XBR (239.40)
32M-92-03X
T-204
43M-01-16XOB
(231.39) 43M-01-16XBR
P-186 Former Gasoline Pump House
Former ASTs
Former USTs
Former USTs (1990-1998)
32M-01-16XBR (235.35)
T-216
T-401 Former Gasoline Pump House
Antietam Street
43M-01-17XBR (231.08)
43M-01-17XOB
32Z-01-10XBR (241.26)
43M-01-20XOB
43M-01-20XBR (230.59)
32Z-99-02X
T-247
Cook Street
32Z-01-09XOB
32Z-01-05XOB
Independence Drive
N
W
E
S

Figure 18
Interpretive Water Table Elevation Bedrock Wells
Areas of Contamination 32 and 43A
May 2016

Legend

- LTM Sample Well
- LTM Well - Periodic Gauge Only
- Monitoring Well - Paved Over
- Groundwater Elevation Contour (ft NGVD) (Contour Interval = 2.0 ft)
- Inferred Groundwater Elevation Contour
- (239.40) Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- DEP Approved Wellhead Protection Areas (Zone II)
- 32M-92-01X Well Identification
- Former Storage Tank(s)
- Former Building
- T-247 Former Building Number
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on April 2002 to October 2011 analytical data)
- TPHC Soil Contamination
- Remaining Bedrock Outcrop
- Topographic Contour (Ft AMSL)

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AOC 32 and 43A

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0 80 160
Feet

Date: 11/30/2017

Figure 18

KGS

File: AR2016_AOC32-43A_May16GW-BR.mxd

Figure 19
VPH Concentrations
Area of Contamination 32 and 43A
June 2016

Notes:

Clean Up Goals	
	Result (µg/L)
VPH C9-C10 Aromatics	**200**
1,2-Dichlorobenzene	**600**
1,3-Dichlorobenzene	**100**
1,4-Dichlorobenzene	**5**
Chlorobenzene	**100**

Bold concentrations indicate detected parameter
Shaded and bold concentrations indicate detection above Clean Up Goal
µg/L=micrograms per liter
J=estimated value
U=non-detect
VPH=volatile petroleum hydrocarbon
AST=above ground storage tank
DRMO=Defense Reutilization and Marketing Office
LTM=long-term monitoring
TPHC=total petroleum hydrocarbons
UST=underground storage tank
ft AMSL = Feet above mean sea level

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

32M-01-13XBR	June 2016
	Result (µg/L)
VPH C9-C10 Aromatics	100 U
1,2-Dichlorobenzene	1.0 U
1,3-Dichlorobenzene	1.0 U
1,4-Dichlorobenzene	1.0 U
Chlorobenzene	1.0 U

32M-01-14XOB	June 2016
	Result (µg/L)
VPH C9-C10 Aromatics	100 U
1,2-Dichlorobenzene	**0.75 J**
1,3-Dichlorobenzene	1.0 U
1,4-Dichlorobenzene	1.0 U
Chlorobenzene	1.0 U

32M-01-18XBR	June 2016
	Result (µg/L)
VPH C9-C10 Aromatics	**450**
1,2-Dichlorobenzene	**340**
1,3-Dichlorobenzene	**58**
1,4-Dichlorobenzene	**38**
Chlorobenzene	**81**

32M-01-17XBR	June 2016	June 2016 (DUP)
	Result (µg/L)	Result (µg/L)
VPH C9-C10 Aromatics	100 U	100 U
1,2-Dichlorobenzene	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U

Legend

- LTM Sample Well
- LTM Well - Periodic Gauge Only
- DEP Approved Wellhead Protection Areas (Zone II)
- 32M-92-01X — Well Identification
- Former Storage Tank(s)
- Former Building
- T-247 — Former Building Number
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on April 2002 to October 2011 analytical data)
- TPHC Soil Contamination
- Remaining Bedrock Outcrop
- Topographic Contour (Ft AMSL)

2016 Main Post Annual Report
AOC 32 and 43A

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

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0 80 160
Feet

Date: 11/30/2017

Figure 19

File: AR2016_AOC32-43A_VPH_June16.mxd

Figure 20
Metal Concentrations
Area of Contamination 32 and 43A
June 2016

Notes:

Clean Up Goals or Background (µg/L)	
Manganese, Dissolved	**3,500**
Arsenic, Dissolved	**10**

Bold concentrations indicate detected parameter
Shaded and bold concentrations indicate detection above Clean Up Goal or Background
µg/L=micrograms per liter
J=estimated value
U=non-detect
AST=above ground storage tank
DRMO=Defense Reutilization and Marketing Office
LTM=long-term monitoring
TPHC=total petroleum hydrocarbons
UST=underground storage tank
ft AMSL = Feet above mean sea level

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SHL-15
32M-92-01X
Tire Recycling Yard
32Z-01-07XOB
32Z-01-06XBR
32Z-01-08XOB
32Z-01-11XBR
DRMO East Yard
32M-01-14XBR
32M-01-14XOB
Former UST 13 Excavation Area
32M-01-13XBR
32M-01-15XBR
32M-01-17XBR
SHL-25
32M-01-18XBR
32Z-01-12XBR
32M-92-03X
43M-01-16XOB
43M-01-16XBR
P-186 Former Gasoline Pump House
32M-01-16XBR
Former ASTs
Former USTs
Former USTs (1990-1998)
T-216
T-401 Former Gasoline Pump House
43M-01-17XBR
43M-01-17XOB
Antietam Street
32Z-01-10XBR
43M-01-20XOB
43M-01-20XBR
32Z-99-02X
T-247
Cook Street
32Z-01-09XOB
32Z-01-05XOB
Independence Drive
265
275
255

32M-01-13XBR	June 2016
Metals	Result (µg/L)
Manganese, Dissolved	3.0 U
Arsenic, Dissolved	3.0 U

32M-01-14XOB	June 2016
Metals	Result (µg/L)
Manganese, Dissolved	**1,800**
Arsenic, Dissolved	**13**

32M-01-18XBR	June 2016
Metals	Result (µg/L)
Manganese, Dissolved	**1,100**
Arsenic, Dissolved	2.8 J

32M-01-17XBR	June 2016	June 2016 (DUP)
Metals	Result (µg/L)	
Manganese, Dissolved	3.0 U	3.0 U
Arsenic, Dissolved	3.0 U	3.0 U

Legend

- LTM Sample Well
- LTM Well - Periodic Gauge Only
- DEP Approved Wellhead Protection Areas (Zone II)
- 32M-92-01X — Well Identification
- Former Storage Tank(s)
- Former Building
- T-247 — Former Building Number
- Approximate Historical Extent of Groundwater Contamination in Exceedance of Cleanup Goals (based on April 2002 to October 2011 analytical data)
- TPHC Soil Contamination
- Remaining Bedrock Outcrop
- Topographic Contour (Ft AMSL)

2016 Main Post Annual Report
AOC 32 and 43A

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

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0 80 160
Feet

Date: 11/30/2017

Figure 20

KGS

File: AR2016_AOC32-43A_Metals_June16.mxd

Figure 21
Site Layout
Devens Consolidation Landfill



Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Gas Vent
- Monitoring Well - Destroyed
- LFM-03-07 Well/Vent Identification
- Topographic Contour (ft AMSL)

Notes:

LFM-99-06A was replaced by LFM-99-06A-RP in September 2015.

Gas vent locations were approximated based upon the locations displayed in Figure 2 of USACE New England District's Devens Consolidation Landfill 2004 Annual Report.

ft AMSL = feet above mean sea level
LTM = long term monitoring

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

2016 Main Post Annual Report
Devens Consolidation Landfill

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

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0 75 150
Feet

Date: 11/30/2017

Figure 21

KGS

File: AR2016_DCL_SITE.mxd

Notes:
LFM-99-06A was replaced by LFM-99-06A-RP in September 2015.
Gas vent locations were approximated based upon the locations displayed in Figure 2 of USACE New England District's Devens Consolidation Landfill 2004 Annual Report.
ft AMSL = Feet Above Mean Sea Level
LTM = Long-Term Monitoring
NGVD = National Geodetic Vertical Datum (1929)

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

LFM-99-03B (301.71)
LFM-99-05B (297.14)
LFM-99-05A (294.44)
A'
A
LFM-99-01B (326.25)
LFM-99-02B (336.21)
LFM-03-07
LFM-99-06A-RP (301.82)
LFM-99-06A
V-1
V-2
V-3
V-4
V-5
V-6
V-7
V-8
V-9
V-10
V-11
Stown Street
340
350
360
370
380
390
400
330
320
310
300
295
305
325
315
335

Figure 22
Interpretive Water Table Elevation
Devens Consolidation Landfill
June 2016

Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Gas Vent
- Monitoring Well - Destroyed
- Groundwater Contour (ft NGVD) (Interval = 5 ft)
- Inferred Groundwater Elevation Contour
- (301.71) Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- LFM-03-07 Well/Vent Identification
- A——A' Groundwater Gradient Calculation Location
- Topographic Contour (ft AMSL)

2016 Main Post Annual Report
Devens Consolidation Landfill

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

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0 60 120
Feet

Date: 11/30/2017

Figure 22

KGS

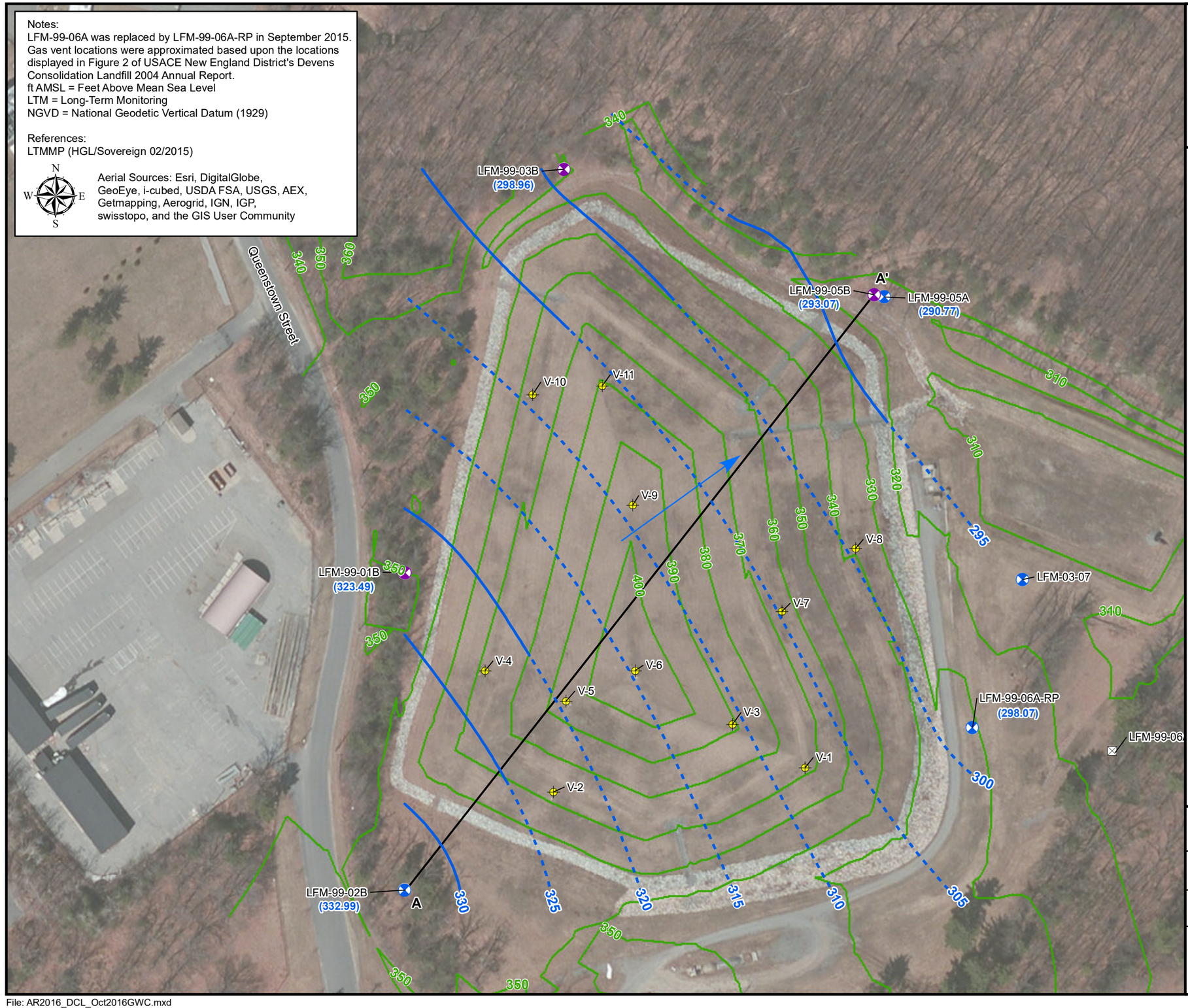
File: AR2016_DCL_June2016GWC.mxd

Figure 23
Interpretive Water Table Elevation
Devens Consolidation Landfill
October 2016

Notes:
LFM-99-06A was replaced by LFM-99-06A-RP in September 2015.
Gas vent locations were approximated based upon the locations displayed in Figure 2 of USACE New England District's Devens Consolidation Landfill 2004 Annual Report.
ft AMSL = Feet Above Mean Sea Level
LTM = Long-Term Monitoring
NGVD = National Geodetic Vertical Datum (1929)

References:
LTMMP (HGL/Sovereign 02/2015)

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Gas Vent
- Monitoring Well - Destroyed
- Groundwater Contour (ft NGVD) (Interval = 5 ft)
- Inferred Groundwater Elevation Contour
- (298.96) Groundwater Elevation (ft NGVD)
- Groundwater Flow Direction
- LFM-03-07 Well/Vent Identification
- A——A' Groundwater Gradient Calculation Location
- Topographic Contour (ft AMSL)

2016 Main Post Annual Report
Devens Consolidation Landfill

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

KOMAN Government Solutions, LLC
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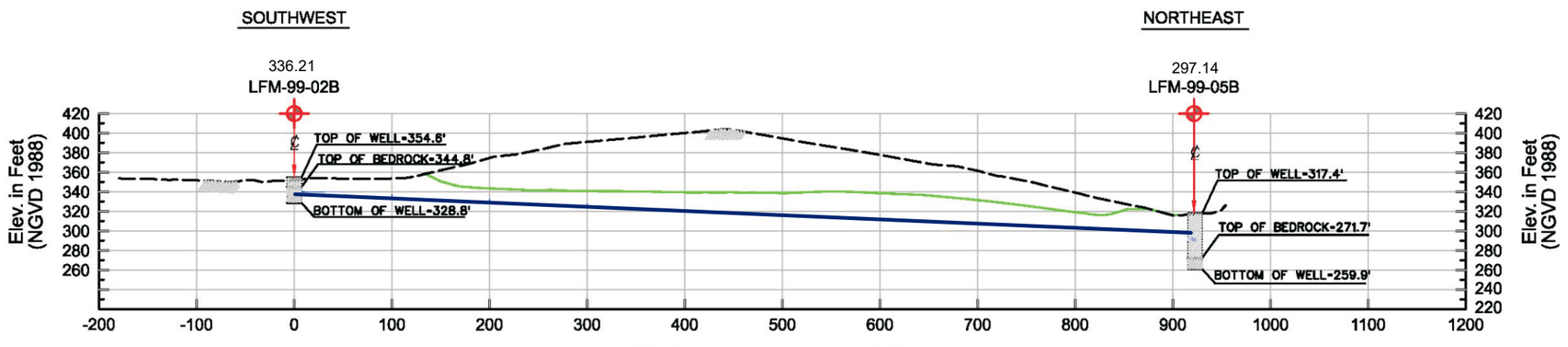
0 60 120
Feet

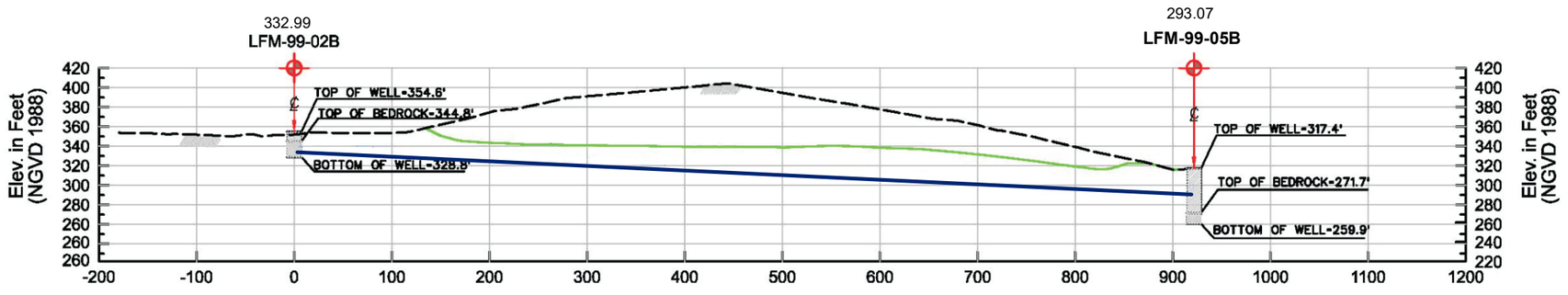
Date: 11/30/2017

Figure 23

File: AR2016_DCL_Oct2016GWC.mxd



PROFILE 1 (June 2016)



PROFILE 2 (October 2016)

Figure 24
Devens Consolidation Landfill Profiles
LFM-99-02B to LFM-99-05B

Legend

- Existing Ground Surface
- Liner
- Bedrock Groundwater Levels
- Monitoring Well

Notes:

1. Horizontal and vertical scales as shown. No vertical exaggeration.

2. Existing ground surface and liner elevations based on figures from the remedial action closure report by Shaw Environmental, Inc. September 2003.

3. Bedrock wells water table elevations based on contours generated from June and October 2016 measurements.

NGVD = National Geodetic Vertical Datum

2016 Main Post Annual Report
Devens Consolidation Landfill

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

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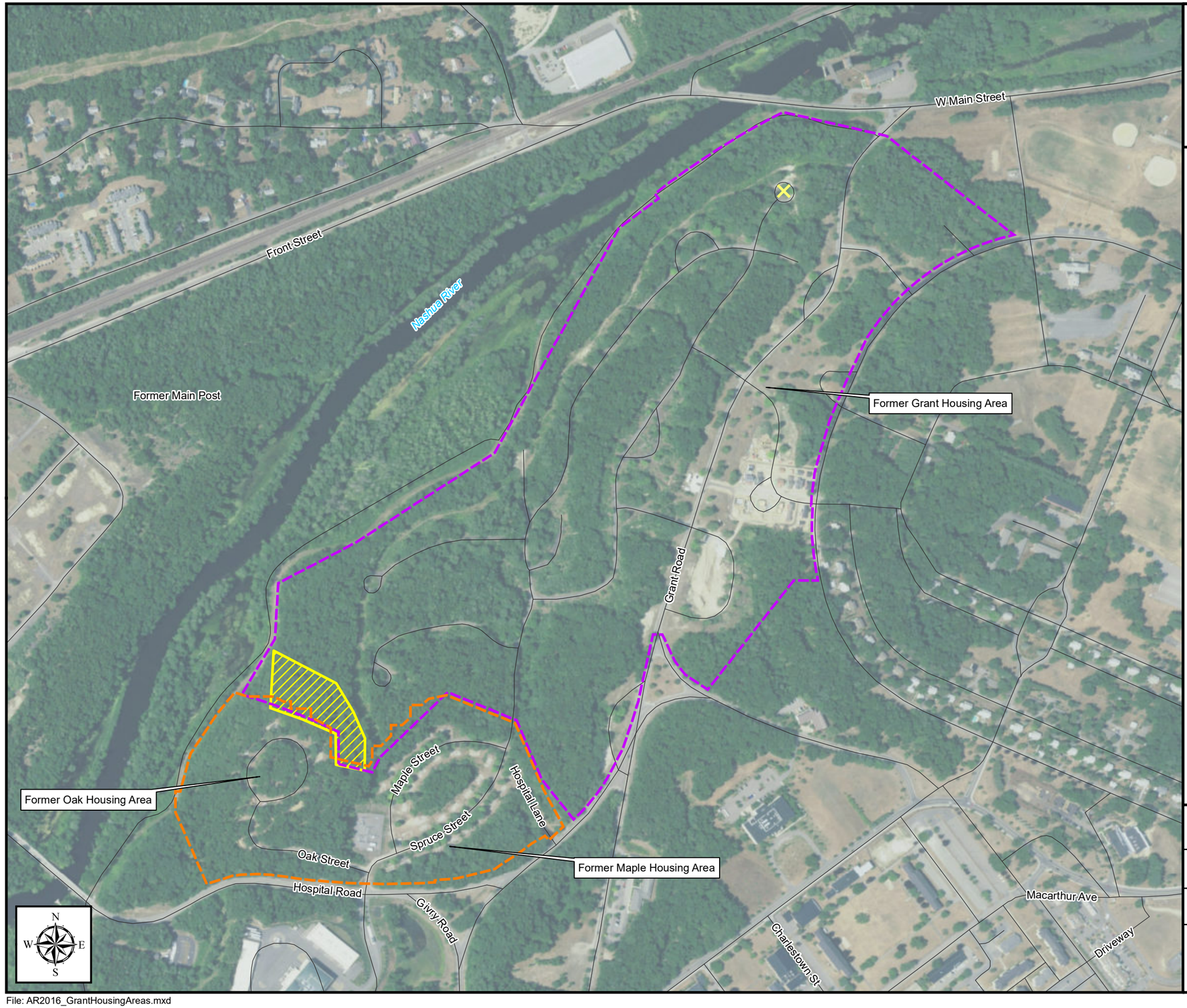
Date:	Figure	
12/15/2017	24	KGS

File: AR2016_DCL_Profiles.mxd

Figure 25
Site Location
Grant Housing Area/
Oak and Maple Housing Area/
37-mm Impact Area



Legend

- Former Grant Housing Area
- Former Maple Housing Area
- 37-mm Impact Area
- Approximate Former Firing Location
- Road

Aerial Sources: 2016, Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

2016 Main Post Annual Report
Housing Areas

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100, Marlborough, MA 01752

0 250 500
Feet

Date: 11/30/2017

Figure 25

KGS

File: AR2016_GrantHousingAreas.mxd



TABLES

Table 5
Groundwater Elevations - Spring 2016 LTM Event
Main Post - Former Fort Devens Army Installation - Devens, MA

Site Name	Well Identification	Date of Gauging	DTW (ft below TOC)	TOC Elevation (ft NGVD)	GW Elevation (ft NGVD)	Notes
DCL	LFM-99-01B	5/17/2016	25.22	351.47	326.25	--
	LFM-99-02B	5/17/2016	18.42	354.63	336.21	--
	LFM-99-03B	5/17/2016	41.17	342.88	301.71	--
	LFM-99-05A	5/17/2016	22.94	317.38	294.44	no lock
	LFM-99-05B	5/17/2016	20.24	317.38	297.14	--
	LFM-99-06A-RP	5/17/2016	15.27	317.09	301.82	--
	LFM-03-07	5/17/2016	--	313.90	--	inaccessible (paved over)
AOC 57, Area 2	57M-03-01X	5/19/2016	14.86	237.90	223.04	--
	57M-03-02X	5/19/2016	5.27	227.10	221.83	--
	57M-03-03X	5/19/2016	0.97	223.64	222.67	--
	57M-03-04X	5/19/2016	2.4	224.02	221.62	--
	57M-03-05X	5/19/2016	2.71	224.33	221.62	--
	57M-03-06X	5/19/2016	2.74	224.56	221.82	--
	57M-95-05X	5/19/2016	14.89	237.31	222.42	--
	57M-95-06X	5/19/2016	13.4	236.56	223.16	--
	57M-95-07X	5/19/2016	2.8	224.57	221.77	--
	57WP-05-01	5/19/2016	2.07	NA	NA	--
	57WP-06-02	5/19/2016	1.24	222.91	221.67	--
AOC 57, Area 3	57M-95-03X	5/19/2016	11.47	234.97	223.50	--
	57M-96-10X	5/19/2016	--	229.55	--	Dry, DTB = 7.11'
	57M-96-11X	5/19/2016	2.96	224.38	221.42	--
	57M-96-12X	5/19/2016	5.28	227.87	222.59	--
	57M-96-13X	5/19/2016	5.03	227.73	222.70	--
AOC 32/43A	SHL-25	5/17/2016	26.82	260.30	233.48	--
Overburden Wells	32M-92-01X	5/17/2016	17.33	260.93	243.60	--
	32Z-99-02X	5/17/2016	--	260.79	--	not found
	32M-01-14XOB	5/17/2016	24.68	257.42	232.74	--
	32M-92-03X	5/17/2016	28.89	260.99	232.10	--
	SHL-15	5/17/2016	17.46	259.10	241.64	--
	32Z-01-05XOB	5/17/2016	30.69	261.4	230.71	1 bolt gone
	32Z-01-07XOB	5/17/2016	15.91	260.31	244.40	--
	32Z-01-08XOB	5/17/2016	17.90	261.33	243.43	--
	32Z-01-09XOB	5/17/2016	27.62	258.17	230.55	--
	43M-01-16XOB	5/17/2016	26.27	257.65	231.38	1 bolt gone
	43M-01-17XOB	5/17/2016	27.87	258.87	231.00	--
	43M-01-20XOB	5/17/2016	27.68	258.46	230.78	--
AOC 32/43A	32M-01-13XBR	5/17/2016	17.34	258.65	241.31	--
Bedrock Wells	32M-01-14XBR	5/17/2016	22.69	256.91	234.22	--
	32M-01-15XBR	5/17/2016	20.97	258.36	237.39	--

Table 5
Groundwater Elevations - Spring 2016 LTM Event
Main Post - Former Fort Devens Army Installation - Devens, MA

Site Name	Well Identification	Date of Gauging	DTW (ft below TOC)	TOC Elevation (ft NGVD)	GW Elevation (ft NGVD)	Notes
	32M-01-16XBR	5/17/2016	22.94	258.29	235.35	--
	32M-01-17XBR	5/17/2016	25.82	259.49	233.67	--
	32M-01-18XBR	5/17/2016	16.97	259.14	242.17	--
	32Z-01-06XBR	5/17/2016	17.73	262.7	244.97	--
	32Z-01-10XBR	5/17/2016	16.96	258.22	241.26	--
	32Z-01-11XBR	5/17/2016	--	262.22	--	dry
	32Z-01-12XBR	5/17/2016	19.28	258.68	239.40	--
	43M-01-16XBR	5/17/2016	26.18	257.57	231.39	--
	43M-01-17XBR	5/17/2016	27.97	259.05	231.08	--
	43M-01-20XBR	5/17/2016	27.52	258.11	230.59	1 bolt gone

Notes:
DCL = Devens Consolidated Landfill
AOC = Area of Contamination
DTW = Distance to Water
TOC = Top of Casing
NGVD = National Geodetic Vertical Datum (1929)
GW = Groundwater

Table 6
Groundwater Elevations - Fall 2016 LTM Event
Main Post - Former Fort Devens Army Installation - Devens, MA

Site Name	Well Identification	Date of Gauging	DTW (ft below TOC)	TOC Elevation (ft NGVD)	GW Elevation (ft NGVD)	Notes
DCL	LFM-99-01B	10/12/2016	27.98	351.47	323.49	--
	LFM-99-02B	10/12/2016	21.64	354.63	332.99	--
	LFM-99-03B	10/12/2016	43.92	342.88	298.96	--
	LFM-99-05A	10/12/2016	26.61	317.38	290.77	--
	LFM-99-05B	10/12/2016	24.31	317.38	293.07	--
	LFM-99-06A-RP	10/12/2016	19.02	317.09	298.07	--
	LFM-03-07	10/12/2016	--	313.90	--	inaccessible (paved over)
AOC 43G	AAFES-2	10/14/2016	24.88	302.80	277.92	--
	AAFES-5	10/14/2016	23.39	300.92	277.53	--
	AAFES-6R	10/14/2016	22.39	299.54	277.15	--
	AAFES-7	10/14/2016	13.27	259.51	246.24	--
	XGM-94-04X	10/14/2016	22.12	301.50	279.38	--
	XGM-94-07X	10/14/2016	21.59	295.60	274.01	--
	XGM-94-08X	10/14/2016	27.42	299.80	272.38	--
	XGM-94-10X	10/14/2016	26.70	302.70	276.00	--
	XGM-93-02X	10/14/2016	30.44	309.60	279.16	--
	XGM-97-12X	10/14/2016	27.31	309.63	282.32	--
AOC 69W	69W-94-12	10/25/2016	9.57	228.94	219.37	--
	69W-94-13	10/25/2016	8.69	227.79	219.10	--
	69W-94-14	10/25/2016	9.47	228.02	218.55	--
	Willow Brook PZ	10/25/2016	--	218.97	--	--
	ZWM-01-25X	10/25/2016	7.37	225.51	218.14	--
	ZWM-01-26X	10/25/2016	8.79	227.61	218.82	--
	ZWM-95-15X	10/25/2016	7.43	225.81	218.38	--
	ZWM-95-16X	10/25/2016	8.07	228.38	220.31	--
	ZWM-95-17X	10/25/2016	7.59	238.63	231.04	--
	ZWM-95-18X	10/25/2016	5.51	222.95	217.44	--
	ZWM-99-22X	10/25/2016	8.08	227.52	219.44	--
	ZWM-99-23X	10/25/2016	7.38	225.88	218.50	--
	ZWM-99-24X	10/25/2016	7.74	226.65	218.91	--
	ZWP-95-01X	10/25/2016	7.96	226.84	218.88	--
	ZWP-95-02X	10/25/2016	6.14	223.63	217.49	--
	69WP-08-01	10/25/2016	4.62	221.5	216.88	--
	69WP-13-01	10/25/2016	4.07	NA	NA	--

Notes:
DCL = Devens Consolidated Landfill
AOC = Area of Concern
DTW = Distance to Water
TOC = Top of Casing
NGVD = National Geodetic Vertical Datum (1929)
GW = Groundwater

Table 7
Monthly Precipitation Data (Inches of Precipitation)
Fitchburg, Massachusetts Weather Station

	Year													
Month	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**Average**
January	0.75	3.46	4.58	2.72	2.38	2.49	3.31	3.66	2.18	1.38	2.18	2.73	1.48	2.56
February	1.32	2.17	2.28	1.21	8.85	2.51	6.05	4.11	1.12	2.91	3.16	0.55	3.36	3.05
March	2.97	4.08	0.53	3.97	5.28	2.40	10.61	4.08	1.25	2.31	4.16	1.03	3.12	3.52
April	7.67	5.47	2.21	7.09	3.61	4.00	1.43	5.05	2.87	1.62	3.25	0.33	1.89	3.58
May	3.43	4.25	7.32	4.37	1.99	3.97	3.37	3.81	3.13	5.38	3.29	0.10	2.04	3.57
June	1.67	3.87	9.31	1.56	4.02	6.41	3.53	5.69	4.03	8.53	1.76	2.76	1.04	4.17
July	4.72	1.67	1.71	6.25	6.35	9.61	4.01	2.27	1.46	3.46	4.10	1.73	1.92	3.79
August	2.77	2.56	4.38	1.40	4.66	2.64	3.58	10.99	4.92	2.09	2.25	1.17	2.55	3.54
September	7.35	1.67	2.87	2.25	8.05	1.28	2.48	6.94	3.06	1.64	1.07	3.23	0.05	3.23
October	1.91	13.46	6.10	3.35	1.81	3.99	6.17	7.12	5.12	1.28	5.22	3.60	4.58	4.90
November	3.42	4.40	6.38	2.67	3.66	3.43	3.92	3.94	0.47	2.66	3.60	1.66	3.27	3.34
December	3.89	3.79	1.77	3.67	3.78	3.69	4.08	4.84	3.39	3.46	4.44	2.10	3.40	3.56
TOTAL	**41.87**	**50.85**	**49.44**	**40.51**	**54.44**	**46.42**	**52.54**	**62.50**	**33.00**	**36.72**	**38.48**	**20.99**	**28.70**	**42.80**

Notes:

2016 monthly data retrieved from the National Oceanic and Atmospheric Administration (NOAA) data inventory.

Table 8
Analytical Methods, Containers, Holding Times and Preservatives
Main Post - Former Fort Devens Army Installation -
Devens, Massachusetts

Site/Events	Parameter	Analytical Method[1]	Contaminant of Concern	Sample Container[2]	Preservative	Holding Time
AOC 57 (Spring)	Dissolved Metals*	SW6010C/6020A	As, Fe, Mn	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
	Total Metals	SW6010C/6020A	As, Fe, Mn	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
AOC 32/43A (Spring)	VOCs	SW8260B	TAL	3 x 40-ml vials with teflon septa screw caps; no headspace	HCl to pH < 2; 4°± 2°C	14 Days
	VPH	MADEP-VPH-04-1.1	VPH/BTEX	3 x 40-ml vials with teflon septa screw caps; no headspace	HCl to pH < 2; 4°± 2°C	14 Days
	Dissolved Metals*	SW6010C/6020A	As, Mn	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
AOC 69W (Fall)	EPH	MADEP-EPH-04-1.1	EPH	2 x 1-Liter Glass Amber with Teflon- lined lid	HCl to pH < 2; 4°± 2°C	7 Days (extraction) 40 Days (analyses)
	Dissolved Metals*	SW6010C/6020A	As, Fe, Mn	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
AOC 43G (Fall)	VPH	MADEP-VPH-04-1.1	VPH/BTEX	3 x 40-ml vials with teflon septa screw caps; no headspace	HCl to pH < 2; 4°± 2°C	14 Days
	Total Metals	SW6010C/6020A	Fe, Mn	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
	Alkalinity	SM2320B	None	1 x 250-ml Polyethylene	Store at 4°± 2°C	14 Days
Devens Consolidation Landfill (Groundwater) (Spring/Fall)	VPH	MADEP-VPH-04-1.1	VPH/BTEX	3 x 40-ml vials with teflon septa screw caps; no headspace	HCl to pH < 2; 4°± 2°C	14 Days
	EPH	MADEP-EPH-04-1.1	EPH	2 x 1-Liter Glass Amber with Teflon- lined lid	HCl to pH < 2; 4°± 2°C	7 Days (extraction) 40 Days (analyses)
	Pesticides	SW8081A	TAL	2 x 1-Liter Glass Amber with Teflon- lined lid	Store at 4°± 2°C	7 Days (extraction) 40 Days (analyses)
	Select Metals (Total)	SW6010C/6020A	As, Ba, Cd, Cr, Cu, Fe, Mn, Se, Ag	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
	Mercury	SW7470A	Hg			28 days
	Cyanide (Total)	SW9012B	Cyanide (Total)	1 x 250-ml Polyethylene	NAOH to pH > 12; 4°±	14 Days
	TDS	SM2540C-11	None	1 x 500-ml Polyethylene	Store at 4°± 2°C	7 days
	Anions	SW9056A	Chloride, Sulfate	1 x 250-ml Polyethylene	Store at 4°± 2°C	28 days
	Alkalinity	SM2320B	None	1 x 250-ml Polyethylene	Store at 4°± 2°C	14 Days
	COD	410.4	None	1 x 250-ml Polyethylene	H2SO4 to pH < 2; 4°± 2°C	28 Days
	Nitrate/Nitrite as N	E353.2	Nitrate/Nitrite as N	1 x 500-ml Polyethylene	H2SO4 to pH < 2; 4°± 2°C	28 Days

Table 8
Analytical Methods, Containers, Holding Times and Preservatives
Main Post - Former Fort Devens Army Installation -
Devens, Massachusetts

Site/Events	Parameter	Analytical Method[1]	Contaminant of Concern	Sample Container[2]	Preservative	Holding Time
Devens Consolidation Landfill (Leachate) (Fall)	Select Metals (Total)	SW6010C/6020A	Total Metals include: Al, As, Cd, Cr, Cu, Pb, Ni, Ag, Zn	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	180 Days
	Mercury	SW7470A	Hg	1 x 250-ml Polyethylene	HNO3 to pH < 2; 4°± 2°C	28 days
	Cyanide (Total)	SW9012B	Cyanide (Total)	1 x 250-ml Polyethylene	NAOH to pH > 12; 4°±	14 Days
	TSS/pH	SM2540D/SW9040C		1 x 1-liter Polyethylene	Store at 4°± 2°C	7 days
	TPH as DRO	SW8015B	DRO	2 x 1-Liter Glass Amber with Teflon- lined lid	Store at 4°± 2°C	7 Days (extraction) 40 Days (analyses)
	Total Phenolics	SW9065	Total Phenols	1 x 500-ml amber	H2SO4 to pH < 2; 4°± 2°C	28 days
	TTO (VOCs)	624	VOCs	3 x 40-ml vials with teflon septa screw caps; no headspace	HCl to pH < 2; 4°± 2°C	14 Days
	TTO (SVOCs)	625	SVOCs	2 x 1-liter amber	Store at 4°± 2°C	7 Days (extraction) 40 Days (analyses)
	TTO (Pesticides/PCBs)	SW8081B/8082A	Pesticides/PCBs	2 x 1-liter amber	Store at 4°± 2°C	7 Days (extraction) 40 Days (analyses)

Notes:

* Samples submitted for dissolved metals are field filtered.

1 "Methods for Chemical Analysis of Water and Wastes", Cincinnati, OH, March 1979, EPA 600-4-79-020.
"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods", U.S. EPA SW-846, Update 8, 2014.

2 Additional sample containers/volumes are required for matrix quality control samples.

Table 9
Main Post Monitoring Wells, Well Points, Piezometers and Surface Water Locations Selected for Long-Term Monitoring
Former Fort Devens Army Installation
Devens, Massachusetts

Monitoring Well/ Piezometer/ Surface Water ID	Location	Rationale	Screen Interval	Well Screen Intervals	Top of Casing Elevation	Ground Surface Elevation	Sample Pump Intake Depth	Dedicated Bladder Pump
			(feet NGVD)	(feet-bgs)	(feet NGVD)	(feet NGVD)	(feet TOC)	(Yes/No)
AOC 57 Sampling (Annual Sampling)								
57M-03-01X	Area 2 - Upgradient location.	LTM water level only.	215.5 – 225.5	12.4 - 22.4	237.9	235.50	20.40	--
57M-03-02X	Area 2 - On west fringe of remedial excavation.	LTM water level only.	213.3 – 223.3	3.8 - 13.8	227.1	225.30	9.80	NO
57M-03-03X	Area 2 - On southern fringe of remedial excavation and at wetland limit.	LTM water level only.	210.34 – 220.34	3.3 - 13.3	223.64	222.34	8.00	NO
57M-03-04X	Area 2 – On southern fringe of remedial excavation and at wetland limit.	LTM water level only.	210.22 – 220.22	3.8 - 13.8	224.02	222.22	9.80	NO
57M-03-05X	Area 2 - On southeastern fringe of remedial excavation and at wetland limit.	LTM water level only.	210.43 – 220.43	3.9 - 13.9	224.33	222.43	10.00	NO
57M-03-06X	Area 2 – On east fringe of remedial excavation.	LTM water level only.	211.06 – 221.06	3.5 - 13.5	224.56	223.06	9.50	--
57M-95-05X	Area 2 - West of and upgradient of excavation limit.	LTM water level only.	214.87 – 224.87	12.44 - 22.44	237.31	234.87	--	--
57M-95-06X	Area 2 – West of and cross gradient of excavation limit.	LTM water level only.	212.34 – 222.34	14.22 - 24.22	236.56	234.42	--	--
57M-95-07X	Area 2 – East of and cross gradient of excavation limit.	LTM water level only.	210.36 – 220.36	4.21 - 14.21	224.57	223.36	--	--
57WP-05-01	Area 2 – Southwest of Staff Gauge 01.	LTM water level only.	0 – 2	--	--	--	≈3	--
57WP-06-02	Area 2 - Adjacent to monitoring well 57M-03-03X.	LTM water level only.	19 – 24	20 - 25	--	--	--	--
57M-95-03X	Area 3 - Downgradient of source.	Sentry well. Monitor for decrease in COC concentration and decrease in the potential for off-site migration.	215.48 - 225.48	9.49 - 19.49	234.97	232.48	15.30	NO
57M-96-10X	Area 3 – On west fringe of 1999 excavation area.	LTM water level only.	214.09 - 224.09	5.46 - 15.46	229.55	227.09	NA	NA
57M-96-11X	Area 3 – Downgradient well.	Monitor for decrease in COC concentration and decrease in the potential for off-site migration.	210.18 - 220.18	4.2 - 14.2	224.38	222.18	9.20	NO
57M-96-12X	Area 3 – West of and cross gradient of excavation limit.	LTM water level only.	212.82 - 222.82	5.05 - 15.05	227.87	224.82	NA	NA
57M-96-13X	Area 3 - West of and cross gradient of excavation limit.	LTM water level only.	213.06 - 223.06	4.67 - 14.67	227.73	225.06	NA	NA
57P-98-03X	Area 3 – Southeast of monitoring well 57M-96-11X.	LTM water level only.	NA	NA	222.58	NA	NA	NA
57P-98-04X	Area 3 - Southwest of monitoring well 57M-96-11X.	LTM water level only.	NA	NA	223.72	NA	NA	NA
57WP-06-03	Area 3 – Adjacent to monitoring well 57M-96-11X.	LTM water level only.	202.69 - 207.69	15 – 20	222.69	NA	NA	NA
SW-1	Area 3 – At downgradient fringe of excavation. Active seeps seem likely to be temporal.	Monitor for decrease in COC concentration and decrease in the potential for off-site migration.	NA	NA	NA	NA	NA	NA

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Former Fort Devens Army Installation
Devens, Massachusetts

Monitoring Well/ Piezometer/ Surface Water ID	Location	Rationale	Screen Interval (feet NGVD)	Well Screen Intervals (feet-bgs)	Top of Casing Elevation (feet NGVD)	Ground Surface Elevation (feet NGVD)	Sample Pump Intake Depth (feet TOC)	Dedicated Bladder Pump (Yes/No)
AOC 69W (Annual Sampling)								
69W-94-13	North of paved area near source area.	Source area well. Monitor for decrease in COC concentrations.	211.30 - 221.30 (approximate)	6.49 - 16.49	227.79	225.30	11.49	NO
69W-94-14	Approx. 30 feet upgradient of Willow Brook wetlands.	Monitor for decrease in COC concentration and decrease in the potential for off-site migration.	212.53 - 222.53 (approximate)	5.49 - 15.49	228.02	225.53	11.09	NO
ZWM-95-15X	Near former underground concrete vault.	Sentry well. Monitor for decrease in COC concentration and decrease in the potential for off-	209.94 - 219.94 (approximate)	5.87 - 15.87	225.81	222.94	10.87	NO
ZWM-95-18X	Approx. 120 feet downgradient of the concrete vault.	Sentry well. Monitor for off-site migration.	207.73 - 217.73 (approximate)	5.22 - 15.22	222.95	220.73	10.22	NO
ZWM-99-22X	Paved source area.	Replacement of destroyed well 69W-94-10. Monitor for decrease in COC concentrations.	212.89 - 222.89	4.63 - 14.63	227.52	227.69	9.63	NO
ZWM-99-23X	Downgradient well east of Willow Brook and northeast of 69W-94-14.	Sentry well. Monitor for decrease in COC concentration and decrease in the potential for off-site migration.	211.20 - 221.20	4.68 - 14.68	225.88	224.20	9.68	NO
ZWM-99-24X	Downgradient well east of Willow Brook and southwest of 69W-94-14.	Sentry well. Monitor for decrease in COC concentration and decrease in the potential for off-site migration.	211.13 - 221.13	5.52 - 15.52	226.65	223.63	10.52	NO
ZWM-01-25X	Downgradient well northeast of ZWM-95-15X.	Sentry well.	209.38 - 219.38	6.13 - 16.13	225.51	223.38	11.13	NO
ZWM-95-17X	Southeast of school.	Background well. Water level and quality parameters only.	213.87 - 223.87 (approximate)	14.76 - 24.76	238.63	236.07	19.76	NO
ZWM-01-26X	Northeast of ZWM-99-23.	Sentry well. Water level and quality parameters only.	211.16 - 221.16	6.45 - 16.45	227.61	225.16	11.48	NO
ZWP-95-01X	Along Willow Brook, west of ZWM-99-24X.	LTM water level only.	212.43 - 214.43 (approximate)	12.41 - 14.41	226.84	224.43	NA	NA
ZWP-95-02X	West side of Willow Brook, northwest of ZWM-95-15X.	LTM water level only.	209.21 - 211.21 (approximate)	12.42 - 14.42	223.63	220.71	NA	NA
69W-94-12	East of 69W-94-13.	LTM water level only.	NA	NA	228.94	226.45	NA	NA
ZWM-95-16X	Southeast of ZWM-99-22X, near loading dock.	LTM water level only.	212.71 - 222.71 (approximate)	5.67 - 15.67	228.38	229.01	NA	NA
Willow Brook Piezometer	Approximately ¼ mile north of site along Willow Brook.	LTM water level only.	NA	NA	218.97	217.60	NA	NA
69WP-08-01	Downgradient of ZWM-01-25X.	Sentry well point for manganese delineation.	208.5 - 211.5	10 - 13	221.5	NA	11.5	NO
69WP-13-01	Downgradient of 69WP-08-01.	Sentry well point for manganese delineation.	208.5 - 211.5 estimated	10.02-13.02	221.5 (estimated)	NA	12.15	NO

Table 9
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Former Fort Devens Army Installation
Devens, Massachusetts

Monitoring Well/ Piezometer/ Surface Water ID	Location	Rationale	Screen Interval	Well Screen Intervals	Top of Casing Elevation	Ground Surface Elevation	Sample Pump Intake Depth	Dedicated Bladder Pump
			(feet NGVD)	(feet-bgs)	(feet NGVD)	(feet NGVD)	(feet TOC)	(Yes/No)
AOC 43G (Annual Sampling)								
AAFES-2	East-southeast of former gasoline USTs.	Source well. Monitor intrinsic remediation.	269.50 - 284.50	18.3 - 33.3	302.8	300.70	27.88	NO
AAFES-5	East of former gasoline USTs.	LTM water level only.	270.70 - 285.70	15.22 - 30.22	300.92	301.20	26.19	NO
AAFES-6R	South of well XGM-93-02X.	LTM water level only.	270.6 - 280.6	16.97 - 26.97	299.54	297.57	22.82	NO
XGM-93-02X	South of former gasoline USTs.	Source well. Monitor intrinsic remediation.	272.60 - 282.60	28 - 38	309.6	310.60	33.22	NO
XGM-94-04X	Approx. 100 feet south of former gasoline USTs.	Sentry well. Monitor potential for off-site migration.	271.00 - 281.00	20.5 - 30.5	301.5	299.10	25.50	NO
XGM-94-07X	Approx. 180 feet east southeast of former gasoline USTs.	LTM water level only.	266.00 - 276.00	19.6 - 29.6	295.6	293.00	24.60	NO
XGM-94-08X	Approx. 230 feet southeast of former gasoline USTs.	LTM water level only.	263.70 - 273.70	26.1 - 36.1	299.8	297.20	31.10	NO
XGM-94-10X	Approx. 250 feet south of former gasoline USTs.	LTM water level only.	268.90 - 278.90	23.8 - 33.8	302.7	300.40	NA	NO
XGM-97-12X	At location of former gasoline USTs.	Source well. Monitor intrinsic remediation.	275.63 - 285.63	24 - 34 (approximate)	309.63	NA	29.35	NO
AAFES-7	Approx. 620 feet southeast of former gasoline USTs.	Monitor potential for manganese off-site migration.	242.4 - 252.4 ft msl	4.5 - 14.5	259.51	256.90	12.62	NO
AOCs 32 and 43A (Annual Sampling)								
32M-92-01X	North of the building on west edge of former Tire Recycling Yard.	LTM water level only.	234.7 – 244.7	16.23 - 26.23	260.93	258.40	NA	NA
32M-92-03X	West of the building and just north of former DRMO Warehouse.	LTM water level only.	225.8 – 235.8	25.19 - 35.19	260.99	258.80	NA	NA
32Z-99-02X (32M-92-02X)	East of the building.	LTM water level only.	228.9 – 243.9	16.89 - 31.89	260.79	258.40	28.50	NO
32Z-01-05XOB	Western end of parking lot to the south of the building.	LTM water level only.	226.3 – 236.3	25.1 - 35.1	261.4	261.75	NA	NA
32Z-01-06XBR	In vegetation north of northeast corner of the building.	LTM water level only.	234.1 – 244.1	18.6 - 28.6	262.7	260.80	NA	NA
32Z-01-07XOB	North of the building on southeast corner of former Tire Recycling Yard.	LTM water level only.	235.3 – 245.3	15.01 - 25.01	260.31	258.00	NA	NA
32Z-01-08XOB	Slightly northwest of the building.	LTM water level only.	236.8 – 246.8	14.53 - 24.53	261.33	258.80	NA	NA
32Z-01-09XOB	Western edge of parking lot near southwest corner of the building.	LTM water level only.	225.1 – 235.1	23.07 - 33.07	258.17	258.55	NA	NA
32Z-01-10XBR	In paved access road east of the building.	LTM water level only.	236.10 – 246.10	12.12 - 22.12	258.22	258.62	NA	NA
32Z-01-11XBR	In paved access road north of the building.	LTM water level only.	243.8 – 253.8	8.42 - 18.42	262.22	262.84	NA	NA
32Z-01-12XBR	In paved access road just north of truck bays on west side of the building.	LTM water level only.	220.9 – 230.9	27.78 - 37.78	258.63	259.08	NA	NA

Table 9
Main Post Monitoring Wells, Well Points, Piezometers and Surface Water Locations Selected for Long-Term Monitoring
Former Fort Devens Army Installation
Devens, Massachusetts

Monitoring Well/ Piezometer/ Surface Water ID	Location	Rationale	Screen Interval (feet NGVD)	Well Screen Intervals (feet-bgs)	Top of Casing Elevation (feet NGVD)	Ground Surface Elevation (feet NGVD)	Sample Pump Intake Depth (feet TOC)	Dedicated Bladder Pump (Yes/No)
AOCs 32 and 43A (Annual Sampling)								
SHL-15	North of the building on north edge of former Tire Recycling Yard.	LTM water level only.	234.0 – 244.0	16.3 - 26.3 (from metal casing)	260.30	259.00	NA	NA
SHL-25	Outside of perimeter fence on east side of the building; adjacent to well 32M-01-17XBR.	LTM water level only.	224.1 – 234.1	25.0 - 35.0 (from metal casing)	259.10	257.10	NA	NA
32M-01-13XBR	Between truck bays 33 and 34 on east side of the building.	Source area well.	235.4 – 245.4	13.25 - 23.25	258.65	259.07	22.30	YES
32M-01-14XOB	Outside of perimeter fence northeast of 32M-01-13XBR.	Downgradient well.	227.9 – 237.9	19.52 - 29.52	257.42	255.20	28.00	YES
32M-01-14XBR	Outside of perimeter fence northeast of 32M-01-13XBR.	LTM water level only.	211.1 – 221.1	35.81 - 45.81	256.91	255.10	43.81	YES
32M-01-15XBR	Southeast of 32M-01-13XBR in paved access road on east side of the building.	LTM water level only.	214.2 – 224.2	34.16 - 44.16	258.36	258.71	43.00	YES
32M-01-16XBR	Opposite from bay 20 on east side of the building.	LTM water level only.	227.5 – 237.5	20.79 - 30.79	258.29	258.52	29.00	YES
32M-01-17XBR	Just inside perimeter fence on east side of the building.	Downgradient well.	205.7 – 215.7	43.79 - 53.79	259.49	257.10	47.00	YES
32M-01-18XBR	Just east of the building at truck bay 29.	Source area well.	235.4 – 245.4	13.74 - 23.74	259.14	259.43	23.00	YES
43M-01-16XOB	Opposite door B5 on west side of the building.	LTM water level only.	223.9 – 233.9	23.75 - 33.75	257.65	257.92	NA	NA
43M-01-16XBR	Opposite door B5 on west side of the building.	LTM water level only.	200.3 – 210.3	47.27 - 57.27	257.57	257.84	NA	NA
43M-01-17XOB	Near door B4 on west side of the building.	LTM water level only.	225.9 – 235.9	22.97 - 32.97	258.87	259.37	NA	NA
43M-01-17XBR	Near door B4 on west side of the building.	LTM water level only.	201.8 – 211.8	47.25 - 57.25	259.05	259.34	NA	NA
43M-01-20XOB	Western edge of paved access road on west side of the building.	LTM water level only.	224.7 – 234.7	23.76 - 33.76	258.46	258.66	NA	NA
43M-01-20XBR	Western edge of paved access road on west side of the building.	LTM water level only.	180.4 – 190.4	67.71 - 77.71	258.11	258.66	NA	NA

Table 9
Main Post Monitoring Wells, Well Points, Piezometers and Surface Water Locations Selected for Long-Term Monitoring
Former Fort Devens Army Installation
Devens, Massachusetts

Monitoring Well/ Piezometer/ Surface Water ID	Location	Rationale	Screen Interval	Well Screen Intervals	Top of Casing Elevation	Ground Surface Elevation	Sample Pump Intake Depth	Dedicated Bladder Pump
			(feet NGVD)	(feet-bgs)	(feet NGVD)	(feet NGVD)	(feet TOC)	(Yes/No)
Devens Consolidation Landfill (Semi-Annual Sampling)								
LFM-99-01B	West edge of property between landfill and Queenstown St.	LTM water level only.	317.4 – 326.7	24.77 - 34.07	351.47	350.00	NA	NA
LFM-99-02B	Southwest edge of property near intersection of Queenstown St. and Patton Rd.	Monitor for changes in downgradient conditions.	328.8 – 338.1	16.53 - 25.83	354.63	352.63	21.92	NO
LFM-99-03B	Northern edge of property.	LTM water level only.	293 – 302.3	40.58 - 49.88	342.88	340.50	NA	NA
LFM-99-05A	Near northeast toe of landfill.	Monitor for changes in downgradient conditions.	287.4 – 296.7	20.68 - 29.98	317.38	315.68	25.93	NO
LFM-99-05B	Near northeast toe of landfill.	LTM water level only.	259.9 – 264.2	53.18 - 57.48	317.38	315.68	NA	NA
LFM-99-06ARP	East of landfill and south of LFM-03-07.	Monitor for changes in downgradient conditions.	297.7 – 307.0	10.09 - 19.39	317.09	315.00	15.46	NO
LFM-03-07	East of the landfill and south of the channel to the collection pond.	Monitor for changes in downgradient conditions.	293.0 – 303.0	10.90 - 20.90	313.9	312.00	18.95	NO

Notes:
NA = Not available
NGVD = National Geodetic Vertical Datum
bgs = below ground surface
TOC = top of casing

Table 10
AOC Specific Action Levels
Former Fort Devens Army Installation - Devens, MA

Chemical of Concern	MCP GW-1[1] (µg/L)	Background[2] (µg/L)	MCL [3] (µg/L)	Clean Up Goal [4] (µg/L)	Monitoring Criteria[4] (µg/L)
AOC 57 Area 3					
Arsenic	10	10.5	10	10	--
AOC 69W					
Arsenic	10	10.5	10	10	--
Iron	NS	9,100	NS	--	9,100
Manganese	NS	291	NS	--	291
EPH [5]					
C9-C18 Aliphatic Hydrocarbons	700	NS	NS	--	700
C19-C36 Aliphatic Hydrocarbons	14,000	NS	NS	--	14,000
C11-C22 Aromatic Hydrocarbons	200	NS	NS	--	200
AOC 43G					
Iron	NS	9,100	NS	9,100	--
Manganese	NS	291	NS	291	--
VOCs					
Benzene	5.0	ND	5.0	5.0	--
Toluene	1,000	ND	1,000	1,000	--
Ethylbenzene	700	ND	700	700	--
Xylenes (total)	10,000	ND	10,000	10,000	--
VPH [5]					
C5-C8 Aliphatic Hydrocarbons	300	NS	NS	--	300
C9-C12 Aliphatic Hydrocarbons	700	NS	NS	--	700
C9-C10 Aromatic Hydrocarbons	200	NS	NS	--	200
AOCs 32 and 43A					
Arsenic	10	10.5	10	10	--
Manganese	NS	3,500	NS	3,500	--
VOCs					
Vinyl Chloride	2.0	NS	2.0	2.0	--
1,2-dichloroethene (trans)	100	NS	100	100	--
1,2-dichloroethene (cis)	55	NS	70	55	--
1,1,1-trichloroethane	200	NS	200	--	5.0
Trichloroethene	5.0	NS	5.0	5.0	--
1,2-dichlorobenzene	600	NS	600	600	--
1,3-dichlorobenzene	100	NS	NS	600	--
1,4-dichlorobenzene	5.0	NS	75	5.0	--
VPH [5]					
Benzene	5.0	NS	5.0	--	5.0
Ethylbenzene	700	NS	700	--	700
Xylenes, total	10,000	NS	10,000	--	10,000
Toluene	1,000	NS	1,000	--	1,000
C5-C8 Aliphatic Hydrocarbons	300	NS	NS	--	300
C9-C12 Aliphatic Hydrocarbons	700	NS	NS	--	700
C9-C10 Aromatic Hydrocarbons	200	NS	NS	--	200
EPH [5]					
C9-C18 Aliphatic Hydrocarbons	700	NS	NS	--	700
C19-C36 Aliphatic Hydrocarbons	14,000	NS	NS	--	5,000
C11-C22 Aromatic Hydrocarbons	200	NS	NS	--	200

Table 10
AOC Specific Action Levels
Former Fort Devens Army Installation - Devens, MA

Chemical of Concern	MCP GW-1[1] (µg/L)	Background[2] (µg/L)	MCL [3] (µg/L)	Clean Up Goal [4] (µg/L)	Monitoring Criteria[4] (µg/L)
DCL					
***VPH*[5]**					
C5-C8 Aliphatic Hydrocarbons	300	NS	NS	--	300
C9-C12 Aliphatic Hydrocarbons	700	NS	NS	--	700
C9-C10 Aromatic Hydrocarbons	200	NS	NS	--	200
Methyl tert-butyl ether	70	NS	NS	--	70
Benzene	5.0	NS	5.0	--	5.0
Toluene	1,000	NS	1,000	--	1,000
Ethylbenzene	700	NS	700	--	700
Xylenes, total	10,000	NS	10,000	--	10,000
Naphthalene	140	NS	NS	--	140
***EPH*[5]**					
C9-C18 Aliphatic Hydrocarbons	700	NS	NS	--	700
C19-C36 Aliphatic Hydrocarbons	5,000	NS	NS	--	5,000
C11-C22 Aromatic Hydrocarbons	200	NS	NS	--	200
Target PAH Analytes					
2-Methylnaphthalene	10	NS	NS	--	10
Acenaphthene	20	NS	NS	--	20
Acenaphthylene	30	NS	NS	--	30
Anthracene	60	NS	NS	--	60
Benzo(a)anthracene	1.0	NS	NS	--	1.0
Benzo(a)pyrene	0.20	NS	0.2	--	0.2
Benzo(b)fluoranthene	1.0	NS	NS	--	1.0
Benzo(g,h,i)perylene	50	NS	NS	--	50
Benzo(k)fluoranthene	1.0	NS	NS	--	1.0
Chrysene	2.0	NS	NS	--	2.0
Dibenzo(a,h)anthracene	0.50	NS	NS	--	0.50
Fluoranthene	90	NS	NS	--	90
Fluorene	30	NS	NS	--	30
Indeno(1,2,3-cd)pyrene	0.50	NS	NS	--	0.50
Naphthalene	140	NS	NS	--	140
Phenanthrene	40	NS	NS	--	40
Pyrene	60	NS	NS	--	60
Pesticides					
Hexachlorobenzene	1.0	NS	1.0	--	1.0
4,4'-DDD	0.20	NS	NS	--	0.20
4,4'-DDE	0.05	NS	NS	--	0.05
4,4'-DDT	0.30	NS	NS	--	0.3
Aldrin	0.50	NS	NS	--	0.5
alpha-BHC	500	NS	NS	--	500
beta-BHC	2.0	NS	NS	--	2.0
delta-BHC	100	NS	NS	--	100
Dieldrin	0.10	NS	NS	--	0.10
Endosulfan	10	NS	NS	--	10
Endrin	2.0	NS	2.0	--	2.0
Gamma-BHC (Lindane)	0.20	NS	0.20	--	0.20
Heptachlor	0.40	NS	0.40	--	0.40
Heptachlor epoxide	0.20	NS	0.20	--	0.20

Table 10
AOC Specific Action Levels
Former Fort Devens Army Installation - Devens, MA

Chemical of Concern	MCP GW-1[1] (µg/L)	Background[2] (µg/L)	MCL [3] (µg/L)	Clean Up Goal [4] (µg/L)	Monitoring Criteria[4] (µg/L)
Methoxychlor	40	NS	40	--	40
Total Chlordane	2.0	NS	2.0	--	2.0
Toxaphene	100	NS	3.0	--	100
Metals					
Arsenic	10	NS	10	--	10
Barium	2,000	NS	2,000	--	2,000
Cadmium	5.0	NS	5.0	--	5.0
Chromium	100	NS	100	--	100
Copper	NS	NS	1,300	--	1,300
Iron	NS	NS	NS	--	--
Lead	15	NS	15	--	15
Manganese	NS	NS	NS	--	--
Silver	100	NS	NS	--	100
Selenium	50	NS	50	--	50
Mercury	2.0	NS	2.0	--	2.0
Wet Chemistry					
Solids, Total Dissolved	NS	NS	NS	--	500,000
Anions					
Chloride	NS	NS	NS	--	250,000
Sulfate	NS	NS	NS	--	250,000
Nitrate/Nitrite					
Nitrate/Nitrite (as N)	NS	NS	10,000	--	10,000
Alkalinity, Total					
As CaCO3	NS	NS	NS	NS	NS
Cyanide					
Cyanide, total	200	NS	200	--	200
COD					
Chemical Oxygen Demand	NS	NS	NS	NS	NS

Notes:

[1]MassDEP MCL GW-1 Standards: 310.CMR 40.0000, 2014.

[2]Background concentrations determined from selected locations in each AOC.

[3]Drinking Water Standards and Health Advisories", Spring 2012, USEPA Office of Water.

4Clean up goals were established by respecitve AOC RODs; Monitoirng Criteria are used if the ROD did not include cleanup goals for listed analytes.

[5]EPH and VPH concentrations are evaluated against MCP standards for comparison purposes, but the standards are not considered cleanup goals under the ROD.

NS = No standard.

MCL = Maximum Contaminant Level.

Table 11
DCL Leachate Discharge Permit No.17 Limits
Main Post - Former Fort Devens Army Installation - Devens, Massachusetts

Analytical Fraction	Parameter	Discharge Limitation (mg/L)*
Metals Composite	Aluminum	NA
	Arsenic	0.20
	Chromium (total)	0.40
	Cadmium	0.045
	Copper	0.75
	Lead	0.20
	Nickel	0.60
	Silver	0.30
	Zinc	0.70
	Mercury	0.001
Cyanide	Cyanide (Total)	NL
TSS	Total Suspended Solids	400
TTO	Total Toxic Organics	5.0
TPH	Total Petroleum Hydrocarbons	NL
pH	pH (units)	5.5 - 9.5
Heptachlor-Pesticide		NL
Phenolics		NL

Notes:
* = Discharge Limit from Industrial Wastewater Permit No. 17
mg/L = milligrams per liter
NA = Not applicable
NL = No limit; for monitoring purposes only
TTO = Total Organics (Sum of VOC's, SVOC's, Pesticides and PCB's)
VOCs = Volatile Organic Compounds
SVOCs = Semi Volatile Organic Compounds
PCBs = Polychlorinated Biphenyls

Table 12
AOC 57 Area 3 Groundwater Analytical Results - June 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

			GW Cleanup Goal[1]	Background[2]	57M 95-03X_SPR16	Q	57M 96-11X_SPR16	Q	DUP-1 (57M-96-11X)	Q
Method	**Analyte**	**Units**			**06/09/2016**		**06/09/2016**		**06/09/2016**	
Metals	Arsenic, Total	µg/L	10	10.5	**31**		**290**		**290**	
	Arsenic, Dissolved	µg/L	10	10.5	**25**		**130**		**130**	
Metals	Iron, Total	µg/L	NS	9,100	**4,700**		***32,000***		***32,000***	
	Iron, Dissolved	µg/L	NS	9,100	**4,500**		***29,000***		***28,000***	
	Manganese, Total	µg/L	NS	291	**130**		***2,800***		***2,800***	
	Manganese,	µg/L	NS	291	**140**		***2,800***		***2,800***	
Field Parameters	Temperature	°C	NS	NS	10.59		11.21		--	
	ORP	mV	NS	NS	-33.6		-14.5		--	
	pH	Std	NS	NS	6.61		6.49		--	
	Specific	µS/cm	NS	NS	414		371		--	
	Dissolved Oxygen	mg/L	NS	NS	2.68		0.81		--	
	Turbidity	NTU	NS	NS	7.55		24.0		--	

Notes:

NS No standard

10.0 = Cleanup goal exceedance

5.0 = Detected result above background

[1] Cleanup Goal for arsenic is the MCL standard.

[2] From the RI.

Table 13
AOC 57 Area 3 Surface Water Analytical Results - June 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

			Surface Water Benchmark[1]	57-AREA3-SW1_SPR16	Q
Method	**Analyte**	**Units**		**06/09/2016**	
Metals	Arsenic, Total	µg/L	150	**23.0**	
	Arsenic, Dissolved	µg/L	150	**8.1**	
Metals	Iron, Total	µg/L	1,000	**19,000**	
	Iron, Dissolved	µg/L	1,000	**6,500**	
	Manganese, Total	µg/L	NS	**1,400**	
	Manganese, Dissolved	µg/L	NS	**1,300**	
Field Parameters	Temperature	°C		--	
	ORP	mV		--	
	pH	Std		--	
	Specific Conductance	µS/cm		--	
	Dissolved Oxygen	mg/L		--	
	Turbidity	NTU		--	

Notes:
NS No standard
10.0 = Benchmark exceedance
[1] Water Quality Criteria for Surface Water

Table 14
Main Post - Area of Contamination 57/Area 3 - 2003 to 2016
Exceedances Over Time
Former Fort Devens Army Installation, Devens, MA

GROUNDWATER												
Well Number	**Fall 2003**	**Spring 2004**	**Fall 2004**	**Spring 2005**	**Fall 2005**	**Spring 2006**	**Fall 2006**	**Spring 2007**	**Fall 2007**	**Spring 2008**	**Spring 2009**	**Spring 2010**
Arsenic (Total) 10 µg/L Cleanup Goal												
57M 95 03X (AREA 3)	36	44	230	25	13.6	(7.0)	49	(4.8)	51	23	21	23
57M 96 11X (AREA 3)	270	240	120	161	215	163	171	166	193	160	163	148
1,4 Dichlorobenzene 5 µg/L Cleanup Goal												
57M 95 03X (AREA 3)	(1.4)	(2.2)	13	(0.5)	(0.8)	(1.4)	(4.5)	(1.4)	13	(0.9)	(2.4 J)	(1.4 J)
57M 96 11X (AREA 3)	(3.4)	(3.8)	(2.4)	(3.3)	(1.4)	(3.7)	(2.4)	(4.4)	(1.6)	5.1	7.5	(2.1 J)
SURFACE WATER												
Arsenic 150 µg/L Water Quality Criteria												
57 AREA 3 SW 1 (AREA 3)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Iron 1,000 µg/L Water Quality Criteria												
57 AREA 3 SW 1 (AREA 3)	NC	NC	NC	NC	NC	(600)	4,500	(520)	7,100	6,800	2500	(240)
Lead 2.5 µg/L Water Quality Criteria												
57 AREA 3 SW 1 (AREA 3)	34	ND	(0.81)	3.4	ND	(2.3)	ND	(1.8)	14	NC	NC	NC

Notes:

Number in parentheses denotes that the concentration is below the cleanup goal.
NC = Not collected
ND = Not detected

Table 14
Main Post - Area of Contamination 57/Area 3 - 2003 to 2016
Exceedances Over Time
Former Fort Devens Army Installation, Devens, MA

GROUNDWATER						
Well Number	**Spring 2011**	**Spring 2012**	**Spring 2013**	**Spring 2014**	**Spring 2015**	**Spring 2016**
Arsenic (Total) 10 µg/L Cleanup Goal						
57M 95 03X (AREA 3)	58	36	60	60	37.5	31
57M 96 11X (AREA 3)	190	192	181	160	284	290
1,4 Dichlorobenzene 5 µg/L Cleanup Goal						
57M 95 03X (AREA 3)	5.1	(2.4 J)	(3.13)	(3.27)	NC	NC
57M 96 11X (AREA 3)	(2.3 J)	(0.92 J)	(1.05 J)	(1.22)	NC	NC
SURFACE WATER						
Arsenic 150 µg/L Water Quality Criteria						
57 AREA 3 SW 1 (AREA 3)	NC	NC	NC	NC	(9.90)	(23)
Iron 1,000 µg/L Water Quality Criteria						
57 AREA 3 SW 1 (AREA 3)	20,000	8,300	10,000	10,000	4,140	19,000
Lead 2.5 µg/L Water Quality Criteria						
57 AREA 3 SW 1 (AREA 3)	NC	NC	NC	NC	ND	ND

Notes:

Number in parentheses denotes that the concentration is below the cleanup goal.
NC = Not collected
ND = Not detected

Table 15
AOC 69W Groundwater Analytical Results - October 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Method	Analyte	Units	Monitoring Criteria[1]	Background[2]	69W 94 13	Q	69W 94 14	Q	ZWM 95 15X	Q	ZWM-95-18X	Q	ZWM 99 22X	Q	ZWM 99 22X (69W DUP1)	Q
					10/25/2016		10/25/2016		10/25/2016		10/26/2016		10/25/2016		10/25/2016	
Metals (SW6010B)	Arsenic (dissolved)	µg/L	10	10.5	**76**		3.0	U	3.7		3.0	U	**150**		**140**	
	Iron (dissolved)	µg/L	NS	9,100	***11,000***		87		180		50	U	***18,000***		***18,000***	
	Manganese (dissolved)	µg/L	375	291	**2,600**		27		17		12		**960**		**980**	
EPH[3] (MADEP)	C9-C18 Aliphatics	µg/L	700	NS	**1,100**		110	U	220	J	100	U	100	U	94	U
	C19-C36 Aliphatics	µg/L	14,000	NS	160		110	U	120	J	100	U	100	U	94	U
	C11-C22 Aromatics	µg/L	200	NS	**410**		110	U	100	J	**240**		**210**		84	J
Field	Temperature	°Celsius	NS	NS	14.47		13.12		11.69		11.19		15.81		--	
	pH	Std units	NS	NS	7.9		7.11		7.46		6.09		7.79		--	
	Specific Conductance	µS/cm	NS	NS	1342		706		86		715		613		--	
	ORP/Eh	mV	NS	NS	-103.7		-86.7		-87.3		-47.8		-143.7		--	
	Dissolved Oxygen	mg/L	NS	NS	1.79		3.07		2.07		5.74		0.94		--	
	Turbidity	NTU	NS	NS	5.96		13.7		13.2		2.39		5.3		--	

Notes:

0.333 = Exceedance of Monitoring Criteria

0.716 = Detected result above Background

NS = No standard

U = Non-detect

J = Estimated result

NA = Not analyzed

[1] The monitoring criteria for arsenic is the MCL.

[2] The benchmark for iron and manganese are background levels.

[3] EPH concentrations are evaluated against MCP standards for comparison purposes.

Table 15
AOC 69W Groundwater Analytical Results - October 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Method	Analyte	Units	Monitoring Criteria[1]	Background[2]	ZWM 99 23X	Q	ZWM 99 24X	Q	ZWM 01 25X	Q	69WP-08-01	Q	69WP-13-01	Q
					10/25/2016		10/25/2016		10/25/2016		10/26/2016		10/26/2016	
Metals (SW6010B)	Arsenic (dissolved)	µg/L	10	10.5	7.7		3.0	U	3.0	U	3.0	U	NA	
	Iron (dissolved)	µg/L	NS	9,100	1,500		41		50	U	7,100		NA	
	Manganese (dissolved)	µg/L	375	291	**590**		2.9	J	78		78.4		140	
EPH[3] (MADEP)	C9-C18 Aliphatics	µg/L	700	NS	110	U	96	U	94	U	NA		NA	
	C19-C36 Aliphatics	µg/L	14,000	NS	110	U	96	U	94	U	NA		NA	
	C11-C22 Aromatics	µg/L	200	NS	110		52	J	94	U	NA		NA	
Field	Temperature	°Celsius	NS	NS	13.43		12.34		13.47		10.7		8.73	
	pH	Std units	NS	NS	8.82		8.62		7.41		6.79		6.72	
	Specific Conductance	µS/cm	NS	NS	702		418		817		657		468	
	ORP/Eh	mV	NS	NS	-110.3		-79.0		-77.1		-100.3		-254.6	
	Dissolved Oxygen	mg/L	NS	NS	2.14		4.84		5.37		0.76		0.55	
	Turbidity	NTU	NS	NS	4.89		3.18		10.21		48.2		6.97	

Notes:

0.333 = Exceedance of Monitoring Criteria

0.716 = Detected result above Background

NS = No standard

U = Non-detect

J = Estimated result

NA = Not analyzed

[1] The monitoring criteria for arsenic is the MCL.

[2] The benchmark for iron and manganese are background levels.

[3] EPH concentrations are evaluated against MCP standards for comparison purposes.

Table 16
AOC 69W Exceedances Over Time - 2000 to 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Well Number	Spring 2000	Fall 2000	Spring 2001	Fall 2001	Spring 2002	Fall 2002	Spring 2003	Fall 2003	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2007	Fall 2008	Fall 2009
Arsenic, dissolved 10 µg/L MCL																
69W 94 13	54	110	85	150	52	130	35	69	27	88	56	60	69	142	73	86
ZWM 95 15X	ND	(7.9)	ND	22	36	40	ND	16	(7.7)	30	ND	ND	ND	16	ND	ND
ZWM 99 22X	150	130	230	140	86	140	150	160	140	140	120	120	159	244	223	408
ZWM 99 23X	23	70	67	55	15	ND	27	ND	44	61	46	47	56	56	52	62
ZWM 01 25X	NA	NA	NA	(4.1 J)	ND	ND	(2.3 J)	ND	ND	(3.4 J)	ND	ND	(3 J)	(5)	(2.3 J)	(2 J)
Manganese, dissolved 291 µg/l Background																
69WP 08 01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	(174)	(89)
69W 94 13	2,300	1,700	1,500	1,600	2,100	2,400	2,800	4,100	2,500	1,300	3,000	1,600	2,600	1,120	1,940	2,110
ZWM 95 15X	(28)	1,300	(25)	(100)	1,500	2,200	1,600	970	4,600	980	850	(130)	860	1,230	438	502
ZWM 99 22X	2,000	1,800	2,300	2,400	2,000	1,500	2,700	2,300	3,100	1,900	3,400	3,200	3,700	3,120	3,790	2,660
ZWM 99 23X	4,200	3,600	5,800	1,500	550	1,700	5,300	4,300	2,500	2,300	5,200	2,500	2,700	1,320	2,500	3,080
ZWM 01 25X	NA	NA	NA	(280)	(61)	1,000	(89)	(230)	(140)	(300)	(140)	490	1,400	3,210	1,320	5,830
EPH C^{11} C^{12} Aromatics 200 µg/l Monitoring Criteria																
69W 94 13	690	1,400	720	790	1,900	290	ND	(160)	ND	(110)	ND	ND	209	311	(152)	225
ZWM 95 15X	ND	ND	ND	ND	1,400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
ZWM 99 22X	2,500	1,400	2,100	370	620	210	380	330	270	400	320	280	627	(166)	356	276
ZWM 99 23X	(170)	520	200	(140)	(140)	ND	ND	ND	ND	ND	ND	ND	(174)	(107)	(80)	ND
VPH C^{9} C^{10} Aromatics 200 µg/l Monitoring Criteria																
69W 94 13	(120)	270	(160)	320	(150)	200	(62)	(140)	(130)	230	(110)	(140)	(84)	(144)	(81)	(105)
ZWM 99 22X	620	(150)	550	(83)	(88)	(150)	840	450	650	600	460	460	330	(113)	217	(120)
ZWM 99 23X	(46)	(62)	(40)	(34)	ND	ND	(53)	(59)	ND	ND	(100)	ND	ND	ND	(28)	(35.2)

Notes:

ND = Not detected

NA = Not analyzed

NC = Not collected

The number in parentheses denotes a value less than the monitoring criteria.

EPH/VPH concentrations are evaluated against MCP standards for comparison purposes.

Table 16
AOC 69W Exceedances Over Time - 2000 to 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Well Number	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016
Arsenic, dissolved - 10 µg/L MCL							
69W 94 13	127	120	115	73	101	120	76
ZWM 95 15X	13	41	23	17	30.2	19.3	(3.7)
ZWM 99 22X	343	367	299	233 J	172	125	150
ZWM 99 23X	15	60	29	27	19.5	13.9	(7.7)
ZWM 01 25X	ND	13	19	(5)	ND	ND	ND
Manganese, dissolved - 291 µg/L Background							
69WP 08 01	(78)	2,190	904	(237)	(64.5)	(78.4)	(79)
69W 94 13	1,360	1,840	1,400	1,730	1,940	2,050	2,600
ZWM 95 15X	1,120	1,010	1,580	1,280	900	843	(17)
ZWM 99 22X	1,750	2,160	1,120	998	1,280	1,440	960
ZWM 99 23X	523	1,720	500	556	533	749	590
ZWM 01 25X	1,490	2,820	2,540	1,570	435	859	(78)
EPH C^{11} C^{12} Aromatics 200 µg/l Monitoring Criteria							
69W 94 13	339	242	379	227	252	(175)	410
ZWM 95 15X	ND	ND	ND	ND	ND	ND	(100)
ZWM 99 22X	209	327	308	286	332	354	210
ZWM 99 23X	ND	ND	ND	ND	ND	ND	(110)
VPH C^{9} C^{10} Aromatics 200 µg/l Monitoring Criteria							
69W 94 13	(142)	(66.7)	(63 J)	(87.6)	NC	NC	NC
ZWM 99 22X	(76.4)	(114)	(55.5 J)	(119)	NC	NC	NC
ZWM 99 23X	ND	ND	ND	ND	NC	NC	NC

Notes:
ND = Not detected
NA = Not analyzed
NC = Not collected

The number in parentheses denotes a value less than the monitoring criteria.
EPH/VPH concentrations are evaluated against MCP standards for comparison purposes.

Table 17
Main Post - Area of Contamination 43G
Groundwater Analytical Results - Fall 2016
Former Fort Devens Army Installation - Devens, MA

Method	Analyte	Units	Cleanup Goal[1]	Background[2]	XGM 94 04X	Q	AAFES-2	Q	XGM 93-02X	Q	XGM 97 12X	Q	43G-DUP1 (XGM 97 12X) Duplicate	Q	AAFES-7	Q
					10/14/2016		10/14/2016		10/17/2016		10/17/2016		10/17/2016		10/17/2016	
Metals	Iron, Total	µg/L	9,100	9,100	1,600	J	**11,000**		6,000		**25,000**		**25,000**		180	
	Manganese, Total	µg/L	375	291	**1,500**	J	**2,800**		**1,400**		**1,700**		**1,600**		**510**	
VPH (MADEP)	C5 C8 Aliphatics[3]	µg/L	300	NS	**480**		**850**		**94**	J	**420**		**420**		NA	
	C9 C10 Aromatics[3]	µg/L	200	NS	**320**		**730**		100	U	**340**		**370**		NA	
	C9 C12 Aliphatics[3]	µg/L	700	NS	**120**		**430**		**56**	J	**230**		**220**		NA	
	Benzene	µg/L	5.0	NS	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	NA	
	Ethylbenzene	µg/L	700	NS	**22**		**22**		5.0	U	**23**		**23**		NA	
	m,p Xylene	µg/L	10,000	NS	**3.6**	**J**	**11.0**		10.0	U	10.0	U	10.0	U	NA	
	o Xylene	µg/L	10,000	NS	**1.7**	**J**	**1.9**	**J**	5.0	U	5.0	U	5.0	U	NA	
	Toluene	µg/L	1,000	NS	5.0	U	**0.44**	**J**	5.0	U	5.0	U	5.0	U	NA	
Alkalinity (SM2320B)	Alkalinity, Total	mg/L	NS	NS	**170**		**140**		**160**		**140**		**150**		NA	
Field Parameters	Temperature	°Celsius	NS	NS	13.01		11.75		12.96		13.40		NA		13.62	
	pH	units	NS	NS	7.11		7.23		6.75		6.79		NA		6.52	
	Specific Conductance	µS/cm	NS	NS	972		994		1,247		1,419		NA		1,157	
	ORP	mV	NS	NS	24.3		-79.9		15.6		-39.3		NA		66.8	
	Dissolved Oxygen	mg/L	NS	NS	1.23		0.48		0.56		0.20		NA		3.28	
	Turbidity	NTU	NS	NS	3.97		9.68		10.94		5.18		NA		9.58	

Notes:

0.333 = Exceedance

µg/L = microgram per liter

mg/L = milligram per liter

NS = No Standard

J = Estimated result

U = Non-detect

NA = Not analyzed

[1] The cleanup values were developed in the ROD (unless otherwise noted).

[2] Cleanup goals for iron and manganese are background levels.

[3] VPH carbon ranges are evaluated aginst MCP standards for comparison purposes.

Table 18
AOC 43G Exceedances Over Time - 1999 to 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Well ID	12/99	11/00	11/01	11/02	11/03	10/04	10/05	10/06	10/07	10/08	11/09	10/10	10/11	10/12	10/13	10/14	10/15	10/16
Benzene 5 µg/L Cleanup Goal																		
AAFES 2	62	36	43	26	9.0	6.6	6.1	(1.3)	ND	ND	(3.93 J)	ND	ND	6.60 J	5.04	(3.7)	(4.2)	3.0 U
XGM 93 02X	81	32	12	140	24	39	29	18.5	8.8	(2.6)	(0.997 J)	ND	ND	ND	ND	(0.77 J)	3.0 U	3.0 U
XGM 97 12X	270	550	700	780	290	260	35.6	129	22.8	13.7 J	27.4J	ND	13.8	(3.03 J)	(3.87)	(1.5)	(3.8)	3.0 U
Toluene 1,000 µg/L Cleanup Goal																		
XGM 97 12X	(390)	1,100	(870)	1,000	(610)	(460)	(53.4)	(239)	(15.9)	(11.4 J)	(5.3 J)	ND	ND	ND	(2.54)	ND	(7.4)	5.0 U
Iron, total 9,100 µg/L Background																		
AAFES 2	24,000	20,000	27,000	26,000	14,000	20,000	21,900	12,000	20,000	18,000	16,000	14,000	22,000	18,000	19,000	19,400	14,400	11,000
AAFES 6/6R	11,000	9,200	13,000	9,400	NC	NC	NC	11,000	11,000	(6,500)	(4,300)	(3,300)	(1,100)	(6,900)	9,200	(8,240)	NC	NC
XGM 93 02X	30,000	18,000	11,000	24,000	15,000	28,000	11,500	13,000	(5,800)	11,000	(8,500)	11,000	12,000	(6,000)	10,000	9,580	13,200	(6,000)
XGM 94 07X	(3,500)	(2,900)	(5,800)	(2,300)	(1,000)	(300)	(1,610)	(1,400)	(4,500)	9,300	(8,800)	12,000	13,000	23,000	10,000	(6,820)	NC	NC
XGM 94 08X	(4,800)	13,000	(4,500)	(4,600)	(3,200)	(2,500)	(4,520)	(6,100)	(4,600)	(2,200)	(1,300)	(1,000)	(750)	(2,300)	(910)	(147)	NC	NC
XGM 97 12X	32,000	26,000	33,000	46,000	33,000	32,000	20,100	18,000	22,000	25,000	25,000	16,000	27,000	20,000	24,000	25,800	34,300	25,000
Manganese, total 291 µg/L Background																		
AAFES 2	4,600	3,900	4,800	3,700	3,100	4,000	3,590	2,700	3,790	3,600	3,320	2,490	3,700	3,100	3,270	3,460	2,740	2,800
AAFES 5	710	180*	(190)	(27)	(21)	(89)	(118)	(50)	(34)	ND	ND	(244)	(36)	(206)	(127)	(32.5)	NC	NC
AAFES 6/6R	2,900	9,200	3,400	3,000	NC	NC	NC	2,900	3,090	3,630	907	1,670	1,830	3,220	2,820	3,000	NC	NC
AAFES 7	NC	NC	NC	NC	NC	NC	NC	NC	NC	(106)/ND	(81)	(79)	(5 J)	706	2,390	1,640	(139)	510
XGM 93 02X	3,900	2,500	1,900	2,500	1,900	2,600	1,450	2,000	1,800	1,420	1,630	737	3,020	612	1,180	1,570	2,020	1,400
XGM 94 04X	2,900	2,200	3,400	2,000	1,400	1,400	1,580	1,100	559	(68)	2,730	6,490	2,140	2,580	2,730	1,510	1,090	1,500
XGM 94 07X	5,700	3,700	6,100	4,500	3,600	1,000	6,120	5,100	4,120	5,100	4,990	3,870	6,060	5,560	5,380	6,940	NC	NC
XGM 94 08X	4,500	4,600	4,900	3,600	3,600	3,800	7,260	4,200	3,380	3,100	2,150	2,070	2,780	4,620	2,300	3,210	NC	NC
XGM 97 12X	6,300	4,100	4,200	3,900	4,100	3,000	437	1,800	2,070	3,060	2,390	2,110	3,540	1,640	1,680	2,080	3,460	1,700
C_5 C_8 Aliphatics 300 µg/L VPH Standards [1]																		
AAFES 2	ND	1400	ND	1,200	1,200	ND	2,070	1,430	1,400	ND	ND	859	1,270	1,560 J	1,390	1,250	728	850
AAFES 6/6R	370	420	(290)	ND	NC	NC	NC	(305)	ND	ND	ND	(114)	ND	(215)	(287)	(188)	NC	NC
XGM 93 02X	ND	570	(270)	790	410	ND	788	519	ND	ND	ND	(124)	ND	ND	(65)	(268)	(101)	(94)
XGM 94 04X	ND	420	(140)	ND	ND	ND	ND	ND	ND	ND	ND	533	765	497 J	1,140	(186)	(65)	480
XGM 97 12X	970	1,300	1,100	1,100	1,100	ND	2,370	1,740	1,230	ND2	4,050	644	367	507 J	494	(272)	515	420
C_9 C_{12} Aliphatics 700 µg/L VPH Standards [1]																		
AAFES 2	ND	(81)	ND	(200)	ND	(57)	5,220	987	1,000	1,020	950	768	1,080	(542 J)	1,650	(688)	(85.7)	(430)
XGM 93 02X	ND	(39)	ND	(58)	(33)	(34)	1,570	(268)	(94)	(182)	(55.5)	ND	(85.1)	ND	(100)	(76.6)	50 U	(56.0)
XGM 97 12X	96	ND	ND	(130)	ND	(90)	7,310	1,340	1,080	2,210	1,450	922	(535)	(275 J)	724	(162)	718	(230)
C_9 C_{10} Aromatics 200 µg/L VPH Standards [1]																		
AAFES 2	9,400	7,200	5,300	13,000	6,600	6,700	3,130	3,710	2,420	2,120	2,660	1,870	1,050	1,090	1,940	1,090	827	730
XGM 93 02X	510	2,300	1,100	3,600	1,600	3,700	918	766	228	325	(110)	(73.4)	ND	ND	ND	(113)	(62.3)	100 U
XGM 94 04X	200	570	(170)	(28)	ND	ND	ND	ND	ND	ND	ND	243	469	300 J	769	(76.8)	50 U	320
XGM 97 12X	4,500	5,500	5,400	7,500	8,700	7,400	3,810	4,010	4,220	5,260	4,110	2,470 J	463	367 J	840	253	1,560	340

Notes:
Number in parentheses indicates concentrations below cleanup goal or VPH Standard.
[1] VPH carbon ranges are evaluated aginst MCP standards for comparison purposes.

ND/U = Non-detect
NC = Not collected
J = Estimated result

Table 19
AOCs 32/43A Groundwater Analytical Results - June 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

			Cleanup Goal [1]	Monitoring Criteria	32M 01 13XBR_ SPR16	Q	32M 01 14XOB _SPR16	Q	32M 01 17XBR _SPR16	Q	32M-DUP-1 (32M 01 17XBR)	Q	32M 01 18XBR _SPR16	Q
Method	**Analyte**	**Units**			06/10/2016		06/10/2016		06/10/2016		06/10/2016		06/10/2016	
SW6010C	Arsenic, Dissolved	µg/L	10	--	3.0	U	**13**		3.0	U	3.0	U	**2.8**	J
SW6020A	Manganese, Dissolved	µg/L	3,500	--	3.0	U	**1,800**		3.0	U	3.0	U	**1,100**	
VOCs (SW8260B)	1,1,1 Trichloroethane	µg/L	5.0 [2]	--	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	1,1,2 Trichloroethane	µg/L	--	5.0	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	1,2 Dichlorobenzene	µg/L	600	--	1.0	U	**0.75**	J	1.0	U	1.0	U	**340**	
	1,3 Dichlorobenzene	µg/L	100	--	1.0	U	1.0	U	1.0	U	1.0	U	**58.0**	
	1,4 Dichlorobenzene	µg/L	5.0	--	1.0	U	1.0	U	1.0	U	1.0	U	**38**	
	cis 1,2 Dichloroethene	µg/L	55	--	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	trans 1,2 Dichloroethene	µg/L	100	--	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	Benzene	µg/L	--	5.0	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	Chlorobenzene	µg/L	--	100	1.0	U	1.0	U	1.0	U	1.0	U	**81.0**	
	Ethylbenzene	µg/L	--	700	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	Tetrachloroethene	µg/L	5.0	--	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	Toluene	µg/L	1,000	--	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	Trichlorethene	µg/L	5.0	--	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
	Vinyl Chloride	µg/L	--	2.0	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U
VPH (MADEP)[3]	C5 C8 Aliphatics	µg/L	--	300	100	U	100	U	100	U	100	U	100	U
	C9 C10 Aromatics	µg/L	--	200	100	U	100	U	100	U	100	U	**450**	
	C9 C12 Aliphatics	µg/L	--	700	100	U	100	U	100	U	100	U	**190**	J
	Benzene	µg/L	--	5.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
	Ethylbenzene	µg/L	--	700	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	Toluene	µg/L	--	1,000	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
	m,p Xylene[4]	µg/L	--		10.0	U	10.0	U	10.0	U	10.0	U	10.0	U
	o Xylene[4]	µg/L	--		5.0	U	5.0	U	5.0	U	**0.66**	J	5.0	U
Field Parameters	Temperature	°Celsius	NS		14.29		12.95		12.97		NA		15.29	
	pH	pH	NS		6.41		5.92		7.18		NA		6.90	
	Specific Conductance	us/cm	NS		678		441		751		NA		669	
	ORP	mV	NS		119.1		62.4		200.1		NA		162.7	
	Dissolved Oxygen	mg/L	NS		5.73		0.93		1.36		NA		5.31	
	Turbidity	NTU	NS		6.43		3.79		0.01		NA		12.9	

Notes:

0.333 = Exceedance

NS = No standard

[1] The cleanup goal for arsenic is the MCL; the cleanup goal for manganese is the background level.

µg/L = microgram per liter

[2] The site-specific cleanup goal is lower than the groundwater standard.

U = Non-detect

[3] VPH carbon range concentrations are evaluated against MassDEP standards for comparison purposes.

J = Estimated Result

[4] The monitoring criteria for total xylenes is 10,000 µg/L.

NA = not analyzed

Table 20
AOCs 32/43A Exceedances Over Time - 2006 to 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Well Number	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012
Arsenic (Total) 10 µg/L Cleanup Goal														
32M 01 18XBR (Source well)	**30**	**15**	**51**	3.1 J	**38**	**34**	**51**	**18**	**18**	3.5 J	3.0 J	5.0	5.0	4.0 J
32M 01 14XBR (Sentry well)	5 U	5 U	5 U	5 U	5 U	NS	5 U	NS	5 U	NS	5 U	NS	5 U	NS
32M 01 14XOB (Sentry well)	**59**	**49**	**45**	**69**	**50**	**70**	**66**	NS	**43**	NS	**62**	NS	**80**	NS
32M 01 15XBR	5 U	5 U	5 U	5 U	5 U	5 U	**180**	NS	9.0	2.9 J	5 U	3.0 J	2.0 J	5 U
32M 01 17XBR	2.8 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
32Z 99 02X (Distant sentry well)	5 U	5 U	2.1 J	3.2 J	5 U	NS	5 U	NS	5 U	NS	5 U	NS	5 U	NS
SHL 15	9.0	**11**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese (Total) - 3,500 µg/L Background														
32M 01 18XBR (Source well)	**18,000**	**16,000**	**18,200**	**10,200**	**14,800**	**18,900**	**29,400**	**6,970**	2,360	**4,510**	2,300	1,150	**4,100**	1,540
32M 01 14XOB (Sentry well)	2,800	3,200	1,500	3,420	2,760	**5,050**	**3,660**	NS	2,460	NS	1,740	NS	1,950	NS
1,4 Dichlorobenzene 5 µg/L Cleanup Goal														
32M 01 18XBR (Source well)	**490**	**210 J**	**550**	**67**	**270**	**390**	**180**	**100**	**26**	**62**	**50**	**37**	**69**	**42**
32M 01 15XBR	2.5 U	**5.5**	0.78 J	**5.1 J**	**7.9**	**5.7 J**	2.5 U	2.5 UJ	0.55 J	2.5 U	2.5 U	2.5 U	2.5 U	0.33 J
32M 01 17XBR	3.0	**5.1**	2.1 J	4.2	1.0 J	1.8 J	3.4	**8.2 J**	**7.1 J**	0.33 J	2.5 U	2.5 U	2.5 U	2.5 U
Chlorobenzene 100 µg/L Cleanup Goal														
32M 01 18XBR (Source well)	**900**	**480**	**1,200**	**110**	**850**	**1,600**	**540**	**200**	88	**210**	78	49	**280**	82
VPH C^{9} C^{10} Aromatics 200 µg/L Benchmark														
32M 01 18XBR (Source well)	**5,850**	**4,120**	**6,050**	**952**	**3,230**	**3,660**	**1,890**	**837**	**300**	**541**	**444**	**272**	**728**	**322**

Notes:

BOLD indicates result above the monitoring criteria.

µg/L = microgram per liter

NS = Not sampled

J = Estimated result

U = non-detect

* = Spring 2015 and 2016 metals results are for dissolved metals.

VPH concentrations are evaluated against MassDEP standards for comparison purposes.

Table 20
AOCs 32/43A Exceedances Over Time - 2006 to 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

Well Number	Spring 2013	Fall 2013	Spring 2014	Spring 2015*	Spring 2016*
Arsenic (Total) 10 µg/L Cleanup Goal					
32M 01 18XBR (Source well)	2.0 J	6.0	3.0 J	4.0	2.8 J
32M 01 14XBR (Sentry well)	5 U	NS	5 U	NS	NS
32M 01 14XOB (Sentry well)	**58**	NS	**62 J**	**90**	**13**
32M 01 15XBR	5 U	2.0 J	5 U	NS	NS
32M 01 17XBR	5 U	5 U	5 U	3.1	3.0 U
32Z 99 02X (Distant sentry well)	5 U	NS	5 U	NS	NS
SHL 15	NS	NS	NS	NS	NS
Manganese (Total) - 3,500 µg/L Background					
32M 01 18XBR (Source well)	270	137	1,990	1,720	1,100
32M 01 14XOB (Sentry well)	1,650	NS	2,550	3,390	1,800
1,4 Dichlorobenzene 5 µg/L Cleanup Goal					
32M 01 18XBR (Source well)	1.2 J	1.1 J	**71**	**51**	**38**
32M 01 15XBR	2.5 U	2.5 U	2.5 U	NS	NS
32M 01 17XBR	2.5 U	2.5 U	2.5 U	0.50 U	1.0 U
Chlorobenzene 100 µg/L Cleanup Goal					
32M 01 18XBR (Source well)	0.88 J	0.97 J	**131**	88	81
VPH C^{9} C^{10} Aromatics 200 µg/L Benchmark					
32M 01 18XBR (Source well)	50 U	50 U	**730**	**360**	**450**

Notes:

BOLD indicates result above the monitoring criteria.

µg/L = microgram per liter

NS = Not sampled

J = Estimated result

U = non-detect

* = Spring 2015 and 2016 metals results are for dissolved meta

VPH concentrations are evaluated against MassDEP standards for comparison purposes.

Table 21
AOCs 32/43A Summary of Exceedances
Source Area Well 32M-01-18XBR
Main Post - Former Fort Devens Army Installation - Devens, MA

Parameter	Units	Monitoring Criteria [1,2]	April 2002	October 2002	June 2003	December 2003	May 2004	October 2004	June 2005	October 2005	June 2006	October 2006	May 2007
Arsenic, Total	µg/L	10	ND	ND	(3.5)	(8.8)	10.4	(6.2)	**24.4**	ND	**30**	**15**	**51**
Arsenic, Dissolved	µg/L	10	ND	ND	(3.0)	NC	10.1	(6.3)	NC	NC	33	NC	NC
Manganese, Total	µg/L	3,500	**7,730**	**9,260**	**14,100**	**11,000**	**17,400**	**13,400**	**16,700**	**11,600**	**18,000**	**16,000**	**18,200**
Manganese, Dissolved	µg/L	3,500	**7,500**	**8,960**	**14,200**	**13,900**	**18,100**	**12,500**	NC	NC	**19,000**	NC	NC
1,2 Dichlorobenzene	µg/L	600	**5,900**	**2,500**	**3,800**	**3,900**	**6,200**	**4,200**	**4,500**	**1,450**	**5,900**	**2,800**	**6,100**
1,3 Dichlorobenzene	µg/L	100	**660**	**300**	**460**	**430**	**730**	**530**	**590**	**209**	**750**	**360**	**850**
1,4 Dichlorobenzene	µg/L	5.0	**450**	**200**	**310**	**280**	**470**	**320**	**370**	**120**	**490**	**210**	**550**
Trichloroethene	µg/L	5.0	**19**	ND	ND	(3.4)	**5.2**	(3.4)	ND	(0.6)	ND	ND	(4.2)
Bromodichloromethane	µg/L	3.0	NC	NC	NC	ND	ND	ND	ND	ND	19	ND	ND
VPH C9 C12 Aliphatics	µg/L	700	**5,000**	ND	(350)	(511)	**5,100**	**4,480**	(470)	(686)	ND	ND	(2.5)
VPH C9 C10 Aromatics	µg/L	200	**9,100**	**2,900**	**1,700**	**2,600**	**11,000**	**4,400**	**260**	**1,150**	**5,850**	**4,120**	**6,050**
EPH C9 C18 Alphatics	µg/L	700	**920**	(240)	(620)	**940**	**2,300**	**1,100**	**1,400**	(228)	**1,340**	**785**	**854**
Field Paramters ORP	mV	NS	120.4	216.3	111.9	45.1	NC	17.6	24.7	33.8	2.0	14.9	30.9
Field Paramters Turbidity	NTU	NS	NC	NC	NC	0.91	NC	1.63	0.51	0.50	0.10	0.65	1.9

Notes:

[1] The cleanup goal for arsenic is the MCL; the cleanup goal for manganese is the background level.

[2] VPH/EPH concentrations are evaluated against MassDEP standards for comparison purposes.

Number in parentheses denotes that the concentration is below the cleanup goal.

Bold/Gray shading indicates concentration above the Monitoring criteria.

ug/L = microgram per liter
J = Estimated result

ND = Non-detect
NC = Not collected

Table 21
AOCs 32/43A Summary of Exceedances
Source Area Well 32M-01-18XBR
Main Post - Former Fort Devens Army Installation - Devens, MA

Parameter	Units	Monitoring Criteria [1,2]	October 2007	June 2008	October 2008	May 2009	October 2009	May 2010	October 2010	June 2011	October 2011	May 2012	October 2012
Arsenic, Total	µg/L	10	(3.1)	**38**	**34**	**51**	**18**	**18**	(3.5 J)	(3 J)	(5)	(5)	(4 J)
Arsenic, Dissolved	µg/L	10	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Manganese, Total	µg/L	3,500	**10,200**	**14,800**	**18,900**	**29,400**	**6,970**	(2,360)	**4,510**	(2,300)	(1,150)	**4,100**	(1,540)
Manganese, Dissolved	µg/L	3,500	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
1,2 Dichlorobenzene	µg/L	600	**690**	**2,700**	**4,100**	**1,700**	**730**	(300)	(570)	(340)	(260)	640 J	(340)
1,3 Dichlorobenzene	µg/L	100	**120**	**450**	**580**	**270**	**150**	59	**100**	86	64	120 J	70
1,4 Dichlorobenzene	µg/L	5.0	**67**	**270**	**390**	**180**	**100**	**26**	**62**	**50**	**37**	**69**	**42**
Trichloroethene	µg/L	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	(0.60)	ND
Bromodichloromethane	µg/L	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VPH C9 C12 Aliphatics	µg/L	700	ND	ND	ND	(132 J)	(250)	ND	ND	(104)	(108)	(486)	ND
VPH C9 C10 Aromatics	µg/L	200	**952**	**3,230**	**3,660**	**1,890**	**837**	**300**	**541**	**444**	**272**	**728**	**322**
EPH C9 C18 Alphatics	µg/L	700	(158)	(430)	(455)	(470)	(246)	ND	ND	ND	ND	(175)	ND
Field Paramters ORP	mV	NS	1.5	40.1	60.9	437.7	120.7	177.8	137.2	408.1	158.8	163.4	223.8
Field Paramters Turbidity	NTU	NS	0.40	0	3	17.7	2.4	244.0	3.07	2.68	3.53	2.22	1.26

Notes:

[1] The cleanup goal for arsenic is the MCL; the cleanup goal for manganese is the background level.

[2] VPH/EPH concentrations are evaluated against MassDEP standards for comparison purposes.

Number in parentheses denotes that the concentration is below the cleanup goal.

Bold/Gray shading indicates concentration above the Monitoring criteria.

ug/L = microgram per liter
J = Estimated result

ND = Non-detect
NC = Not collected

Table 21
AOCs 32/43A Summary of Exceedances
Source Area Well 32M-01-18XBR
Main Post - Former Fort Devens Army Installation - Devens, MA

Parameter	Units	Monitoring Criteria [1,2]	May 2013	October 2013	June 2014	June 2015	June 2016
Arsenic, Total	µg/L	10	(2 J)	(6.0)	(3 J)	**25**	NC
Arsenic, Dissolved	µg/L	10	NC	NC	NC	(4.0)	(2.8)
Manganese, Total	µg/L	3,500	(27)	(137)	(1,990 J)	(2,140)	NC
Manganese, Dissolved	µg/L	3,500	NC	NC	NC	(1,720)	(1,100)
1,2 Dichlorobenzene	µg/L	600	(7.46 J)	(7.30)	(598)	(407)	(340)
1,3 Dichlorobenzene	µg/L	100	(7.10 J)	(2.12 J)	**106**	(80)	(58)
1,4 Dichlorobenzene	µg/L	5.0	(1.19 J)	(1.14 J)	**71**	**51**	**38**
Trichloroethene	µg/L	5.0	ND	ND	ND	ND	ND
Bromodichloromethane	µg/L	3.0	ND	ND	ND	ND	ND
VPH C9 C12 Aliphatics	µg/L	700	ND	ND	ND	ND	(190)
VPH C9 C10 Aromatics	µg/L	200	ND	ND	**730**	**360**	**450**
EPH C9 C18 Alphatics	µg/L	700	ND	ND	ND	(112)	NC
Field Paramters ORP	mV	NS	298.8	192	111.1	113.5	162.7
Field Paramters Turbidity	NTU	NS	1.36	3.5	1.21	2.0	12.9

Notes:
[1] The cleanup goal for arsenic is the MCL; the cleanup goal for manganese is the background level.
[2] VPH/EPH concentrations are evaluated against MassDEP standards for comparison purposes.
Number in parentheses denotes that the concentration is below the cleanup goal.
Bold/Gray shading indicates concentration above the Monitoring criteria.

ug/L = microgram per liter
J = Estimated result

ND = Non-detect
NC = Not collected

Table 22
Trigger Groundwater Elevations for Analytical Testing at Devens Consolidation Landfill
Main Post - Former Fort Devens Army Installation - Devens, MA

Well Identity	Top of Casing Elevation (feet NGVD)	Groundwater Elevation (DTW) for Required Sampling (feet NGVD)	Groundwater Elevation (DTW) Spring 2016 (feet NGVD)	Groundwater Elevation (DTW) Fall 2016 (feet NGVD)
LFM 99 01B	351.47	345 or above (6.47 or less)	326.25 (25.22)	323.49 (27.98)
LFM 99 02B[1]	354.63	*any*	336.21 (18.42)	332.99 (21.64)
LFM 99 03B	342.88	335 or above (7.88 or less)	301.71 (41.17)	298.96 (43.92)
LFM 99 05A[1]	317.38	*any*	294.44 (22.94)	290.77 (26.61)
LFM 99 05B	317.38	315 or above (2.38 or less)	297.14 (20.24)	293.07 (24.31)
LFM 99 06A-RP[1]	317.09	*any*	301.82 (15.27)	298.07 (19.02)

Notes:
[1] Monitoring well included on LTM list.
NGVD = National Geodetic Vertical Datum
DTW = Depth to water (feet) in feet-bgs

This table evaluates the DTW at monitoring wells located around the DCL. If the DTW is less than the "trigger" levels for the three wells noted above; it indicates that the water table is shallow and the well(s) should be sampled along with the LTM wells.

Table 23
Devens Consolidation Landfill Groundwater Analytical Results - June 2016
Main Post - Former Devens Army Installation - Devens, MA

Client Sample ID:		Monitoring Criteria	LFM-99-02B_SPR16	Q	DUP-1 (LFM-99-02B)	Q	LFM-99-05A_0616	Q	LFM-99-06RP_SPR16	Q	LFM-03-07	Q
Date Sampled:	Units		6/9/2016		6/9/2016		6/8/2016		6/9/2016		Not sampled*	
MADEP Extractable Petroleum Hydrocarbons (EPH) and Target PAH												
C9-C18 Aliphatic	µg/L	700.00	100.00	U	94.00	U	94.00	U	94.00	U		
C19-C36 Aliphatic	µg/L	14,000	100	U	94	U	94	U	94	U		
C11-C22 Aromatic	µg/L	200	100	U	94	U	94	U	94	U		
Naphthalene	µg/L	140	2.1	U	1.9	U	1.9	U	1.9	U		
MADEP Volatile Petroleum Hydrocarbons (VPH) and BTEX												
C5-C8 Aliphatics	µg/L	300	100	U	100	U	100	U	100	U		
C9-C12 Aliphatics	µg/L	700	100	U	100	U	100	U	100	U		
C9-C10 Aromatics	µg/L	200	100	U	100	U	100	U	100	U		
Methyl tert-butyl ether	µg/L	70	5.0	U	5.0	U	5.0	U	5.0	U		
Benzene	µg/L	5.0	3.0	U	3.0	U	3.0	U	3.0	U		
Toluene	µg/L	1,000	5.0	U	5.0	U	5.0	U	5.0	U		
Ethylbenzene	µg/L	700	5.0	U	**0.82**	**J**	5.0	U	5.0	U		
m,p -Xylenes	µg/L	10,000	10.0	U	**1.8**	**J**	10.0	U	10.0	U		
o -Xylene	µg/L	10,000	5.0	U	**1.1**	**J**	5.0	U	5.0	U		
Naphthalene	µg/L	140	5.0	U	5.0	U	5.0	U	5.0	U		
Pesticides (SW846 8081B)												
All Compounds			ND		ND		ND		ND			
Total Metals (Select List)												
Arsenic, Total	µg/L	10	3.0	U	3.0	U	**1.7**	**J**	**2.3**	**J**		
Barium, Total	µg/L	2,000	**7.2**	**J**	**7.1**	**J**	**14**		**9.1**	**J**		
Cadmium, Total	µg/L	5.0	3.0	U	3.0	U	3.0	U	3.0	U		
Chromium, Total	µg/L	100	4.0	U	4.0	U	4.0	U	**2.2**	J		
Copper, Total	µg/L	NS	5.0	U	5.0	U	5.0	U	5.0	U		
Iron, Total	µg/L	NS	50.0	U	50.0	U	**300**		**479**			
Lead, Total	µg/L	15	10.0	U	10.0	U	10.0	U	10.0	U		
Manganese, Total	µg/L	NS	3.0	U	3.0	U	**11**		**49.1**			
Selenium, Total	µg/L	50	20.0	U	20.0	U	20	U	20.0	U		
Silver, Total	µg/L	100	1.5	U	1.5	U	1.5	U	1.5	U		
Mercury	µg/L	2.0	0.20	U	0.20	U	0.20	U	0.20	U		

* Location LFM-03-07 was inaccessible for sampling due to construction activities.
EPA and VPH concentrations are evaluated against MassDEP standards for comparison purposes.

Table 23
Devens Consolidation Landfill Groundwater Analytical Results - June 2016
Main Post - Former Devens Army Installation - Devens, MA

Client Sample ID:		Monitoring Criteria	LFM-99-02B_SPR16	Q	DUP-1 (LFM-99-02B)	Q	LFM-99-05A_0616	Q	LFM-99-06RP_SPR16	Q	LFM-03-07	Q
Date Sampled:	Units		6/9/2016		6/9/2016		6/8/2016		6/9/2016		Not sampled*	
General Chemistry												
Cyanide, Total	mg/L	0.20	0.005	U	0.005	U	0.005	U	**0.003**	J		
Nitrate/Nitrite (as N)	mg/L	NS	**0.60**		**0.62**		**2.9**		**0.98**			
Chemical Oxygen Demand	mg/L	NS	10	U	10	U	10	U	10	U		
Chloride	mg/L	NS	**230**		**240**		**160**		**370**			
Sulfate	mg/L	NS	**17**		**17**		**22**		**29**			
Alkalinity as CaCO3	mg/L	NS	**71**		**71**		**100**		**88**			
TDS	mg/L	NS	**530**		**520**		**470**		**810**			
Water Quality Parameters												
Temperature	°Celcius	NS	10.95		NA		12.07		12.37			
ORP	mV	NS	197.0		NA		-173.9		121.6			
pH	Std units	NS	6.16		NA		8.11		6.59			
Specific Conductance	µS/cm	NS	895		NA		733		1443			
Dissolved Oxygen	mg/L	NS	8.82		NA		5.68		6.27			
Turbidity	NTU	NS	0.36		NA		7.40		6.30			

Notes:
µg/L = microgram per liter
mg/L = milligram per lter
NS = No Standard
ND/U = Non detect
J = Estimated Result
NA = Not Applicable

* Location LFM-03-07 was inaccessible for sampling due to construction activities.
EPA and VPH concentrations are evaluated against MassDEP standards for comparison purposes.

Table 24
Devens Consolidation Landfill Groundwater Analytical Results - October 2016
Main Post - Former Devens Army Installation - Devens, MA

Client Sample ID:		Monitoring Criteria	LFM-99-02B	Q	LFM-99-05A	Q	LFM-99-06RP	Q	DUP-1 (LFM-99-06RP)	Q	LFM-03-07	Q
Date Sampled:	Units		10/12/2016		10/12/2016		10/13/2016		10/13/2016		Not sampled*	
MADEP Extractable Petroleum Hydrocarbons (EPH) and Target PAH												
C9-C18 Aliphatic Hydrocarbons	µg/L	700	110	U	110	U	100	U	100	U		
C19-C36 Aliphatic Hydrocarbons	µg/L	14,000	110	U	110	U	100	U	100	U		
C11-C22 Aromatic Hydrocarbons	µg/L	200	110	U	110	U	100	U	100	U		
Naphthalene	µg/L	140	2.3	U	**3.2**		2.0	U	2.1	U		
MADEP Volatile Petroleum Hydrocarbons (VPH) and BTEX												
C5-C8 Aliphatics	µg/L	300	100	U	100	U	100	U	100	U		
C9-C12 Aliphatics	µg/L	700	100	U	100	U	100	U	100	U		
C9-C10 Aromatics	µg/L	200	100	U	100	U	100	U	100	U		
Methyl tert-butyl ether	µg/L	70	5.0	U	5.0	U	5.0	U	5.0	U		
Benzene	µg/L	5	3.0	U	3.0	U	3.0	U	3.0	U		
Toluene	µg/L	1,000	**0.40**	**J**	**1.0**	**J**	5.0	U	**0.41**	J		
Ethylbenzene	µg/L	700	5.0	U	5.0	U	5.0	U	5.0	U		
m,p -Xylenes	µg/L	10,000	10.0	U	10.0	U	10.0	U	10.0	U		
o -Xylene	µg/L	10,000	5.0	U	5.0	U	5.0	U	5.0	U		
Naphthalene	µg/L	140	5.0	U	5.0	U	5.0	U	5.0	U		
Pesticides (SW846 8081B)												
All Compounds			ND		ND		ND		ND			
Total Metals (Select List)												
Arsenic, Total	µg/L	10	3.0	U	3.0	U	3.0	U	3.0	U		
Barium, Total	µg/L	2,000	**15**		**21**		**5.0**	J	**4.5**	J		
Cadmium, Total	µg/L	5	3.0	U	3.0	U	3.0	U	3.0	U		
Chromium, Total	µg/L	100	**6.0**	J	4.0	U	4.0	U	4.0	U		
Copper, Total	µg/L	NS	5.0	U	5.0	U	5.0	U	5.0	U		
Iron, Total	µg/L	NS	**27**	J	**94**		50	U	50	U		
Lead, Total	µg/L	15	10	U	10	U	10	U	10	U		
Manganese, Total	µg/L	NS	**2.0**	J	**5.1**	J	3.0	U	3.0	U		
Selenium, Total	µg/L	50	20	U	20	U	20	U	20	U		
Silver, Total	µg/L	100	1.5	U	1.5	U	1.5	U	1.5	U		
Mercury	µg/L	2	0.20	U	0.20	U	0.20	U	0.20	U		

* Location LFM-03-07 was inaccessible for sampling due to construction activities.
EPA and VPH concentrations are evaluated against MassDEP standards for comparison purposes.

Table 24
Devens Consolidation Landfill Groundwater Analytical Results - October 2016
Main Post - Former Devens Army Installation - Devens, MA

Client Sample ID:		Monitoring Criteria	LFM-99-02B	Q	LFM-99-05A	Q	LFM-99-06RP	Q	DUP-1 (LFM-99-06RP)	Q	LFM-03-07	Q
Date Sampled:	Units		10/12/2016		10/12/2016		10/13/2016		10/13/2016		Not sampled*	
General Chemistry												
Cyanide, Total	mg/L	0.20	0.005	U	0.005	U	0.005	U	0.005	U		
Nitrate/Nitrite (as N)	mg/L	NS	**0.81**		**3.8**		**1.10**		**1.10**			
Chemical Oxygen Demand	mg/L	NS	**5.0**	J	10	U	10	U	**5.4**	J		
Chloride	mg/L	NS	**360**		**260**		**300**		**300**			
Sulfate	mg/L	NS	**25**		**23**		**31**		**31**			
Alkalinity as CaCO3	mg/L	NS	**110**		**87**		**120**		**160**			
TDS	mg/L	NS	**730**		**560**		**690**		**660**			
Water Quality Parameters												
Temperature	°Celcius	NS	11.86		10.26		10.74		NA			
ORP	mV	NS	77.8		81.4		68.3		NA			
pH	Std units	NS	6.44		6.35		6.67		NA			
Specific Conductance	µS/cm	NS	937		645		819		NA			
Dissolved Oxygen	mg/L	NS	5.82		4.66		4.86		NA			
Turbidity	NTU	NS	1.73		8.50		9.20		NA			

Notes:
µg/L = microgram per liter
mg/L = milligram per lter
NS = No Standard
ND/U = Non detect
J = Estimated Result
NA = Not Applicable

* Location LFM-03-07 was inaccessible for sampling due to construction activities.
EPA and VPH concentrations are evaluated against MassDEP standards for comparison purposes.

Table 25
Devens Consolidation Landfill Leachate Analytical Results - December 2016
Main Post - Former Fort Devens Army Installation - Devens, MA

MassDevelopment Industrial Wastewater Discharge Permit No. 017 (Summary)

Analytical Fraction	Parameter	Limitations (mg/L)	Fall 2016 - Annual Sampling
			Date Sampled: 12/08/2016
			Concentrations (mg/L)
Metals composite	Arsenic	0.20	0.003 U
	Cadmium	0.045	0.003 U
	Chromium	0.40	0.004 U
	Copper	0.75	0.005 U
	Lead	0.20	0.010 U
	Nickel	0.60	**0.0037 J**
	Silver	0.30	0.0015 U
	Zinc	0.70	0.0020 U
	Mercury	0.00	0.0002 U
TTO	Total Toxic Organics	5.00	**0.0038 J**
TSS	Total Suspended	400	**1.2 J**
Cyanide	Cyanide (total)	NL	0.005 U
TPH	TPH (DRO)	NL	**0.87**
Phenols	Phenols (total)	NL	0.05 U
pH *grab sample*	pH (units)	5.5 – 9.5	**7.7**

Notes:
mg/L = milligram per liter
NL = No limit
U = The target analyte was not detected at or above the laboratory reporting limit.
J = Estimated result
TTO = Total Toxic Organics (sum of VOCs, SVOCs, Pesticides and PCBs)
VOCs = Volatile Organic Compounds
SVOCs = SemiVolatile Organic Compounds
PCBs = Polychlorinated Biphenyls
TSS = Total Suspended Solids
TPH = Total Petroleum Hydrocarbons

Table 26
Devens Consolidation Landfill Leachate Annual Discharge Quantities
Main Post - Former Fort Devens Army Installation - Devens, Massachusetts

Period	Discharge Quantities (Gallons)														
	2002 [1]	2003 [2]	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Annual Total	1,259,866	960,394	473,802	414,858	390,085	277,626	304,547	237,983	217,155	353,618	204,483	225,768	237,752	190,403	209,849
Total Leachate Discharge Quantity (2002-2016)															**5,958,189**

Notes:
[1] Startup during April to June period.
[2] April to June period is estimated due to broken meter.

Table 27
Devens Consolidation Landfill Historical Groundwater Data - LFM-99-02B
Main Post - Former Fort Devens Army Installation - Devens, Massachusetts

Method/Analyte LFM-99-02B	Units	Monitoring Criteria	Spring 2003	Q	Fall 2003	Q	Spring 2004	Q	Fall 2004	Q	Spring 2005	Q	Fall 2005	Q	Spring 2006	Q	Spring 2007	Q	Spring 2008	Q
Extractable Petroleum Hydrocarbons (EPH)																				
Naphthalene	µg/L	140	1.0	U	5.1	U	2.4	U	2.1	U	10.0	U	0.400	U	0.2	U	0.46	U	0.412	U
Pesticides																				
Aldrin	µg/L	0.50	0.0064	U	0.0067	U	0.0076	U	0.0076	U	0.05	UJ	0.200	UJ	0.05	U	0.0217	U	0.021	UJ
Dieldrin	µg/L	0.10	0.013	U	0.0013	U	0.015	U	0.014	U	0.10	U	0.040	UJ	0.05	U	0.0435	U	0.043	UJ
alpha-Chlordane	µg/L	2.0	0.0064	U	0.0067	U	0.0076	U	0.071	U	0.05	U	0.020	UJ	0.05	U	0.0217	U	0.021	UJ
gamma-Chlordane	µg/L	2.0	0.0064	U	0.0053	J	0.0076	U	0.071	U	0.05	U	0.020	UJ	0.05	U	0.0217	U	0.021	UJ
Chlordane	µg/L	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
gamma-BHC (Lindane)	µg/L	0.20	0.0064	U	0.0067	U	0.0076	U	0.0076	U	0.05	U	0.020	UJ	0.05	U	0.0217	U	0.021	UJ
Metals (Total)																				
Arsenic	µg/L	10	5.0	U	50.0	U	5.0	U	5.0	U	4.2	U	5.0	J	2.5	U	5.0	U	5.0	U
Chromium	µg/L	100	28		1.7	J	0.96	J	1.07	J	12.0	U	NA		10.0	U	10.0	U	10	U
Iron	µg/L	NS	NA		100	U	17	J	100	U	38.0	U	32	J	50.0	U	50.0	U	50	U
Lead	µg/L	15	5.0	U	8.5	J	5.0	U	5.0	U	3.1		10	U	2.5	U	10.0	U	10	U
Manganese	µg/L	NS	NA		2.4	J	1.5	J	12.7	J	5.2	J	10	U	10.0	U	1.1	J	10	U
Wet Chemistry																				
Total Cyanide	mg/L	0.20	0.01	U	0.004	J	0.01	U	0.005	J	0.01	U	0.005	U	0.05	U	0.01	UJ	0.005	U
Nitrate/Nitrite (as N)	mg/L	NS	0.21		1.4		0.66		0.796		0.36	J	0.64	U	0.45		0.5		0.43	J
Chemical Oxygen Demand (COD)	mg/L	NS	170		50.0	U	15	J	50.0	U	20.0	U	20	U	10.0	U	20.0	U	20	U
Water Quality Parameters																				
pH	std units	NS	6.20		6.38		6.09		6.38		5.97		6.17		6.32		6.15		6.32	
Oxidation-Reduction Potential (ORP)	mV	NS	NA		204.7		243.3		308.4		266.3		311.3		223.6		200.8		160.7	
Turbidity	NTU	NS	NA		0.40		0.80		0.55		0.37		3.8		0.18		0.00		2.80	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result
NA = Not analyzed

Table 27
Devens Consolidation Landfill Historical Groundwater Data - LFM-99-02B
Main Post - Former Fort Devens Army Installation - Devens, Massachusetts

Method/Analyte LFM-99-02B	Units	Monitoring Criteria	Fall 2008	Q	Spring 2009	Q	Fall 2009	Q	Spring 2010	Q	Fall 2010	Q	Spring 2011	Q	Fall 2011	Q	Spring 2012	Q	Fall 2012	Q
Extractable Petroleum Hydrocarbons (EPH)																				
Naphthalene	µg/L	140	0.430	U	10	U	NA		0.419	U	0.400	U	0.400	U	0.400	U	0.400	U	0.148	J
Pesticides																				
Aldrin	µg/L	0.50	0.021	UJ	0.200	UJ	NA		0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
Dieldrin	µg/L	0.10	0.042	UJ	0.040	UJ	NA		0.040	U	0.040	U	0.040	U	0.040	U	0.040	U	0.040	U
alpha-Chlordane	µg/L	2.0	0.021	UJ	0.020	UJ	NA		0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
gamma-Chlordane	µg/L	2.0	0.021	UJ	0.020	UJ	NA		0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
Chlordane	µg/L	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
gamma-BHC (Lindane)	µg/L	0.20	0.021	UJ	0.020	UJ	NA		0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U
Metals (Total)																				
Arsenic	µg/L	10	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	2.0	J	5.0	U	5.0	U
Chromium	µg/L	100	10	U	5.0	U	40		10	U	10	U	10	U	10	U	10	U	10	U
Iron	µg/L	NS	28	J	50	U	380		50	U	50	U	50	U	50	U	50	U	50	U
Lead	µg/L	15	10	U	10	J	10	U	10	U	10	U	10	U	3.0	J	10	U	10	U
Manganese	µg/L	NS	10	U	10	U	9.1	J	10	U	10	U	10	U	10	U	10	U	10	U
Wet Chemistry																				
Total Cyanide	mg/L	0.20	0.005	U	0.005	U	NA		0.0011	J	0.005	U	0.005	U	0.005	U	0.002	J	0.002	J
Nitrate/Nitrite (as N)	mg/L	NS	1.9		0.92		NA		0.41		0.54		0.43		0.76		0.22	U	0.49	
Chemical Oxygen Demand (COD)	mg/L	NS	12	J	20	U	NA		20		20	U	8	J	20	U	20	U	20	U
Water Quality Parameters																				
pH	std units	NS	7.00		5.57		6.22		6.71		6.35		6.10		6.03		6.25		6.29	
Oxidation-Reduction Potential (ORP)	mV	NS	55.2		215.4		113		-232.2		163.6		150.1		142.2		135.5		196.3	
Turbidity	NTU	NS	2.0		0.0		0.0		2.2		0.39		0.00		2.57		0.33		0.00	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result
NA = Not analyzed

Table 27
Devens Consolidation Landfill Historical Groundwater Data - LFM-99-02B
Main Post - Former Fort Devens Army Installation - Devens, Massachusetts

Method/Analyte LFM-99-02B	Units	Monitoring Criteria	Spring 2013	Q	Fall 2013	Q	Spring 2014	Q	Fall 2014	Q	Spring 2015	Q	Fall 2015	Q	Spring 2016 (6/8/16)	Q	Fall 2016 (10/12/16)	Q
Extractable Petroleum Hydrocarbons (EPH)																		
Naphthalene	µg/L	140	0.400	U	0.400	U	0.400	U	1.0	U	5.100	U	4.300	U	2.0	U	2.3	U
Pesticides																		
Aldrin	µg/L	0.50	0.020	U	0.020	U	0.020	U	0.010	U	0.026	U	0.051	U	0.013	U	0.019	U
Dieldrin	µg/L	0.10	0.040	U	0.040	U	0.040	U	0.010	U	0.026	U	0.051	U	0.007	U	0.010	U
alpha-Chlordane	µg/L	2.0	0.020	U	0.020	U	0.020	U	0.054	U	NA		NA		NA		NA	
gamma-Chlordane	µg/L	2.0	0.020	U	0.020	U	0.020	U	0.054	U	NA		NA		NA		NA	
Chlordane	µg/L	NS	NA		NA		NA		NA		0.130	U	0.530	U	0.160	U	0.310	U
gamma-BHC (Lindane)	µg/L	0.20	0.020	U	0.020	U	0.020	U	0.011	U	0.026	U	0.051	U	0.007	U	0.010	U
Metals (Total)																		
Arsenic	µg/L	10	5.0	U	5.0	U	3.0	U	3.0	U	2.0	U	4.0	U	3.0	U	3.0	U
Chromium	µg/L	100	10	U	10	U	10	U	10	U	5.0	U	10	U	4.0	U	6.0	J
Iron	µg/L	NS	50	U	50	U	50	U	50	U	50	U	100	U	50	U	28	
Lead	µg/L	15	10	U	10	U	10	U	10	U	2.5	U	5.0	U	10	U	10	U
Manganese	µg/L	NS	10	U	10	U	10	U	10	U	7.5	U	15.0	U	3.0	U	2.0	J
Wet Chemistry																		
Total Cyanide	mg/L	0.20	0.005	U	0.005	U	0.0001	J	0.0041	U	0.0011	U	0.0082	J	0.005	U	0.0082	J
Nitrate/Nitrite (as N)	mg/L	NS	0.069	J	0.51		0.52		0.36		0.39		0.63		0.60		0.63	
Chemical Oxygen Demand (COD)	mg/L	NS	15	J	20	U	4.1	J	10	U	15	U	20	U	10	U	20	U
Water Quality Parameters																		
pH	std units	NS	5.87		6.45		6.00		6.51		6.07		NA		6.16		6.44	
Oxidation-Reduction Potential (ORP)	mV	NS	303.3		101.8		200.3		113.3		248.5		NA		197.0		77.8	
Turbidity	NTU	NS	0.00		0.79		0.69		0.88		1.65		NA		0.36		1.73	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result
NA = Not analyzed

Table 28
Devens Consolidation Landfill Historical Groundwater Data - LFM-99-05A
Main Post - Former Fort Devens Army Installation - Devens, MA

Method/Analyte LFM-99-05A	Units	Monitoring Criteria	Spring 2003	Q	Fall 2003	Q	Spring 2004	Q	Fall 2004	Q	Spring 2005	Q	Spring 2006	Q	Spring 2007	Q	Spring 2008	Q	Fall 2008	Q	Spring 2009	Q	Fall 2009	Q	Winter 2010	Q	Spring 2010	Q
Extractable Petroleum Hydrocarbons (EPH)																												
Naphthalene	µg/L	140	1.0	U	5.1	U	2.4	U	2.1	U	10	U	0.20	J	0.42	U	0.41	U	0.43	U	0.40	U	0.42	U	NA		0.43	U
Pesticides																												
Aldrin	µg/L	0.5	0.0064	U	0.0067	U	0.0072	U	0.0072	U	0.05	U	0.05	U	0.0215	U	0.020	J	0.021	U	0.022	U	0.022	U	NA		0.021	U
Dieldrin	µg/L	0.1	0.013	U	0.013	U	0.014	U	0.014	U	0.10	U	0.05	U	0.043	U	0.040	J	0.042	U	0.044	U	0.044	U	NA		0.043	U
alpha-Chlordane	µg/L	2.0	0.0064	U	0.0067	U	0.0072	U	0.0072	U	0.05	U	0.05	U	0.0215	U	0.020	J	0.021	U	0.022	J	0.022	J	NA		0.021	U
gamma-Chlordane	µg/L	2.0	0.0064	U	0.0067	U	0.0072	U	0.0072	U	0.05	U	0.05	U	0.0215	U	0.020	J	0.021	U	0.022	U	0.022	U	NA		0.021	U
Chlordane	µg/L	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
gamma BHC (Lindane)	µg/L	0.2	0.0064	U	0.0067	U	0.0072	U	0.0072	U	0.05	U	0.05	U	0.0215	U	0.020	UJ	0.021	U	0.022	U	0.022	U	NA		0.021	U
Metals (Total)																												
Arsenic	µg/L	10	7.5		6.9	J	5.0	U	5.0	U	4.2	J	2.5	U	2.4	J	5.0	U	5.0	U	2.0	J	5.0	U	5.0	U	5.0	U
Chromium	µg/L	100	10	U	1.6	J	7.7	J	1.37	J	6.0	J	10	U	10	U	10	U	10	U	20		NA		40		10	U
Iron	µg/L	NS	NA		96	J	130		33.3	J	666		93.2		70		50	U	70		510		20	J	380		70	
Lead	µg/L	15	9.3		9.5	J	5.0	U	5.0	U	2.9	U	2.5	U	10	U	10	U	10	U	2	J	10	U	10	U	10	U
Manganese	µg/L	NS	NA		3.6	J	8.5	J	2.1	J	33.9		10.0	U	3.9	J	10	U	2.4	J	21		10	U	9.1	J	10	U
Wet Chemistry																												
Total Cyanide	mg/L	0.20	0.01	U	0.004	J	0.01	U	0.009	J	0.01	U	0.05	U	0.01	J	0.005	U	0.005	J	0.002	J	0.005	U	NA		0.005	U
Nitrate/Nitrite (as N)	mg/L	NS	1.6		1.4		1.4		1.34		1		0.4		0.46		0.60	J	0.57		0.55		0.46	J	NA		0.64	
Chemical Oxygen Demand (COD)	mg/L	NS	100		50	U	13	J	12	J	20	U	10	U	11	U	20	U	20	U	8.1	J	20	U	NA		20	U
Water Quality Parameters																												
pH	std units	NS	6.10		6.11		5.97		5.84		6.17		6.24		5.81		6.09		6.93		6.08		5.89		6.37		6.23	
Oxidation-Reduction Potential (ORP)	mV	NS	NA		231.2		199.2		154.7		141.3		205.9		220.0		116.1		61.8		122		173.7		68.7		-223	
Turbidity	NTU	NS	NA		4.43		2.59		2.50		26.2		2.51		3.60		0.58		2.33		4.1		4.67		6.2		1.7	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result
NA = Not analyzed

Table 28
Devens Consolidation Landfill Historical Groundwater Data - LFM-99-05A
Main Post - Former Fort Devens Army Installation - Devens, MA

Method/Analyte LFM-99-05A	Units	Monitoring Criteria	Fall 2010	Q	Spring 2011	Q	Fall 2011	Q	Spring 2012	Q	Fall 2012	Q	Spring 2013	Q	Fall 2013	Q	Spring 2014	Q	Fall 2014	Q	Spring 2015	Q	Fall 2015	Q	Spring 2016 (6/8/16)	Q	Fall 2016 (10/12/16)	Q
Extractable Petroleum Hydrocarbons (EPH)																												
Naphthalene	µg/L	140	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	0.40	U	4.00	U	1.0	U	3.3	U	4.0	U	1.9	U	**3.2**	
Pesticides																												
Aldrin	µg/L	0.5	0.021	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.010	U	0.026	U	0.050	U	0.012	U	0.019	U
Dieldrin	µg/L	0.1	0.041	U	0.040	U	0.040	U	0.040	U	0.040	U	0.040	U	0.040	U	0.040	U	0.010	U	0.026	U	0.050	U	0.007	U	0.011	U
alpha-Chlordane	µg/L	2.0	0.021	U	0.020	U	0.020	U	0.200	U	0.200	U	0.200	U	0.020	U	0.020	U	0.051	U	NA		NA		NA		NA	
gamma-Chlordane	µg/L	2.0	0.021	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.051	U	NA		NA		NA		NA	
Chlordane	µg/L	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.130	U	0.500	U	0.15	U	0.320	U
gamma BHC (Lindane)	µg/L	0.2	0.021	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.010	U	0.026	U	0.050	U	0.007	U	0.011	U
Metals (Total)																												
Arsenic	µg/L	10	4.6	J	5.0	U	3.0	J	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	3.0	U	**2.3**	J	4.0	U	**1.7**	J	3.0	U
Chromium	µg/L	100	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	5	U	5.0	U	10	U	4.0	U	4.0	U
Iron	µg/L	NS	480		50	J	20	J	50	U	110		50	U	80		260	J	50	U	**118**		**378**		**300**		**94**	
Lead	µg/L	15	10	U	10	U	2.0	J	10	U	10	U	10	U	10	U	2.0	J	2.5	U	2.5	U	5.0	U	10	U	10	U
Manganese	µg/L	NS	12.0		10	U	10	U	10	U	6.0	J	10	U	3.0	J	20		7.5	U	7.5	U	**10.4**	J	**11**		**5.1**	J
Wet Chemistry																												
Total Cyanide	mg/L	0.20	0.005	U	0.005	U	0.005	U	0.002	J	0.004	J	0.005	U	0.005	U	0.0020	J	0.0041	U	0.0011	U	0.0100	U	0.005	U	0.0050	U
Nitrate/Nitrite (as N)	mg/L	NS	0.49	J	0.51		0.42		0.38		0.38		0.43		0.47		0.6		0.46		**1.1**		**1.9**		**2.9**		**3.8**	
Chemical Oxygen Demand (COD)	mg/L	NS	24	U	34		20	U	20	U	11	J	13	J	20	U	20	U	10	U	15	U	20	U	10	U	10	U
Water Quality Parameters																												
pH	std units	NS	6.05		5.56		6.16		6.51		6.44		6.3		6.46		4.83		6.43		6.21		6.40		8.11		6.35	
Oxidation-Reduction Potential (ORP)	mV	NS	180.6		238		-255.1		106.4		195.9		219.6		145.4		235.6		181		218		134		-173.9		81.4	
Turbidity	NTU	NS	2.8		3.1		2.40		3.02		3.90		2.4		3.70		18.90		3.21		131		15		7.4		8.5	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result
NA = Not analyzed

Table 29
Devens Consolidation Landfill Historical Groundwater Data - LFM-03-07
Main Post - Former Fort Devens Army Installation - Devens, MA

Method/Analyte LFM-99-07/LFM-03-07 (5/22/06)	Units	Monitoring Criteria	Spring 2003	Q	Fall 2003	Q	Spring 2004	Q	Fall 2004	Q	Spring 2005	Q	Spring 2006	Q	Spring 2007	Q	Spring 2008	Q	Fall 2008	Q	Spring 2009	Q	Spring 2010	Q
Extractable Petroleum Hydrocarbons (EPH)																								
Naphthalene	µg/L	140	1.0	U	5.4	U	2.4	U	2.1	U	10.0	U	0.2	J	0.46	U	0.417	U	0.426	U	10	U	0.412	U
Pesticides																								
Aldrin	µg/L	0.50	0.0064	U	0.0067	U	0.0067	U	0.0070	U	0.05	UJ	0.05	U	0.020	U	0.024	UJ	0.021	U	0.023	U	0.021	U
Dieldrin	µg/L	0.10	0.013	U	0.0013	U	0.015	U	0.014	U	0.10	U	0.05	U	0.040	U	0.048	UJ	0.043	U	0.046	U	0.042	U
alpha-Chlordane	µg/L	2.0	0.0064	U	0.0067	U	0.0067	U	0.0070	U	0.05	U	0.05	U	0.020	U	0.024	UJ	0.021	U	0.023	U	0.021	U
gamma-Chlordane	µg/L	2.0	0.0064	U	0.0053	J	0.0067	U	0.0070	U	0.05	U	0.05	U	0.020	U	0.024	UJ	0.021	U	0.023	U	0.021	U
Chlordane	µg/L	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
gamma-BHC (Lindane)	µg/L	0.20	0.0064	U	0.0067	U	0.0067	U	0.0070	U	0.05	U	0.05	U	0.020	U	0.024	UJ	0.021	U	0.023	U	0.021	U
Metals (Total)																								
Arsenic	µg/L	10	7.9		29	J	5.0	U	1.7	J	4.2	U	2.5	U	2.3	J	5.0	U	5.0	U	5.0	U	3.3	J
Chromium	µg/L	100	10	U	35		8.1	J	5.4	J	7.4	J	10	U	10	U	10	U	10	U	2.0	J	4.0	J
Iron	µg/L	NS	NA		17,000	J	620		25	U	630		50	U	50	U	50	U	50	U	50	U	230	
Lead	µg/L	15	13	U	17	J	5.0	U	5.0	U	2.9	U	2.5	U	10	U	10	U	10	U	1.9	J	10	U
Manganese	µg/L	NS	NA		200	J	14	J	10	J	23		0.70	J	0.70	J	10	U	10	U	10	U	4.4	J
Wet Chemistry																								
Total Cyanide	mg/L	0.20	0.01	U	0.004	J	0.01	U	0.01	U	0.01	U	0.05	U	0.01	UJ	0.005	U	0.005	U	0.005	U	0.0001	J
Nitrate/Nitrite (as N)	mg/L	NS	1.3		2.0		0.90		1.8		1.2	J	1.5		0.93		1.3	J	0.94		1.0		1.1	
Chemical Oxygen Demand	mg/L	NS	86		26.0	J	18	J	50.0	U	31.0	U	10.0	U	18.0	UJ	12	J	20	U	20	U	9.2	J
Water Quality Parameters																								
pH	std	NS	6.00		6.27		5.54		6.15		6.15		6.22		6.06		8.14		5.95		5.96		6.37	
Oxidation-Reduction Potential	mV	NS	NA		365.5		345.3		279.0		237.5		230.3		169.0		130.0		146.0		125.1		-249.8	
Turbidity	NTU	NS	NA		10.90		3.52		11.70		0.25		0.49		0.50		2.00		3.4		3.2		2.0	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result

* Location LFM-03-07 was inaccessible for sampling in 2016 due to construction activities.

Table 29
Devens Consolidation Landfill Historical Groundwater Data - LFM-03-07
Main Post - Former Fort Devens Army Installation - Devens, MA

Method/Analyte LFM-99-07/LFM-03-07 (5/22/06)	Units	Monitoring Criteria	Fall 2010	Q	Spring 2011	Q	Fall 2011	Q	Spring 2012	Q	Spring 2013	Q	Spring 2014	Q	Spring 2015	Q	Fall 2015	Q	Spring 2016*	Q	Fall 2016*	Q
Extractable Petroleum Hydrocarbons (EPH)																						
Naphthalene	µg/L	140	0.400	U	0.400	U	0.400	U	0.400	U	0.400	U	0.400	U	5.1	U	Dry		NA		NA	
Pesticides																						
Aldrin	µg/L	0.50	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.026	U	Dry		NA		NA	
Dieldrin	µg/L	0.10	0.040	U	0.040	U	0.040	U	0.040	U	0.040	U	0.040	U	0.026	U	NA		NA		NA	
alpha-Chlordane	µg/L	2.0	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	--		NA		NA		NA	
gamma-Chlordane	µg/L	2.0	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	--		NA		NA		NA	
Chlordane	µg/L	NS	NA		NA		NA		NA		NA		NA		0.13	U	NA		NA		NA	
gamma-BHC (Lindane)	µg/L	0.20	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.026	U	NA		NA		NA	
Metals (Total)																						
Arsenic	µg/L	10	2.5	J	5.0	U	4.0	J	5	U	5	U	3	U	2.7	J	Dry		NA		NA	
Chromium	µg/L	100	2.0		10	U	10	U	10	U	10	U	10	U	5.0	U	NA		NA		NA	
Iron	µg/L	NS	730		20	J	50	U	50	U	50	U	20	J	50	U	NA		NA		NA	
Lead	µg/L	15	10	U	10	U	3.0	J	10	U	10	U	10	U	2.5	U	NA		NA		NA	
Manganese	µg/L	NS	10		10	U	10	U	10	U	10	U	10	U	7.5	U	NA		NA		NA	
Wet Chemistry																						
Total Cyanide	mg/L	0.20	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0001	J	0.0018	J	Dry		NA		NA	
Nitrate/Nitrite (as N)	mg/L	NS	0.98		0.96		0.93		1.0		0.87		0.99		0.93		NA		NA		NA	
Chemical Oxygen Demand	mg/L	NS	20	U	20	U	26	U	20	U	18	J	11		15	U	NA		NA		NA	
Water Quality Parameters																						
pH	std	NS	6.38		5.84		6.14		6.52		5.76		6.27		6.16		Dry		NA		NA	
Oxidation-Reduction Potential	mV	NS	109.0		372.9		121.5		105.6		284.3		198.7		135.5		NA		NA		NA	
Turbidity	NTU	NS	13.90		0.59		0.46		0.00		0.25		0.80		0.94		NA		NA		NA	

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
NS = No Standard
U = Non-detect
UJ = Estimated non-detect
J = Estimated Result

* Location LFM-03-07 was inaccessible for sampling in 2016 due to construction activities.

Table 30
Hydrasleeve versus Low Flow Sample Collection
Spring 2016 - AOCs 32 and 57
Main Post - Former Fort Devens Army Installation - Devens, MA

		Low Flow Technique		Hydrasleeve™ Technique		
		32M-01-17XBR		32M-01-17XBR_H		
		06/10/2016		06/10/2016		
Method	**Analyte**	**Result (ug/L)**	**Flag**	**Result (ug/L)**	**Flag**	**RPD (%)**
6010C	Dissolved Manganese	3.0	U	46		NC
8260B	1,2-Dichlorobenzene	1.0	U	1.1		NC
8260B	1,3-Dichlorobenzene	1.0	U	0.48	J	NC
		57M-95-03X		57M-95-03X_H		
		06/07/2016		06/09/2016		
		Result (ug/L)	**Flag**	**Result (ug/L)**	**Flag**	**RPD (%)**
6010C	Iron, Total	4,700		5,500		15.6
6010C	Manganese, Total	130		110		16.6
6020A	Arsenic, Total	31		43		32.4
		57M-96-11X		57M-96-11X_H		
		06/09/2016		06/09/2016		
		Result (ug/L)	**Flag**	**Result (ug/L)**	**Flag**	**RPD (%)**
6010C	Iron, Total	32,000		40,000		22.2
6010C	Manganese, Total	2,800		2,900		3.5
6020A	Arsenic, Total	290		890		102

Notes:
µg/L - microgram per liter
U - non-detect
RPD - Relative percent difference
NC - Not calculated

APPENDIX A
GROUNDWATER FIELD ANALYSIS FORMS

APPENDIX A.1
SPRING 2016 LONG-TERM MONITORING EVENT

Location _____ Date 5/17/16

Project / Client Devens

• DCL

well	DTW	Condition
7:35 arrive onsite - reading from TOC/PVC		
9:40 departed site		
LFM-99-05A	22.94	x lock ✓
LFM-99-05B	20.24	✓
LFM-99-03B	41.17	✓
LFM-99-01B	25.22	✓
LFM-99-02B	18.42	✓
LFM-99-06A	RP 15.27	✓
LFM-03-07	dry	manhole buried ✓ (DCL gauging)

Location _____ Date 5/17/16

Project / Client Devens

• AOC 32/43A Measured from PVC TOC

11:55 AM

Well ID	DTW	Conditions
32Z-01-05X0B	30.69	1 missing bolt ✓
32Z-01-09X0B	27.62	✓
43M-01-20XBR	27.52	1 missing bolt ✓
43M-01-20X0B	27.68	✓
43M-01-17XBR	27.97	✓
43M-01-17X0B	27.87	✓
43M-01-16XBR	26.18	✓
43M-01-16X0B	26.27	1 missing bolt ✓
32Z-01-12XBR	19.28	✓
32Z-01-11XBR	dry	DTB ✓ 16.94
32M-01-13XBR	17.34	✓
32M-01-15XBR	20.97	✓
32M-01-18XBR	16.97	✓
32M-01-17XBR	25.82	✓
32M-01-16XBR	22.94	✓
32Z-01-10XBR	16.96	✓
32M-92-03X	28.89	✓
32Z-01-08X0B	17.90	✓
32M-92-01X	17.33	✓
SHL-50	17.46	✓
32Z-01-07X0B	15.91	✓

Location _____ Date _____

Project / Client _____

Well ID	DTW	Condition
32Z-01-14XBR	17.73	✓
32M-01-14XOB	24.68	✓
32M-01-14XBR	22.69	✓
SHL-25	26.82	✓
32Z-99-02X	NA.	Well Not Found

5/18/16
730 arrived onsite
1535 departed site

• gauged Aoc 50 (see form)

5/19/16
740 arrived onsite
1145 departed site

• (Aoc 57 Area 3)

Well	DTW	Condition
57M-95-03X	11.47	✓ (4-inch)
57M-96-12X	5.28	✓ (2-inch)
57M-96-13X	5.03	✓ (2-inch)
57M-96-11X	2.96	✓ (2-inch)
57M-96-10X	~~7.14~~ Dry	DTB = 7.11'

Location Aoc 57 Date 5/19/16

Project / Client _____

• Aoc 57 Area 2

Well	DTW	Condition
57M-95-06X	13.40	✓ (4-inch)
57M-03-01X	14.86	✓ (2-inch)
57M-95-05X	14.89	✓ (4-inch)
57M-95-07X	2.80	✓ (4-inch)
57WP-05-01	2.07	✓ (1-inch)
57M-03-02X	5.27	✓ (2-inch)
57M-03-03X	0.97	✓ (2-inch)
57WP-06-02	01.24	✓ (1-inch)
57M-03-04X	2.40	(2-inch)
57M-03-05X	2.71	✓ (no steel cover)
57M-03-06X	2.74	✓

Instrument Calibration Log

Project/Site Name: Devens
Calibrated By: K. Anderson

Date: 6/8/2016
Instrument: YSI 556WPS

Weather: Clear, 60s
Serial Number: 10C101181

Parameters	Morning Calibration	Cal. Temperature °C	Afternoon Calibration	Cal. Temperature °C
Conductivity (µS/cm^{c})	1.412	20.39	1.317	
pH (7)	7.02		8.06	
pH (4)	4.05		6.07	
pH (10)	10.08		11.09	
ORP (mv)	240.0		243.6	
Dissolved Oxygen (%)	99.8%		92.6%	
Zero Dissolved Oxygen (mg/L)	-			
Barometric Pressure (mmHg)	740.7		740.7	

Signature: K. Anderson

Date: 06/08/2016

Instrument Calibration Log

Project/Site Name: Devens
Calibrated By: S. Enos

Date: 6/9/2016
Instrument: YSI 556WPS

Weather: Clear, 70s
Serial Number: 12J101179

Parameters	Morning Calibration (0830)	Cal. Temperature °C	Afternoon Calibration	Cal. Temperature °C
Conductivity (µS/cm^{c})	1.413	14.49	1.387	
pH (7)	7.00		7.25	
pH (4)	4.00		4.19	
pH (10)	10.00		10.07	
ORP (mv)	240.0		243.2	
Dissolved Oxygen (%)	100.0%		98.7%	
Zero Dissolved Oxygen (mg/L)	-			
Barometric Pressure (mmHg)	743.3		743.4	

Signature: S. Enos

Date: 06/09/2016

Instrument Calibration Log

Project/Site Name: Devens
Calibrated By: K. Anderson

Date: 6/9/2016
Instrument: YSI 556WPS

Weather: Clear
Serial Number: 10C101181

Parameters	Morning Calibration	Cal. Temperature °C	Afternoon Calibration	Cal. Temperature °C
Conductivity (µS/cm^{c})	1.413	17.34	1.413	
pH (7)	6.99		7.02	
pH (4)	4.00		4.01	
pH (10)	10.01		9.99	
ORP (mv)	240.1		240.3	
Dissolved Oxygen (%)	99.7%		100.1%	
Zero Dissolved Oxygen (mg/L)	-			
Barometric Pressure (mmHg)	742.1		748.9	

Signature: K. Anderson

Date: 06/09/2016

Instrument Calibration Log

Project/Site Name: Devens
Calibrated By: S. Enos

Date: 6/10/2016
Instrument: YSI 556MPS

Weather: Clear, 65
Serial Number: 12J101179

Parameters	Morning Calibration (0900)	Cal. Temperature °C	Afternoon Calibration (1320)	Cal. Temperature °C
Conductivity (µS/cm^{c})	1.413	15.32	1.368	
pH (7)	7.00		7.05	
pH (4)	3.99		4.11	
pH (10)	10.00		9.92	
ORP (mv)	240.0		229.6	
Dissolved Oxygen (%)	100.0%		102.9%	
Zero Dissolved Oxygen (mg/L)	-			
Barometric Pressure (mmHg)	750.3		750.3	

Signature: S. Enos

Date: 06/10/2016

Instrument Calibration Log

Project/Site Name: Devens
Calibrated By: K. Anderson

Date: 6/10/2016
Instrument: YSI 556WPS

Weather: Clear
Serial Number: 10C101181

Parameters	Morning Calibration	Cal. Temperature °C	Afternoon Calibration	Cal. Temperature °C
Conductivity (µS/cm^{c})	1.412	18.13	1.413	
pH (7)	6.97		7.01	
pH (4)	4.02		4.00	
pH (10)	10.00		10.03	
ORP (mv)	239.0		240.2	
Dissolved Oxygen (%)	100.2%		100.0%	
Zero Dissolved Oxygen (mg/L)	-			
Barometric Pressure (mmHg)	743.1		745.6	

Signature: K. Anderson

Date: 06/10/2016

Instrument Calibration Log

Project/Site Name: Devens/DCL **Date:** 6/8 - 6/16/16
Calibrated By: K. Anderson **Instrument:** Turbidity Meter 2020WF **Serial Number:** 024773

Date	Pre-Cal 0-AM (NTU)	Pre-Cal 0-AM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-AM (NTU)	Pre-Cal 0-AM (NTU)	Pre-Cal 0-AM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-AM (NTU)
06/08/2016	0.06	0.05	10.05	10.00	0.00	0.00	10.00	10.00
06/09/2016	0.00	0.03	9.87	9.94	0.00	0.00	10.00	10.00
06/10/2016	0.03	0.05	9.96	10.07	0.00	0.00	10.00	10.00
06/14/2016	0.04	0.07	9.92	10.08	0.00	0.00	10.00	10.00
06/15/2016	0.07	0.03	9.96	10.02	0.00	0.00	10.00	10.00
06/16/2016	0.01	0.06	9.97	10.11	0.00	0.00	10.00	10.00

Signature: K. Anderson Date: 06/16/2016



AOC 57

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 57
Well ID: _57M-95-03X

Date: _____ 06/09/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1215_____ **End Time:** _1255_____
Well Construction: ___PVC_____
Depth to Water: ___12.13 ft_____
Well Depth: _____19.57 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1215	100	12.13	11.1	6.68	411	1.03	-37.6	23.1	Clear
1220	100	12.13	10.79	6.61	401	1.22	-44.6	21.6	Clear
1225	100	12.13	10.79	6.61	401	1.67	-43.9	14.7	Clear
1230	100	12.13	10.71	6.61	402	2.09	-42.1	12.3	Clear
1235	100	12.13	10.53	6.60	411	2.78	-38.3	8.21	Clear
1240	100	12.13	10.53	6.60	413	2.66	-34.4	7.69	Clear
1245	100	12.13	10.52	6.62	412	2.67	-34.2	7.63	Clear
1250	100	12.13	10.59	6.61	414	2.68	-33.6	7.55	Clear
total:	3,500 mL								
Acceptance Criteria:		<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: Yes	
Notes: Sample collected @1255				

Comments

Hydrosleeve sample collected @1140

K. Anderson
Signature

06/09/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 57
Well ID: _57M-96-11X

Date: _____ 06/09/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1335_____ **End Time:** _1415_____
Well Construction: ___PVC_____
Depth to Water: ___4.18 ft_____
Well Depth: _____14.68 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1335	100	4.18	11.33	6.45	373	3.33	-15.9	25.9	Clear
1340	100	4.18	11.23	6.45	370	1.99	-15.6	25.3	Clear
1345	100	4.18	11.15	6.45	371	1.46	-17.6	24.4	Clear
1350	100	4.18	11.16	6.45	370	1.29	-15.0	24.3	Clear
1355	100	4.18	11.18	6.47	370	1.09	-14.2	24.7	Clear
1400	100	4.18	11.16	6.48	370	0.92	-14.1	24.2	Clear
1405	100	4.18	11.22	6.50	370	0.83	-14.4	24.1	Clear
1410	100	4.18	11.21	6.49	371	0.81	-14.5	24.0	Clear
total:	3,500 mL								

Acceptance Criteria:	<0.3ft	3%	±0.1	3%	10%	± 10mv	10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details					
Field Filtered: Yes		Duplicate: Yes	DUP-1	MS/SD: No	
Notes: Sample collected @1415					

Comments

Hydrosleeve sample collected @1155

K. Anderson
Signature

06/09/2016
Date

AOC 32/43A

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 32 43A
Well ID: _32M-01-13XBR

Date: _____ 06/10/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1115_____ **End Time:** _1145_____
Well Construction: ___PVC_____
Depth to Water: ___19.02 ft_____
Well Depth: _____22.87 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1115	200	19.02	14.69	6.67	667	6.3	116.0	12.5	Clear
1120	200	19.47	14.33	6.33	674	5.89	130.3	7.39	Clear
1125	200	19.84	14.36	6.39	677	5.74	125.9	6.43	Clear
1130	200	20.24	14.33	6.42	677	5.76	121.4	6.47	Clear
1135	200	20.68	14.31	6.41	678	5.75	120.9	6.45	Clear
1140	200	20.99	14.29	6.41	678	5.73	119.1	6.43	Clear
total:	5,000 mL								

Acceptance Criteria:	<0.3ft	3%	±0.1	3%	10%	± 10mv	10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1145				

Comments

K. Anderson
Signature

06/10/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 32 43A
Well ID: _32M-01-14XOB

Date: _____ 06/10/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1025_____ **End Time:** _1050_____
Well Construction: ___PVC_____
Depth to Water: ___25.72 ft_____
Well Depth: _____25.99 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1025	200	25.72	12.65	5.95	442	5.42	60.1	4.34	Clear
1030	200	26.01	12.77	5.94	441	1.09	60.9	4.09	Clear
1035	200	26.31	12.91	5.91	440	0.98	61.5	3.89	Clear
1040	200	26.49	12.93	5.92	441	0.95	51.9	3.87	Clear
1045	200	26.71	12.95	5.92	441	0.93	62.4	3.79	Clear
total:	4,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1050				

Comments

K. Anderson
Signature

06/10/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 32 43A
Well ID: _32M-01-17XBR

Date: _____ 06/10/2016
Sampler: ___S. Enos
PID: _____N/A

Start Time: _1010_____ **End Time:** _1050_____
Well Construction: ___PVC_____
Depth to Water: ___26.45 ft_____
Well Depth: _____53.79 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1010	100	26.5	13.32	7.39	751	8.83	229.1	1.1	Clear
1015	100	26.5	13.11	7.34	749	3.87	225.9	0.72	Clear
1020	100	26.51	13.03	7.32	748	1.76	224.9	0.33	Clear
1025	100	26.51	12.97	7.28	750	1.61	218.7	0.18	Clear
1030	100	26.51	12.94	7.22	751	1.43	213.6	0.19	Clear
1035	100	26.51	12.96	7.19	751	1.4	206.2	0.08	Clear
1040	100	26.51	12.96	7.19	751	1.37	203.2	0.06	Clear
1045	100	26.51	12.97	7.18	751	1.36	200.1	0.01	Clear
total:	3,500 mL								

Acceptance Criteria: <0.3ft | 3% | ±0.1 | 3% | 10% | ± 10mv | 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details					
Field Filtered: Yes		Duplicate: Yes	32M-DUP1	MS/SD Yes	
Notes: Sample collected @1050					

Comments

Hydrasleeve sample collected 1345

S.Enos
Signature

06/10/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 32 43A
Well ID: _32M-01-18XBR

Date: _____ 06/10/2016
Sampler: ___S. Enos
PID: _____N/A

Start Time: _1200_____ **End Time:** _1240_____
Well Construction: ___PVC_____
Depth to Water: ___17.88 ft_____
Well Depth: _____23.74 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{o}C)	pH (STD)	SPC (µS/cm^{c})	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1200	150	18.33	15.73	7.33	636	8.26	181.2	17.2	Clear
1205	150	18.49	15.37	7.21	636	7.66	173.5	17.3	Clear
1210	150	18.58	15.06	7.08	636	7.25	166.0	17.5	Clear
1215	150	18.72	15.18	0.05	643	6.47	164.1	15.7	Clear
1220	150	18.75	15.21	6.99	657	5.99	162.9	142	Clear
1225	150	18.81	15.27	6.95	661	5.85	161.3	13.5	Clear
1230	150	18.82	15.25	6.91	666	5.43	161.9	13.2	Clear
1235	150	18.86	15.25	6.9	669	5.31	162.7	12.9	Clear
total:	5,250 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: No		Duplicate: No	MS/SD No	
Notes: Sample collected @1240				

Comments

S.Enos
Signature

06/10/2016
Date



DCL

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: ___ Devens LTM
Location: __ DCL
Well ID: ____LFM-99-05A

Date: ____ 06/08/2016
Sampler: _ Eanderson
PID: _____

Start Time: _11:25__ End Time: ___12:30_____
Well Construction: _____
Depth to Water: __23.91 ft_____
Well Depth: _____ 29.98 ft
Water Column: _____
Total Volume Removed (L): ___6.5 L_____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make	Model	Serial #

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SpC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
11:25		100	23.91	12.05	8.20	764	6.33	-156.7	32.8	
11:30		100	23.91	11.69	8.10	747	7.26	-156.5	32.5	
11:35		100	23.91	11.95	8.06	788	6.88	-162.4	39.7	
11:40		100	23.91	11.94	8.06	735	6.7	-166.2	22.8	
11:45		100	23.92	12.00	8.06	734	6.57	-167.3	23.5	
11:50		100	23.91	11.89	8.05	736	6.49	-168.7	21.9	
11:55		100	23.92	11.94	8.05	733	6.25	-169.9	22.6	
12:00		100	23.92	11.57	8.08	738	6.53	-170.6	17.0	
12:05		100	23.92	11.57	8.06	735	6.42	-170.8	11.9	
12:10		100	23.92	11.96	8.06	732	5.97	-171.2	15.1	
12:15		100	23.92	11.91	8.08	735	6.03	-172.2	10.5	
12:20		100	23.92	11.71	8.09	736	6.11	-172.7	8.81	
12:25		100	23.93	11.68	8.09	734	6.04	-174.00	7.96	
12:30		100	23.92	12.07	8.11	733	5.68	-173.9	7.4	
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
12:30	LFM-99-05A	All DCL analyses (see COC)			

Comments

Prepared from logbook pages.

_____

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _DCL
Well ID: __LFM-99-02B

Date: _____ 06/09/2016
Sampler: ___S. Enos
PID: _____N/A

Start Time: _0950_____ **End Time:** _1040_____
Well Construction: ___PVC_____
Depth to Water: ___19.15 ft _____
Well Depth: _____25.83 ft _____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0950	90	19.16	10.56	3.76	459	13.44	241.8	1.17	Clear
0955		19.16	10.69	6.62	467	10.60	387.8	1.02	Clear
1000		19.18	10.82	7.09	679	9.07	202.3	1.32	Clear
1005		19.19	11.00	7.46	958	8.79	188.5	0.98	Clear
1010		19.19	10.78	6.51	914	9.44	205.0	0.07	Clear
1015		19.19	11.05	6.20	892	9.43	206.9	0.48	Clear
1020		19.19	11.01	6.16	893	8.89	200.9	0.46	Clear
1025		19.19	10.98	6.16	894	8.85	199.1	0.42	Clear
1030		19.19	10.95	6.16	895	8.82	197.0	0.36	Clear
total:	3,600 mL								
Acceptance Criteria:		<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details					
Field Filtered: No		Duplicate: Yes	DUP-1	MS/SD: Yes	
Notes: Sample collected @1040					

Comments

Hydrosleeve sample collected 6/8 @0947

S. Enos
Signature

06/09/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _DCL
Well ID: __LFM-99-06A

Date: _____ 06/09/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _0850_____ **End Time:** _0925_____
Well Construction: ___PVC_____
Depth to Water: ___15.92 ft_____
Well Depth: _____34.87 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	100101181

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0850	100	15.92	12.34	7.46	1441	8.16	87.9	17.40	Clear
0855	100	15.92	12.69	6.90	1440	6.97	96.7	12.97	Clear
0900	100	15.92	12.54	6.71	1440	6.40	107.9	12.31	Clear
0905	100	15.92	12.47	6.66	1441	6.36	111.1	7.21	Clear
0910	100	15.92	12.32	6.61	1442	6.33	117.4	6.35	Clear
0915	100	15.92	12.35	6.60	1442	6.29	119.6	6.32	Clear
0920	100	15.92	12.27	6.59	1443	6.27	121.6	6.30	Clear
total:	3,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: No		Duplicate: No	MS/SD: No	
Notes: Sample collected @0925				

Comments

Hydrosleeve sample collected @1357

K. Anderson
Signature

06/09/2016
Date

APPENDIX A.2
FALL 2016 LONG-TERM MONITORING EVENT

Location: Vb1 plot 4 Date: 10/12/16

Project / Client: DCL Dacos

745 arrived onsite
1600 departed site

Well	DTW	DTB	condition
LFM-99-03B	43.92	50.64	✓ NL
LFM-99-01B	27.98	34.47	✓ NL
LFM-99-02B	21.64	26.43	✓
LFM-99-06A-RP	19.02	34.86	✓
LFM-99-05A	26.61	30.59	✓
LFM-99-05B	24.31	58.97	✓
LFM-03-07	☆		

☆ under 2' of soil or under asphalt ☆

Turbidity Lamotte 2020WE — 3597
YSI 556MPS 11J102413

Full suite (14 Bottles) ☆

(4) NP Ambers
(2) HCl Ambers
(1) HNO_3
(1) NaOH
(1) 250ml H_2SO_4
(1) 500ml H_2SO_4

(3) 40ml HCl vaas
(1) 500ml NP plastic

Location: Vb1 p 2 of 4 Date:

Project / Client:

Setup on LFM-99-05A

Time	DTW	DO	ORP	Turb	Spec	pH	Temp
1025	26.73	5.31	65.9	128	707	6.89	10.5
1030	26.73	5.21	68.7	101	697	6.63	10.40
1035	26.73	5.09	72.5	89.4	683	6.59	10.34
1040	26.73	4.84	75.9	58.6	683	6.42	10.30
1045	26.73	4.74	76.9	42.3	683	6.40	10.28
1050	26.73	4.81	78.6	32.6	683	6.38	10.18
1055	26.73	4.96	80.9	18.9	684	6.37	10.25
1100	26.73	4.64	80.0	11.9	686	6.37	10.26
1105	26.73	4.65	80.3	9.4	653	6.36	10.25
1110	26.73	4.67	81.0	8.7	646	6.36	10.25
1115	26.73	4.66	81.4	8.5	645	6.35	10.26

Collected sample @ 1120

Full suite ☆

Location _____ Date 10/14/16

Project / Client Devens AOC 43b

750 arrived on site
1225 departed site

Well	DTW	DTB	Condition
• XGM-97-12X	27.31	33.74	✓
• XGM-93-02X	30.44	37.56	✓
AAFES-5	23.39	29.68	✓
XGM-94-07X	21.59	29.48	~~[illegible]~~ ✓ Brown lock
• AAFES-2	24.88	32.72	✓
AAFES-6R	22.39	26.73	✓ added lock
• XGM-94-04X	22.12	30.74	✓
XGM-94-10X	26.70	33.77	✓ added lock
XGM-94-08X	27.42	35.83	✓ added lock
• AAFES-7	13.27	16.89	✓ added lock

Total Suite

Alkalinity – 250ml plastic
VPH – (3) HCL vons
Total Metals – 250ml HNO_3

Location _____ Date _____

Project / Client _____

Setup on AAFES-2

Time	DTW	DO	ORP	Turb	Spec	ph	Temp
937	25.88	0.78	-95.0	13.8	1003	7.43	11.88
942	25.94	0.54	-93.9	11.69	998	7.36	11.73
947	26.04	0.52	-84.1	9.81	997	7.26	11.77
952	26.18	0.50	-81.1	9.70	994	7.24	11.76
957	26.24	0.49	-80.7	9.69	995	7.23	11.74
1002	26.31	0.48	-79.9	9.68	994	7.23	11.75

Collected Sample @ 1010

Total suite

Setup on XGM-94-04X

Time	DTW	DO	ORP	Turb	Spec	ph	Temp
1050	22.18	1.73	26.5	9.05	985	7.19	12.89
1055	22.18	1.58	25.9	5.23	979	7.15	12.97
1100	22.18	1.45	25.2	4.03	977	7.14	13.00
1105	22.18	1.27	24.7	4.01	973	7.12	12.99
1110	22.18	1.23	24.3	3.07	972	7.11	13.01

Collected Sample @ 1115

~~Total Suite~~ total suite
MS/MSD collected

Location

Date 10/25/16

Project / Client Devens Aor 69W

40's

745 arrived onsite
1845 departed site

Well	DTW	DTB	Condition
• ZMM-95-16X	8.07	15.37	✓
• 69W-94-12	9.57	15.83	need lock
69W-94-13	8.69	15.99	need lock
ZMM-99-24X	7.74	15.87	need lock
69W-94-14	9.47	15.03	need lock
ZMM-95-15X	7.43	14.56	no lock
ZWM-01-25X	7.37	15.98	no lock
ZMM-01-26X	8.79	15.84	no lock
ZMM-95-18X	5.51	15.18	no lock
69WP-08-01	4.62	12.27	no cap
69WP-13-01	4.07	12.28	N/A
• Will Brook pizo			
• ZWP-95-02X	6.14	14.41	no lock
• ZWP-95-01X	7.96	14.33	no lock
ZWM-99-99-22X	8.08	14.12	✓
ZWM-95-17X	7.59	24.49	no lock
ZWM-99-23X	7.38	15.14	

Location

Date 10/25/16

Project / Client

Setup on ZWM-99-23X

Time	DTW	DO	ORP	Turb	Spec	ph	Temp
1115	7.54	1.90	-122.9	15.9	722	8.84	13.32
1120	7.54	2.76	-121.3	6.45	720	8.80	13.47
1125	7.54	2.56	-113.0	5.37	715	8.87	13.52
1130	7.54	2.22	-112.0	5.01	704	8.84	13.44
1135	7.54	2.17	-111.1	4.97	703	8.83	13.41
1140	7.54	2.14	-110.3	4.89	702	8.82	13.43

collected sample @ 1145

(2) Hel Amb ; (1) FP HNO3

Setup on ZWM-01-25X

Time	DTW	DO	ORP	Turb	Spec	ph	Temp
1205	7.58	6.67	-81.6	10.35	815	7.42	13.24
1210	7.58	6.25	-79.5	10.47	821	7.44	13.42
1215	7.58	5.83	-78.0	10.82	822	7.44	13.44
1220	7.58	5.47	-77.8	10.47	820	7.41	13.48
1225	7.58	5.39	-77.3	10.35	819	7.42	13.49
1230	7.58	5.37	-77.1	10.21	817	7.41	13.47

collected sample @ 1235



DCL

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/12/16

Project Location: Devens Consolidation Landfill Project #: _____

Personnel: WGA

WELL IDENTIFICATION: LFM-99-05A Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		
Bolts Present (Pad Wells)			✓
Locked (Stickup Wells)	✓		

Photograph

Well Information

Diameter: 2" Depth to Water: 26.61 (ft)

Material: PVC Depth to Bottom: 30.59 (ft)

Screen Interval: 20.68 - 29.98

SAMPLING TYPE, TUBING DETAILS

Purging Method: geotech 1 Well Volume (gal): _____ Tubing Type: Poly Pump S/N: _____

Purge Start Time: 1025 Air Source: N/A Tubing Diameter: ¼"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
1025	100	26.75	10.51	707	5.31	6.89	65.9	128	cloudy
1030	↓	↓	10.40	697	5.21	6.63	68.7	101	↓
1035			10.34	683	5.09	6.59	72.5	89.4	
1040			10.38	683	4.84	6.42	75.9	58.6	
1045			10.28	683	4.74	6.40	76.9	42.3	
1050			10.18	683	4.81	6.38	78.6	32.6	↓
1055			10.25	684	4.96	6.37	80.9	18.9	clear
1100			10.18	686	4.64	6.37	80.0	11.9	
1105			10.25	653	4.65	6.36	80.3	9.4	↓
1110			10.26	646	4.67	6.36	81.0	8.7	
1115	↓	↓	10.26	645	4.66	6.35	81.4	8.5	↓

total 5,000 mL

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm

DUPLICATE: Y (N)

MS/MSD: Y (N)

SAMPLED BY (PRINT): Liam G. Anderson SAMPLER(S) SIGNATURES: [signature] SAMPLING START TIME: 1120 SAMPLING END TIME: _____

NOTES:

Collected Sample @ 1120

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/12/16

Project Location: Devens Consolidation Landfill Project #: _____

Personnel: KGA

WELL IDENTIFICATION: LFM-99-02B Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		
Bolts Present (Pad Wells)			✓
Locked (Stickup Wells)	✓		

Photograph

Well Information

Diameter: 2" Depth to Water: 2.64 (ft)

Material: PVC Depth to Bottom: 26.43 (ft)

Screen Interval: 16.53 – 25.83

SAMPLING TYPE, TUBING DETAILS

Purging Method: peristaltic 1 Well Volume (gal): _____ Tubing Type: poly Pump S/N: _____

Purge Start Time: 1350 Air Source: N/A Tubing Diameter: 1/4"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
1350	100	2.70	11.37	926	5.90	6.57	57.7	4.31	clear
1355			11.34	920	5.50	6.45	70.3	2.49	
1400			11.58	923	5.58	6.43	72.7	2.31	
1405			11.90	929	5.79	6.43	73.7	2.06	
1410			11.83	933	5.81	6.43	76.2	1.83	
1415			11.85	934	5.80	6.43	77.7	1.79	
1420			11.86	937	5.82	6.44	77.8	1.73	

total: 3,000 mL

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm

DUPLICATE: Y (N)

MS/MSD: Y (N)

SAMPLED BY (PRINT): Kara B. Anderson SAMPLER(S) SIGNATURES: SAMPLING START TIME: 1425 SAMPLING END TIME:

NOTES:

collected Sample @ 1425

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/13/16

Project Location: Devens Consolidation Landfill Project #: _____

Personnel: LLBA

WELL IDENTIFICATION: LFM-99-06A -RP Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		
Bolts Present (Pad Wells)			✓
Locked (Stickup Wells)	✓		

Photograph

Well Information
Diameter: 2" Depth to Water: 19.02 (ft)
Material: PVC Depth to Bottom: 34.86 (ft)
Screen Interval: 10.09 - 18.39

SAMPLING TYPE, TUBING DETAILS

Purging Method: peristaltic 1 Well Volume (gal): _____ Tubing Type: poly Pump S/N: _____
Purge Start Time: 815 Air Source: N/A Tubing Diameter: 1/4"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
815	150	19.17	11.07	855	5.40	7.14	64.5	17.2	clear
820	↓	↓	10.76	838	4.85	6.87	60.0	13.7	↓
825			10.78	826	4.87	6.72	63.7	12.9	
830			10.81	822	4.91	6.70	65.6	11.4	
835			10.76	821	4.87	6.69	66.6	9.7	
840			10.75	820	4.87	6.68	67.3	9.4	
845	↓	↓	10.74	819	4.86	6.67	68.3	9.2	↓

total: 4,500 mL

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm
DUPLICATE: (Y) N DUP-1 @ 1100
MS/MSD: (Y) N

SAMPLED BY (PRINT): Elizabeth Anderson
SAMPLER(S) SIGNATURES:
SAMPLING START TIME: 850
SAMPLING END TIME:

NOTES:
collected Sample @ 850 ; collected MS/MSD

collected DUP-1 @ 1100

Instrument Calibration Log

Project/Site Name: Deers DCL **Date:** 10/12/16, 10/13/16 **Weather:**

Calibrated By: LGA **Instrument:** YSI 556 MPS **Serial Number:** 11J102413

Parameters	Morning Calibration 10/12	Morning Calibration 10/13	Cal. Temperature °C 10/12	Cal. Temperature °C 10/13	Afternoon Cal. Check 10/12	Afternoon Cal. Check 10/13	Comments
Conductivity (µS/cm°)	1.413	1.412	21.13	22.10	1.411	*AM only*	
pH (7)	7.00	7.02			7.03		
pH (4)	4.00	3.96			4.03		
pH (10)	9.97	9.97			10.06		
ORP (mv)	241.0	240.2			241.2		
Dissolved Oxygen (%)	101%	99.7%			103.0%		
Zero Dissolved Oxygen (mg/L)	—	—			—		
Barometric Pressure (mmHg)	760	760			760		

Signature: _____ Date: 10/13/16

Instrument Calibration Log

Project/Site Name: Devers DCL **Calibrated By:** KBA

Instrument/Serial Number	Pre-Cal 0-AM (NTU)	Pre-Cal 0-PM (NTU)	Pre-Cal 10-AM (NTU)	Pre-Cal 10-PM (NTU)	Post-Cal 0-AM (NTU)	Post-Cal 0-PM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-PM (NTU)	Date
2020WE - 3597	0.03	0.01	10.06	10.02	0.00	0.00	10.00	10.00	10/12
"	0.01	AM only	9.97	AM only	0.00	AM only	10.00	AM only	10/13

Signature: [signature] **Date:** 10/13/16

AOC 69W

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _69W-94-13

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1540_____ **End Time:** _1605_____
Well Construction: ___PVC_____
Depth to Water: ___8.69 ft_____
Well Depth: _____15.99 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^{c})	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1540	200	8.68	13.84	8.05	1300	2.15	-94.7	8.64	Clear
1545	200	8.68	14.34	8.02	1337	2.91	-88.4	7.03	Clear
1550	200	8.68	14.47	7.91	1339	1.93	-99.7	5.99	Clear
1555	200	8.68	14.48	7.89	1341	1.88	-102.0	5.97	Clear
1600	200	8.68	14.47	7.90	1342	1.79	-103.7	5.96	Clear
total	4,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1605				

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-94-14

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1330_____ **End Time:** _1355_____
Well Construction: ___PVC_____
Depth to Water: ___9.47 ft_____
Well Depth: _____15.03 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1330	200	9.68	12.63	7.15	690	3.10	-86.7	15.4	Clear
1335	200	9.68	12.92	7.13	704	2.90	-93.8	14.9	Clear
1340	200	9.68	13.11	7.12	709	3.03	-88.1	14.1	Clear
1345	200	9.68	13.09	7.12	707	3.01	-87.3	14.0	Clear
1350	200	9.68	13.12	7.11	706	3.07	-86.9	13.7	Clear
total:	4,000 mL								

Acceptance Criteria:	<0.3ft	3%	±0.1	3%	10%	± 10mv	10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1355				

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _69WP-08-01

Date: _____ 10/26/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _0815_____ **End Time:** _0840_____
Well Construction: ___PVC_____
Depth to Water: _____4.67 ft_____
Well Depth: _____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0815	100	4.67	10.13	6.77	696	2.56	-110.3	76.8	Cloudy
0820	100	4.67	10.69	6.82	657	1.31	-104.7	52.7	Cloudy
0825	100	4.67	10.73	6.82	656	0.84	-103.2	50.5	Cloudy
0830	100	4.67	10.71	6.8	658	0.79	-101.7	49.6	Cloudy
0835	100	4.67	10.70	6.79	657	0.76	-100.3	48.2	Cloudy
total: 2,000 mL									

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @0840 submitted for dissolved Mn only.				

Comments

K. Anderson
Signature

10/26/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _69WP-13-01

Date: _____ 10/26/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _0725_____ **End Time:** _0750_____
Well Construction: ___PVC_____
Depth to Water: _____4.12 ft_____
Well Depth: _____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0725	100	4.12	8.44	6.66	450	1.81	-228.3	13.0	Clear
0730	100	4.12	8.60	6.70	462	0.73	-128.7	7.1	Clear
0735	100	4.12	8.57	6.71	463	0.60	-248.7	7.1	Clear
0740	100	4.12	8.61	6.73	466	0.57	-251.7	7.0	Clear
0745	100	4.12	8.73	6.72	468	0.55	-254.6	6.97	Clear
total:	2,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @0750				

Comments

K. Anderson
Signature

10/26/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-01-25X

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1205_____ **End Time:** _1235_____
Well Construction: ___PVC_____
Depth to Water: ____7.37 ft_____
Well Depth: _____15.98 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1205	200	7.58	13.24	7.42	815	6.67	-81.6	10.35	Clear
1210	200	7.58	13.42	7.44	821	6.25	-79.5	10.47	Clear
1215	200	7.58	13.44	7.44	822	5.83	-78.0	10.82	Clear
1220	200	7.58	1.348	7.41	820	5.47	-77.8	10.47	Clear
1225	200	7.58	13.49	7.42	819	5.39	-77.3	10.35	Clear
1230	200	7.58	13.47	7.41	817	5.37	-77.1	10.21	Clear
total:	5,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1235				

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-01-26X

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: __1302_____ **End Time:** _1317_____
Well Construction: ___PVC_____
Depth to Water: ____8.79 ft_____
Well Depth: _____15.84 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1302	200		10.57	7.40	439	6.88	-81.0	43.3	Clear
1307	200		11.01	7.32	437	6.41	-73.7	24.7	Clear
1312	200		11.05	7.30	435	6.37	-72.0	22.9	Clear
1317	200		11.03	730	434	6.32	-71.6	21.6	Clear
total:	3,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: No		Duplicate: No	MS/SD: No	
Notes: No sample collected from this location; parameters only				

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-95-15X

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1415_____ **End Time:** _1440_____
Well Construction: ___PVC_____
Depth to Water: ___7.43 ft_____
Well Depth: _____14.56 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1415	200	7.62	11.49	7.5	119	2.73	-98.7	24.9	Clear
1420	200	7.62	11.69	7.51	100	2.19	-91.1	17.6	Clear
1425	200	7.62	11.78	7.48	89	2.12	-89	14.3	Clear
1430	200	7.62	11.79	7.47	88	2.09	-88.7	13.7	Clear
1435	200	7.62	11.69	7.46	86	2.07	-87.3	13.2	Clear
total: 4,000 mL									

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1440				

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _ AOC 69W
Well ID: _ ZWM-95-17X

Date: _____ 10/25/2016
Sampler: __ K. Anderson
PID: _____ N/A

Start Time: _0645_____ **End Time:** _0700_____
Well Construction: _PVC_____
Depth to Water: _____
Well Depth: 22.2 ft
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0645	150		7.97	6.71	386	6.92	-94.6	2.72	Clear
0650	150		8.72	6.57	389	6.23	-84.7	2.64	Clear
0655	150		8.7	6.5	392	6.08	-82.1	2.59	Clear
0700	150		8.67	6.47	393	6.01	-81.3	2.47	Clear
total:	2,250 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: No		Duplicate: No	MS/SD: No	
Notes: NO sample collected at this location; only parameters.				

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-95-18X

Date: _____ 10/26/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _0900_____ **End Time:** _0930_____
Well Construction: ___PVC_____
Depth to Water: ____5.62 ft_____
Well Depth: ____14 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0900	100	5.62	10.47	6.29	707	7.69	-33.7	3.62	Clear
0905	100	5.62	11.10	6.15	709	6.29	-38.7	3.30	Clear
0910	100	5.62	11.13	6.14	717	6.00	-42.6	2.93	Clear
0915	100	5.62	11.13	6.12	717	5.81	-44.3	2.59	Clear
0920	100	5.62	11.21	6.10	716	5.76	-46.9	2.47	Clear
0925	100	5.62	11.19	6.09	715	5.74	-47.8	2.39	Clear
total	2,500 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @0930				

Comments

K. Anderson
Signature

10/26/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-99-22X

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1630_____ **End Time:** _1730_____
Well Construction: ___PVC_____
Depth to Water: ____8.08 ft_____
Well Depth: _____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1630	150	8.08	15.73	7.86	643	1.89	-107.1	11.2	Clear
1635	150	8.08	15.97	7.81	631	1.39	-110.7	6.97	Clear
1640	150	8.08	15.98	7.88	628	1.18	-137.3	5.90	Clear
1645	150	8.08	15.74	7.81	617	0.99	-150.9	5.47	Clear
1650	150	8.08	15.73	7.80	614	0.97	-147.9	5.39	Clear
1655	150	8.08	15.81	7.79	613	0.94	-143.7	5.30	Clear
total:	3,750 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: Yes 69W-DUP-1	MS/SD: Yes	
Notes: Sample collected @1700		Dup Sample collected @1730		

Comments

K. Anderson
Signature

10/25/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-99-23X

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1115_____ **End Time:** _1145_____
Well Construction: ___PVC_____
Depth to Water: ____7.38 ft_____
Well Depth: _____15.14 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1115	200	7.54	13.37	8.84	722	1.90	-122.9	15.9	Clear
1120	200	7.54	13.47	8.8	720	2.76	-122.3	6.45	Clear
1125	200	7.54	13.52	8.87	715	2.56	-113.0	5.37	Clear
1130	200	7.54	13.44	8.84	704	2.22	-112.0	5.01	Clear
1135	200	7.54	13.41	8.83	703	2.17	-111.1	4.97	Clear
1140	200	7.54	13.43	8.82	702	2.14	-110.3	4.89	Clear
total	5,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1145				

Comments

K. Anderson
Signature

10/26/2016
Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: __ Former Fort Devens LTM
Location: _AOC 69W
Well ID: _ZWM-99-24X

Date: _____ 10/25/2016
Sampler: ___K. Anderson
PID: _____N/A

Start Time: _1455_____ **End Time:** _1520_____
Well Construction: ___PVC_____
Depth to Water: ____7.74 ft_____
Well Depth: _____15.87 ft_____
Water Column: _____
Dedicated Pump in Well?: __No_____

Field Testing Equipment

Make:	Model:	Serial #:
YSI	556MPS	11J102413

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (^{0}C)	pH (STD)	SPC (µS/cm^c)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1455	200	8.18	11.08	7.2	386	7.32	-85.1	4.19	Clear
1500	200	8.18	12.18	8.8	403	8.80	-82.6	3.89	Clear
1505	200	8.18	12.19	8.64	413	8.64	-81.3	3.31	Clear
1510	200	8.18	12.35	8.6	416	8.6	-79.3	3.21	Clear
1515	200	8.18	12.34	8.62	418	8.62	-79.00	3.18	Clear
total:	4,000 mL								

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sampling Details				
Field Filtered: Yes		Duplicate: No	MS/SD: No	
Notes: Sample collected @1520				

Comments

K. Anderson
Signature

10/25/2016
Date



AOC 43G

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/14/16

Project Location: AOC 43G Project #: _____

Personnel: N/A

WELL IDENTIFICATION: AAFES-2 **Headspace (PID)** _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		
Bolts Present (Pad Wells)	✓		✓
Locked (Stickup Wells)	✓		

Photograph

Well Information

Diameter: 2" Depth to Water: 24.88 (ft)

Material: PVC Depth to Bottom: 32.72 (ft)

Screen Interval: 18.3 – 33.3

SAMPLING TYPE, TUBING DETAILS

Purging Method: peristaltic 1 Well Volume (gal): _____ Tubing Type: poly Pump S/N: _____

Purge Start Time: 937 Air Source: N/A Tubing Diameter: ¼"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
~~937~~	150	25.88	11.88	1003	0.78	7.43	26.5		
~~942~~		25.94	11.73	998	0.54	7.36	~~25.9~~		
~~947~~		~~26.04~~	11.77	997	~~0.52~~	7.26	25.2		
~~952~~		26.18	~~11.76~~	~~994~~	0.50	7.24	24.7		
~~957~~		~~26.24~~	11.74	995	0.49	~~7.23~~	24.7		
~~1002~~	↓	26.31	11.75	994	0.48	7.23	24.		
937	150	25.88	11.88	1003	0.78	7.43	-95.0	13.8	clear
942		25.94	11.73	998	0.54	7.36	-93.9	11.69	
947		26.04	11.77	997	0.52	7.26	-84.1	9.81	
952		26.18	11.76	994	0.50	7.24	-81.1	9.70	
957		26.24	11.74	995	0.49	7.23	-80.7	9.69	
1002	↓	26.31	11.75	994	0.48	7.23	-79.9	9.68	↓

total: 3,750 mL

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____µm

DUPLICATE: Y (N)

MS/MSD: (N)

SAMPLED BY (PRINT): Kevin M. Anderson SAMPLER(S) SIGNATURES: [signature] SAMPLING START TIME: 1010 SAMPLING END TIME:

NOTES:

collected sample @ 1010

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/14/16

Project Location: AOC 43G Project #: _____

Personnel: ~~[illegible]~~ KBA

WELL IDENTIFICATION: XGM-94-04X Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		✓
Bolts Present (Pad Wells)	✓		
Locked (Stickup Wells)	✓		

Photograph

Well Information
Diameter: 2" Depth to Water: 22.12 (ft)
Material: PVC Depth to Bottom: 30.74 (ft)
Screen Interval: 20.5 – 30.5

SAMPLING TYPE, TUBING DETAILS

Purging Method: geotech 1 Well Volume (gal): _____ Tubing Type: poly Pump S/N: _____
Purge Start Time: 1050 Air Source: N/A Tubing Diameter: 1/4"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
1050	150	22.18	12.89	985	1.73	7.19	26.5	2.05	clear
1055	↓	↓	12.97	979	1.58	7.15	25.9	5.23	↓
1100			13.00	977	1.45	7.14	25.2	~~4.03~~	
1105			12.99	973	1.27	7.12	24.7	4.01	
1110			13.01	972	1.23	7.11	24.3	3.97	
total: 3,000 mL									

* every 5 to 10 minules, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm
DUPLICATE: Y (N)
MS/MSD: (Y) N

SAMPLED BY (PRINT): Karin L. Anderson SAMPLER(S) SIGNATURES: [signature]
SAMPLING START TIME: 1115 SAMPLING END TIME:

NOTES:
collected sample @ 1115
collected MS / MSD

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/17/16

Project Location: AOC 43G Project #: _____

Personnel: KKA

WELL IDENTIFICATION: XGM-97-12X Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		
Bolts Present (Pad Wells)	✓		✓
Locked (Stickup Wells)			

Photograph

Well Information:
Diameter: 4" Depth to Water: 27.31 (ft)
Material: PVC Depth to Bottom: 33.74 (ft)
Screen Interval: 24 - 34

SAMPLING TYPE, TUBING DETAILS

Purging Method: Geotech 1 Well Volume (gal): _____ Tubing Type: Poly Pump S/N: _____
Purge Start Time: 845 Air Source: N/A Tubing Diameter: 1/4"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
845	150	27.62	13.11	1414	0.41	7.23	-46.0	7.27	clear
850	↓	27.73	13.05	1413	0.24	6.94	-41.7	6.13	↓
855		27.83	13.06	1412	0.23	6.86	-37.6	5.97	
900		27.88	13.28	1417	0.22	6.81	-38.0	5.21	
905		27.90	13.31	1418	0.21	6.80	-39.6	5.14	
910	↓	27.92	13.40	1419	0.20	6.79	-39.3	5.18	↓

total: 3,750 mL

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm
DUPLICATE: (Y) N DUP-1
MS/MSD: Y (N)

SAMPLED BY (PRINT): Kevin B. Anderson SAMPLER(S) SIGNATURES: K. B. A
SAMPLING START TIME: 915 SAMPLING END TIME:

NOTES:
Collected Sample @ 915
DUP-1 collected @ 1000

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/17/16

Project Location: AOC 43G Project #: _____

Personnel: KGA

WELL IDENTIFICATION: XGM-93-02X Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	X		
Concrete Pad Intact	X		
PVC Casing Intact	X		
Well Gripper Present	X		
Bolts Present (Pad Wells)	X		
Locked (Stickup Wells)			X

Photograph

Well Information
Diameter: 4" Depth to Water: 30.44 (ft)
Material: PVC Depth to Bottom: 37.56 (ft)
Screen Interval: 28 - 38

SAMPLING TYPE, TUBING DETAILS

Purging Method: ~~Peristaltic~~ 1 Well Volume (gal): _____ Tubing Type: poly Pump S/N: _____
Purge Start Time: 958 Air Source: N/A Tubing Diameter: 1/4"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
958	150	30.68	13.06	1257	1.30	6.81	-15.5	12.7	Clear
1003	↓	30.73	12.96	1249	0.69	6.76	-15.8	11.12	↓
1008		30.78	12.96	1248	0.60	6.76	-15.5	11.10	
1013		30.83	12.97	1247	0.58	6.75	-15.7	10.97	
1018	↓	30.88	12.96	1247	0.56	6.75	-15.6	10.94	↓

total: 3,000 mL

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3: 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm
DUPLICATE: Y (N)
MS/MSD: Y (N)

SAMPLED BY (PRINT): Kevin Anderson SAMPLER(S) SIGNATURES: [signature] SAMPLING START TIME: 1025 SAMPLING END TIME:

NOTES:
collected Sample @ 1025

KGS

Federal Projects EPA SOP
Low Flow Sampling Log
v.24 Sept 2014

FEDERAL SOP MONITORING WELL LOW FLOW SAMPLING LOG

Project Name: Former Fort Devens Date: 10/17/16

Project Location: AOC 43G Project #: _____

Personnel: KbA

WELL IDENTIFICATION: AAFES-7 Headspace (PID) _____

WELL INTEGRITY

	YES	NO	N/A
Protective Casing Secure	✓		
Concrete Pad Intact	✓		
PVC Casing Intact	✓		
Well Gripper Present	✓		
Bolts Present (Pad Wells)			✓
Locked (Stickup Wells)	✓		

Photograph

Well Information
Diameter: 2" Depth to Water: 13.27 (ft)
Material: PVC Depth to Bottom: 16.89 (ft)
Screen Interval: 4.5 – 14.5

SAMPLING TYPE, TUBING DETAILS

Purging Method: geotech 1 Well Volume (gal): _____ Tubing Type: poly Pump S/N: _____
Purge Start Time: 1110 Air Source: geotech Tubing Diameter: 1/4"

STABILIZATION PARAMETERS

TIME (min)*	FLOW RATE (mL/min) (100-500 mL/min)**	DEPTH TO WATER (feet) (+/- 0.3')**	TEMP (°C) (+/- 3%)**	SPECIFIC COND (µS/cm) (+/- 3%)**	DISSOLVED OXYGEN (mg/L) (+/- 10%)or <0.5**	pH (+/- 0.1)**	ORP (mV) (+/- 10mV)**	TURBIDITY (NTU) (+/- 10%)or <5**	COLOR/ CLARITY
1110	100	14.87	13.43	1173	4.72	6.62	58.8	14.2	clear
1115		15.33	12.97	1172	3.69	6.53	64.7	12.3	
1120		15.77	12.99	1175	3.42	6.52	65.3	11.09	
1125		15.78	13.45	1165	3.37	6.52	66.5	9.70	
1130		15.78	13.60	1159	3.29	6.53	66.6	9.60	
1135	↓	15.78	13.62	1157	3.28	6.52	66.8	9.58	↓

total: 2,500 mL

DTW @ tubing intake

* every 5 to 10 minutes, depending on volume of flow-through cell, from EPA Region 1 Low-Flow SOP version 3 1-19-2010

SAMPLING DETAILS

FIELD-FILTERED: Y (N) FILTER SIZE: _____ µm
DUPLICATE: Y (N)
MS/MSD: Y (N)

SAMPLED BY (PRINT): Kristen Anderson SAMPLER(S) SIGNATURES: [signature]
SAMPLING START TIME: 1140 SAMPLING END TIME:

NOTES:
collected sample @ 1140 for Mn only

Instrument Calibration Log

Project/Site Name: AEC 436 **Calibrated By:** MBA

Instrument/Serial Number	Pre-Cal 0-AM (NTU)	Pre-Cal 0-PM (NTU)	Pre-Cal 10-AM (NTU)	Pre-Cal 10-PM (NTU)	Post-Cal 0-AM (NTU)	Post-Cal 0-PM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-PM (NTU)	Date
LaMotte 2020e – 3597	0.07	0.03	10.06	10.01	0.00	0.00	10.00	10.00	10/14/16
"	0.03	0.01	10.01	9.99	0.00	0.00	10.00	10.00	10/17/16

Signature: _____ Date: 10/17/16

Instrument Calibration Log

Project/Site Name: AOC 436 **Date:** 10/14/16 10/17/16 **Weather:** Clear

Calibrated By: KBA **Instrument:** YSI 556 ~~MPS~~ **Serial Number:** 11J102413

Parameters	Morning Calibration 10/14/16	Morning Calibration 10/17/16	Cal. Temperature °C 10/14/16	Cal. Temperature °C 10/17/16	Afternoon Cal. Check 10/14/16	Afternoon Cal. Check 10/17/16	Comments
Conductivity (µS/cm°)	1.412	1.413	21.37	22.01	1.413	1.411	✓
pH (7)	6.97	7.01			6.99	7.02	
pH (4)	4.03	3.98			4.00	3.97	
pH (10)	10.07	10.01			10.03	10.00	
ORP (mv)	242.6	241.0			241.7	240.3	
Dissolved Oxygen (%)	99.7%	101.2%			101.7%	99.9%	
Zero Dissolved Oxygen (mg/L)	–	–			–	–	
Barometric Pressure (mmHg)	760	760			760	760	

Signature: [signature] Date: 10/17/16

APPENDIX B

LABORATORY ANALYTICAL DATA and DATA QUALITY EVALUATION REPORTS



APPENDIX B.1
LABORATORY ANALYTICAL DATA (CD Only)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-126189-1
Client Project/Site: Deven's Consolidated Landfill

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
6/28/2016 3:57:46 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-126189-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Deven's Consolidated Landfill

Report Number: 680-126189-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 06/09/2016 and 06/10/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.5º C, 2.4º C, 2.8º C, 2.8º C, 3.4º C, 3.6º C and 3.6º C.

PESTICIDES AND PCBS
Samples LFM-99-02B_SPR16 (680-126246-1), LFM 99-05A-0616 (680-126189-2), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for Pesticides and PCBs in accordance with EPA SW-846 Method 8081B_8082A. The samples were prepared on 06/13/2016 and 06/15/2016 and analyzed on 06/15/2016 and 06/16/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples LFM-99-02B_SPR16 (680-126246-1), LFM 99-05A-0616 (680-126189-2), LFM-99-06A_SPR16 (680-126246-2), DUP-1 (680-126246-3), LFM 99 02B-H (680-126189-6) and LFM 99 06A-H (680-126189-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 06/15/2016 and analyzed on 06/16/2016 and 06/18/2016.

Sodium exceeded the recovery criteria low for the MS/MSD of sample LFM-99-02B_SPR16 (680-126246-1) in batch 680-438008.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples LFM-99-02B_SPR16 (680-126246-1)[10X], LFM-99-06A_SPR16 (680-126246-2)[10X], DUP-1 (680-126246-3)[10X] and LFM 99 06A-H (680-126246-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS
Samples LFM-99-02B_SPR16 (680-126246-1), LFM 99-05A-0616 (680-126189-2), LFM-99-06A_SPR16 (680-126246-2), DUP-1 (680-126246-3), LFM 99 02B-H (680-126189-6) and LFM 99 06A-H (680-126189-7) were analyzed for Metals in accordance with EPA SW-846 Method 6020. The samples were prepared on 06/15/2016 and analyzed on 06/16/2016.

The interference check standard solution (ICSA) associated with the following samples showed results for chromium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element / these elements and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution. (ICSA 680-437616/19)

Job ID: 680-126189-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples LFM-99-02B_SPR16 (680-126246-1), LFM 99-05A-0616 (680-126189-2), LFM-99-06A_SPR16 (680-126246-2), DUP-1 (680-126246-3), LFM 99 02B-H (680-126189-6) and LFM 99 06A-H (680-126189-7) were analyzed for mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 06/13/2016 and analyzed on 06/14/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples LFM 99-05A-0616 (680-126189-1), LFM-99-02B_SPR16 (680-126246-1), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 06/14/2016 and 06/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Samples LFM 99-05A-0616 (680-126189-1), LFM-99-02B_SPR16 (680-126246-1), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on 06/10/2016 and 06/14/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples LFM 99-05A-0616 (680-126189-1), LFM-99-02B_SPR16 (680-126246-1), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 06/14/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHEMICAL OXYGEN DEMAND
Samples LFM 99-05A-0616 (680-126189-1), LFM-99-02B_SPR16 (680-126246-1), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for chemical oxygen demand in accordance with EPA Method 410.4. The samples were analyzed on 06/15/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CYANIDE
Samples LFM-99-02B_SPR16 (680-126246-1), LFM 99-05A-0616 (680-126189-2), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 06/13/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

9056 ANIONS
Samples LFM-99-02B_SPR16 (680-126246-1), LFM 99-05A-0616 (680-126189-2), LFM-99-06A_SPR16 (680-126246-2) and DUP-1 (680-126246-3) were analyzed for 9056 Anions in accordance with SW 846 9056. The samples were analyzed on 06/17/2016.

Samples LFM-99-02B_SPR16 (680-126246-1)[10X], LFM 99-05A-0616 (680-126246-2)[10X], LFM-99-06A_SPR16 (680-126246-2)[10X] and DUP-1 (680-126246-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Subcontract Work

Job ID: 680-126189-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Methods MA EPH, MA VPH: These methods were subcontracted to Katahdin Analytical Services Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-126189-1	LFM 99-05A-0616	Water	06/08/16 12:30	06/09/16 09:05
680-126189-2	LFM 99-05A-0616	Water	06/08/16 12:30	06/10/16 09:29
680-126189-3	LFM 99 02B-H	Water	06/08/16 09:47	06/09/16 09:05
680-126189-4	LFM 99 06A-H	Water	06/08/16 13:57	06/09/16 09:05
680-126189-5	LFM 99 05A-H	Water	06/08/16 09:12	06/09/16 09:05
680-126189-6	LFM 99 02B-H	Water	06/08/16 09:47	06/10/16 09:29
680-126189-7	LFM 99 06A-H	Water	06/08/16 13:57	06/10/16 09:29
680-126189-8	Trip Blank	Water	06/08/16 00:00	06/09/16 09:05
680-126246-1	LFM-99-02B_SPR16	Water	06/09/16 10:40	06/10/16 09:29
680-126246-2	LFM-99-06A_SPR16	Water	06/09/16 09:25	06/10/16 09:29
680-126246-3	DUP-1	Water	06/09/16 00:00	06/10/16 09:29

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Method	Method Description	Protocol	Laboratory
8081B 8082A	Organochlorine Pesticides & PCBs (GC)	SW846	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
410.4	COD	MCAWW	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL SAV
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
MA EPH	MADEP EPH (Extractable Petroleum Hydroca	NONE	
MA VPH	MADEP VPH Volatile Petroleum Hydrocarbon	NONE	

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
D	The reported value is from a dilution.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: LFM 99-05A-0616

Lab Sample ID: 680-126189-1
Date Collected: 06/08/16 12:30
Matrix: Water
Date Received: 06/09/16 09:05

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	**2.9**		0.10	0.019	mg/L			06/14/16 13:23	1
Chemical Oxygen Demand	10	U	20	4.1	mg/L			06/15/16 08:59	1
Alkalinity	**100**		5.0	1.1	mg/L			06/14/16 11:29	1
Total Dissolved Solids (TDS)	**470**		10	4.7	mg/L			06/10/16 17:32	1

Client Sample ID: LFM 99-05A-0616

Lab Sample ID: 680-126189-2
Date Collected: 06/08/16 12:30
Matrix: Water
Date Received: 06/10/16 09:29

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	0.012	U	0.048	0.0060	ug/L		06/13/16 15:39	06/15/16 15:44	1
4,4'-DDE	0.012	U	0.048	0.0048	ug/L		06/13/16 15:39	06/15/16 15:44	1
4,4'-DDT	0.012	U	0.048	0.0067	ug/L		06/13/16 15:39	06/15/16 15:44	1
Aldrin	0.012	U	0.048	0.0068	ug/L		06/13/16 15:39	06/15/16 15:44	1
alpha-BHC	0.0071	U	0.048	0.0032	ug/L		06/13/16 15:39	06/15/16 15:44	1
beta-BHC	0.012	U	0.048	0.0087	ug/L		06/13/16 15:39	06/15/16 15:44	1
delta-BHC	0.012	U	0.048	0.0071	ug/L		06/13/16 15:39	06/15/16 15:44	1
Dieldrin	0.0071	U	0.048	0.0036	ug/L		06/13/16 15:39	06/15/16 15:44	1
Endosulfan I	0.0071	U	0.048	0.0033	ug/L		06/13/16 15:39	06/15/16 15:44	1
Endosulfan II	0.012	U	0.048	0.0040	ug/L		06/13/16 15:39	06/15/16 15:44	1
Endosulfan sulfate	0.012	U	0.048	0.0048	ug/L		06/13/16 15:39	06/15/16 15:44	1
Endrin	0.012	U	0.048	0.0050	ug/L		06/13/16 15:39	06/15/16 15:44	1
Endrin aldehyde	0.012	U	0.048	0.0058	ug/L		06/13/16 15:39	06/15/16 15:44	1
Endrin ketone	0.012	U	0.048	0.0044	ug/L		06/13/16 15:39	06/15/16 15:44	1
gamma-BHC (Lindane)	0.0071	U	0.048	0.0034	ug/L		06/13/16 15:39	06/15/16 15:44	1
Heptachlor	0.012	U	0.048	0.0068	ug/L		06/13/16 15:39	06/15/16 15:44	1
Heptachlor epoxide	0.0071	U	0.048	0.0035	ug/L		06/13/16 15:39	06/15/16 15:44	1
Methoxychlor	0.012	U	0.048	0.0093	ug/L		06/13/16 15:39	06/15/16 15:44	1
Chlordane (technical)	0.15	U	0.48	0.090	ug/L		06/13/16 15:39	06/15/16 15:44	1
Toxaphene	0.76	U	4.8	0.38	ug/L		06/13/16 15:39	06/15/16 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*14 - 130*	*06/13/16 15:39*	*06/15/16 15:44*	*1*
Tetrachloro-m-xylene	*53*		*44 - 124*	*06/13/16 15:39*	*06/15/16 15:44*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**	**D**	5.0	2.0	mg/L			06/17/16 04:27	10
Sulfate	**22**		1.0	0.40	mg/L			06/17/16 03:00	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**150**	**J**	200	24	ug/L		06/15/16 08:41	06/16/16 21:15	1
Antimony	15	U	20	5.3	ug/L		06/15/16 08:41	06/16/16 21:15	1
Barium	**14**		10	1.7	ug/L		06/15/16 08:41	06/16/16 21:15	1
Beryllium	0.30	U	4.0	0.10	ug/L		06/15/16 08:41	06/16/16 21:15	1
Cadmium	3.0	U	5.0	1.0	ug/L		06/15/16 08:41	06/16/16 21:15	1
Calcium	**66000**		500	25	ug/L		06/15/16 08:41	06/16/16 21:15	1
Chromium	4.0	U	10	1.6	ug/L		06/15/16 08:41	06/16/16 21:15	1

Client Sample ID: LFM 99-05A-0616

Date Collected: 06/08/16 12:30
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126189-2
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:15	1
Copper	5.0	U	20	1.8	ug/L		06/15/16 08:41	06/16/16 21:15	1
Iron	**300**		50	17	ug/L		06/15/16 08:41	06/16/16 21:15	1
Lead	10	U	10	3.9	ug/L		06/15/16 08:41	06/16/16 21:15	1
Magnesium	**8100**		500	33	ug/L		06/15/16 08:41	06/16/16 21:15	1
Manganese	**11**		10	1.0	ug/L		06/15/16 08:41	06/16/16 21:15	1
Nickel	**2.4**	**J**	40	2.1	ug/L		06/15/16 08:41	06/16/16 21:15	1
Potassium	**1700**		1000	17	ug/L		06/15/16 08:41	06/16/16 21:15	1
Selenium	20	U	20	9.9	ug/L		06/15/16 08:41	06/16/16 21:15	1
Silver	1.5	U	10	0.60	ug/L		06/15/16 08:41	06/16/16 21:15	1
Sodium	**79000**		1000	480	ug/L		06/15/16 08:41	06/16/16 21:15	1
Thallium	15	U	25	6.0	ug/L		06/15/16 08:41	06/16/16 21:15	1
Vanadium	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:15	1
Zinc	20	U	20	7.0	ug/L		06/15/16 08:41	06/16/16 21:15	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.7**	**J**	3.0	1.5	ug/L		06/15/16 08:41	06/16/16 04:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 13:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0025	mg/L		06/13/16 06:05	06/13/16 11:56	1

Client Sample ID: LFM 99 02B-H

Date Collected: 06/08/16 09:47
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126189-6
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	70	U	200	24	ug/L		06/15/16 08:41	06/16/16 21:20	1
Antimony	15	U	20	5.3	ug/L		06/15/16 08:41	06/16/16 21:20	1
Barium	**3.3**	**J**	10	1.7	ug/L		06/15/16 08:41	06/16/16 21:20	1
Beryllium	0.30	U	4.0	0.10	ug/L		06/15/16 08:41	06/16/16 21:20	1
Cadmium	3.0	U	5.0	1.0	ug/L		06/15/16 08:41	06/16/16 21:20	1
Calcium	**42000**		500	25	ug/L		06/15/16 08:41	06/16/16 21:20	1
Chromium	4.0	U	10	1.6	ug/L		06/15/16 08:41	06/16/16 21:20	1
Cobalt	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:20	1
Copper	5.0	U	20	1.8	ug/L		06/15/16 08:41	06/16/16 21:20	1
Iron	**25**	**J**	50	17	ug/L		06/15/16 08:41	06/16/16 21:20	1
Lead	10	U	10	3.9	ug/L		06/15/16 08:41	06/16/16 21:20	1
Magnesium	**6100**		500	33	ug/L		06/15/16 08:41	06/16/16 21:20	1
Manganese	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:20	1
Nickel	5.0	U	40	2.1	ug/L		06/15/16 08:41	06/16/16 21:20	1
Potassium	**1600**		1000	17	ug/L		06/15/16 08:41	06/16/16 21:20	1
Selenium	20	U	20	9.9	ug/L		06/15/16 08:41	06/16/16 21:20	1
Silver	1.5	U	10	0.60	ug/L		06/15/16 08:41	06/16/16 21:20	1

Client Sample ID: LFM 99 02B-H

Lab Sample ID: 680-126189-6

Date Collected: 06/08/16 09:47

Matrix: Water

Date Received: 06/10/16 09:29

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**67000**		1000	480	ug/L		06/15/16 08:41	06/16/16 21:20	1
Thallium	15	U	25	6.0	ug/L		06/15/16 08:41	06/16/16 21:20	1
Vanadium	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:20	1
Zinc	20	U	20	7.0	ug/L		06/15/16 08:41	06/16/16 21:20	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	1.5	ug/L		06/15/16 08:41	06/16/16 08:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 13:32	1

Client Sample ID: LFM 99 06A-H

Lab Sample ID: 680-126189-7

Date Collected: 06/08/16 13:57

Matrix: Water

Date Received: 06/10/16 09:29

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2000**		200	24	ug/L		06/15/16 08:41	06/16/16 21:25	1
Antimony	15	U	20	5.3	ug/L		06/15/16 08:41	06/16/16 21:25	1
Barium	**14**		10	1.7	ug/L		06/15/16 08:41	06/16/16 21:25	1
Beryllium	0.30	U	4.0	0.10	ug/L		06/15/16 08:41	06/16/16 21:25	1
Cadmium	3.0	U	5.0	1.0	ug/L		06/15/16 08:41	06/16/16 21:25	1
Calcium	**75000**		500	25	ug/L		06/15/16 08:41	06/16/16 21:25	1
Chromium	**6.0**	**J**	10	1.6	ug/L		06/15/16 08:41	06/16/16 21:25	1
Cobalt	**1.9**	**J**	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:25	1
Copper	**3.6**	**J**	20	1.8	ug/L		06/15/16 08:41	06/16/16 21:25	1
Iron	**3800**		50	17	ug/L		06/15/16 08:41	06/16/16 21:25	1
Lead	10	U	10	3.9	ug/L		06/15/16 08:41	06/16/16 21:25	1
Magnesium	**9400**		500	33	ug/L		06/15/16 08:41	06/16/16 21:25	1
Manganese	**66**		10	1.0	ug/L		06/15/16 08:41	06/16/16 21:25	1
Nickel	**10**	**J**	40	2.1	ug/L		06/15/16 08:41	06/16/16 21:25	1
Potassium	**3000**		1000	17	ug/L		06/15/16 08:41	06/16/16 21:25	1
Selenium	20	U	20	9.9	ug/L		06/15/16 08:41	06/16/16 21:25	1
Silver	1.5	U	10	0.60	ug/L		06/15/16 08:41	06/16/16 21:25	1
Sodium	**190000**	**D**	10000	4800	ug/L		06/15/16 08:41	06/18/16 01:37	10
Thallium	15	U	25	6.0	ug/L		06/15/16 08:41	06/16/16 21:25	1
Vanadium	**2.5**	**J**	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:25	1
Zinc	**13**	**J**	20	7.0	ug/L		06/15/16 08:41	06/16/16 21:25	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.7**		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 04:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 13:37	1

Client Sample ID: LFM-99-02B_SPR16

Date Collected: 06/09/16 10:40
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-1

Matrix: Water

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.013	U	0.049	0.0071	ug/L		06/15/16 14:33	06/16/16 19:25	1
alpha-BHC	0.0074	U	0.049	0.0034	ug/L		06/15/16 14:33	06/16/16 19:25	1
beta-BHC	0.013	U	0.049	0.0090	ug/L		06/15/16 14:33	06/16/16 19:25	1
Chlordane (technical)	0.16	U	0.49	0.094	ug/L		06/15/16 14:33	06/16/16 19:25	1
4,4'-DDD	0.013	U	0.049	0.0062	ug/L		06/15/16 14:33	06/16/16 19:25	1
4,4'-DDE	0.013	U	0.049	0.0050	ug/L		06/15/16 14:33	06/16/16 19:25	1
4,4'-DDT	0.013	U	0.049	0.0069	ug/L		06/15/16 14:33	06/16/16 19:25	1
delta-BHC	0.013	U	0.049	0.0074	ug/L		06/15/16 14:33	06/16/16 19:25	1
Dieldrin	0.0074	U	0.049	0.0037	ug/L		06/15/16 14:33	06/16/16 19:25	1
Endosulfan I	0.0074	U	0.049	0.0035	ug/L		06/15/16 14:33	06/16/16 19:25	1
Endosulfan II	0.013	U	0.049	0.0041	ug/L		06/15/16 14:33	06/16/16 19:25	1
Endosulfan sulfate	0.013	U	0.049	0.0050	ug/L		06/15/16 14:33	06/16/16 19:25	1
Endrin	0.013	U	0.049	0.0052	ug/L		06/15/16 14:33	06/16/16 19:25	1
Endrin aldehyde	0.013	U	0.049	0.0060	ug/L		06/15/16 14:33	06/16/16 19:25	1
Endrin ketone	0.013	U	0.049	0.0045	ug/L		06/15/16 14:33	06/16/16 19:25	1
gamma-BHC (Lindane)	0.0074	U	0.049	0.0036	ug/L		06/15/16 14:33	06/16/16 19:25	1
Heptachlor	0.013	U	0.049	0.0070	ug/L		06/15/16 14:33	06/16/16 19:25	1
Heptachlor epoxide	0.0074	U	0.049	0.0036	ug/L		06/15/16 14:33	06/16/16 19:25	1
Methoxychlor	0.013	U	0.049	0.0097	ug/L		06/15/16 14:33	06/16/16 19:25	1
Toxaphene	0.79	U	4.9	0.39	ug/L		06/15/16 14:33	06/16/16 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*14 - 130*	*06/15/16 14:33*	*06/16/16 19:25*	*1*
Tetrachloro-m-xylene	*51*		*44 - 124*	*06/15/16 14:33*	*06/16/16 19:25*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**230**	**D**	5.0	2.0	mg/L			06/17/16 04:44	10
Sulfate	**17**		1.0	0.40	mg/L			06/17/16 00:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	70	U J	200	24	ug/L		06/15/16 08:41	06/16/16 21:30	1
Antimony	15	U J	20	5.3	ug/L		06/15/16 08:41	06/16/16 21:30	1
Barium	**7.2**	**J**	10	1.7	ug/L		06/15/16 08:41	06/16/16 21:30	1
Beryllium	0.30	U J	4.0	0.10	ug/L		06/15/16 08:41	06/16/16 21:30	1
Cadmium	3.0	U J	5.0	1.0	ug/L		06/15/16 08:41	06/16/16 21:30	1
Calcium	**48000**	**J**	500	25	ug/L		06/15/16 08:41	06/16/16 21:30	1
Chromium	4.0	U J	10	1.6	ug/L		06/15/16 08:41	06/16/16 21:30	1
Cobalt	3.0	U J	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:30	1
Copper	5.0	U J	20	1.8	ug/L		06/15/16 08:41	06/16/16 21:30	1
Iron	50	U J	50	17	ug/L		06/15/16 08:41	06/16/16 21:30	1
Lead	10	U J	10	3.9	ug/L		06/15/16 08:41	06/16/16 21:30	1
Magnesium	**5300**	**J**	500	33	ug/L		06/15/16 08:41	06/16/16 21:30	1
Manganese	3.0	U J	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:30	1
Nickel	5.0	U J	40	2.1	ug/L		06/15/16 08:41	06/16/16 21:30	1
Potassium	**2300**	**J**	1000	17	ug/L		06/15/16 08:41	06/16/16 21:30	1
Selenium	20	U J	20	9.9	ug/L		06/15/16 08:41	06/16/16 21:30	1
Silver	1.5	U J	10	0.60	ug/L		06/15/16 08:41	06/16/16 21:30	1
Sodium	**130000**	**J D**	10000	4800	ug/L		06/15/16 08:41	06/18/16 01:42	10

Client Sample ID: LFM-99-02B_SPR16

Lab Sample ID: 680-126246-1
Date Collected: 06/09/16 10:40
Matrix: Water
Date Received: 06/10/16 09:29

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	15	U J	25	6.0	ug/L		06/15/16 08:41	06/16/16 21:30	1
Vanadium	3.0	U J	10	1.0	ug/L		06/15/16 08:41	06/16/16 21:30	1
Zinc	20	U J	20	7.0	ug/L		06/15/16 08:41	06/16/16 21:30	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0	U J	3.0	1.5	ug/L		06/15/16 08:41	06/16/16 05:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 12:10	1

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.60**		0.10	0.019	mg/L			06/14/16 13:25	1
Chemical Oxygen Demand	10	U	20	4.1	mg/L			06/15/16 08:59	1
Cyanide, Total	0.0050	U	0.010	0.0025	mg/L		06/13/16 09:00	06/13/16 12:25	1
Alkalinity	**71**		5.0	1.1	mg/L			06/14/16 11:34	1
Total Dissolved Solids (TDS)	**530**		10	4.7	mg/L			06/14/16 15:46	1

Client Sample ID: LFM-99-06A_SPR16

Lab Sample ID: 680-126246-2
Date Collected: 06/09/16 09:25
Matrix: Water
Date Received: 06/10/16 09:29

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.012	U	0.048	0.0069	ug/L		06/15/16 14:33	06/16/16 19:40	1
alpha-BHC	0.0072	U	0.048	0.0033	ug/L		06/15/16 14:33	06/16/16 19:40	1
beta-BHC	0.012	U	0.048	0.0087	ug/L		06/15/16 14:33	06/16/16 19:40	1
Chlordane (technical)	0.15	U	0.48	0.091	ug/L		06/15/16 14:33	06/16/16 19:40	1
4,4'-DDD	0.012	U	0.048	0.0060	ug/L		06/15/16 14:33	06/16/16 19:40	1
4,4'-DDE	0.012	U	0.048	0.0049	ug/L		06/15/16 14:33	06/16/16 19:40	1
4,4'-DDT	0.012	U	0.048	0.0067	ug/L		06/15/16 14:33	06/16/16 19:40	1
delta-BHC	0.012	U	0.048	0.0072	ug/L		06/15/16 14:33	06/16/16 19:40	1
Dieldrin	0.0072	U	0.048	0.0036	ug/L		06/15/16 14:33	06/16/16 19:40	1
Endosulfan I	0.0072	U	0.048	0.0033	ug/L		06/15/16 14:33	06/16/16 19:40	1
Endosulfan II	0.012	U	0.048	0.0040	ug/L		06/15/16 14:33	06/16/16 19:40	1
Endosulfan sulfate	0.012	U	0.048	0.0049	ug/L		06/15/16 14:33	06/16/16 19:40	1
Endrin	0.012	U	0.048	0.0051	ug/L		06/15/16 14:33	06/16/16 19:40	1
Endrin aldehyde	0.012	U	0.048	0.0058	ug/L		06/15/16 14:33	06/16/16 19:40	1
Endrin ketone	0.012	U	0.048	0.0044	ug/L		06/15/16 14:33	06/16/16 19:40	1
gamma-BHC (Lindane)	0.0072	U	0.048	0.0034	ug/L		06/15/16 14:33	06/16/16 19:40	1
Heptachlor	0.012	U	0.048	0.0068	ug/L		06/15/16 14:33	06/16/16 19:40	1
Heptachlor epoxide	0.0072	U	0.048	0.0035	ug/L		06/15/16 14:33	06/16/16 19:40	1
Methoxychlor	0.012	U	0.048	0.0094	ug/L		06/15/16 14:33	06/16/16 19:40	1
Toxaphene	0.77	U	4.8	0.38	ug/L		06/15/16 14:33	06/16/16 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*51*		*14 - 130*	*06/15/16 14:33*	*06/16/16 19:40*	*1*
Tetrachloro-m-xylene	*50*		*44 - 124*	*06/15/16 14:33*	*06/16/16 19:40*	*1*

Client Sample ID: LFM-99-06A_SPR16

Date Collected: 06/09/16 09:25
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**370**	**D**	5.0	2.0	mg/L			06/17/16 02:08	10
Sulfate	**29**		1.0	0.40	mg/L			06/17/16 01:50	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**650**		200	24	ug/L		06/15/16 08:41	06/16/16 22:07	1
Antimony	15	U	20	5.3	ug/L		06/15/16 08:41	06/16/16 22:07	1
Barium	**9.1**	**J**	10	1.7	ug/L		06/15/16 08:41	06/16/16 22:07	1
Beryllium	0.30	U	4.0	0.10	ug/L		06/15/16 08:41	06/16/16 22:07	1
Cadmium	3.0	U	5.0	1.0	ug/L		06/15/16 08:41	06/16/16 22:07	1
Calcium	**76000**		500	25	ug/L		06/15/16 08:41	06/16/16 22:07	1
Chromium	**2.2**	**J**	10	1.6	ug/L		06/15/16 08:41	06/16/16 22:07	1
Cobalt	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 22:07	1
Copper	5.0	U	20	1.8	ug/L		06/15/16 08:41	06/16/16 22:07	1
Iron	**1200**		50	17	ug/L		06/15/16 08:41	06/16/16 22:07	1
Lead	10	U	10	3.9	ug/L		06/15/16 08:41	06/16/16 22:07	1
Magnesium	**8900**		500	33	ug/L		06/15/16 08:41	06/16/16 22:07	1
Manganese	**26**		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:07	1
Nickel	**4.9**	**J**	40	2.1	ug/L		06/15/16 08:41	06/16/16 22:07	1
Potassium	**2600**		1000	17	ug/L		06/15/16 08:41	06/16/16 22:07	1
Selenium	20	U	20	9.9	ug/L		06/15/16 08:41	06/16/16 22:07	1
Silver	1.5	U	10	0.60	ug/L		06/15/16 08:41	06/16/16 22:07	1
Sodium	**200000**	**D**	10000	4800	ug/L		06/15/16 08:41	06/18/16 02:05	10
Thallium	15	U	25	6.0	ug/L		06/15/16 08:41	06/16/16 22:07	1
Vanadium	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 22:07	1
Zinc	**7.0**	**J**	20	7.0	ug/L		06/15/16 08:41	06/16/16 22:07	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.3**	**J**	3.0	1.5	ug/L		06/15/16 08:41	06/16/16 05:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 12:33	1

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.98**		0.10	0.019	mg/L			06/14/16 13:43	1
Chemical Oxygen Demand	10	U	20	4.1	mg/L			06/15/16 08:59	1
Cyanide, Total	**0.0026**	**J**	0.010	0.0025	mg/L		06/13/16 09:00	06/13/16 12:28	1
Alkalinity	**88**		5.0	1.1	mg/L			06/14/16 11:45	1
Total Dissolved Solids (TDS)	**810**		10	4.7	mg/L			06/14/16 15:46	1

Client Sample ID: DUP-1

Date Collected: 06/09/16 00:00
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-3

Matrix: Water

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.013	U	0.051	0.0074	ug/L		06/15/16 14:33	06/16/16 19:55	1
alpha-BHC	0.0077	U	0.051	0.0035	ug/L		06/15/16 14:33	06/16/16 19:55	1

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Client Sample ID: DUP-1
Date Collected: 06/09/16 00:00
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-3
Matrix: Water

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	0.013	U	0.051	0.0093	ug/L		06/15/16 14:33	06/16/16 19:55	1
Chlordane (technical)	0.16	U	0.51	0.097	ug/L		06/15/16 14:33	06/16/16 19:55	1
4,4'-DDD	0.013	U	0.051	0.0064	ug/L		06/15/16 14:33	06/16/16 19:55	1
4,4'-DDE	0.013	U	0.051	0.0052	ug/L		06/15/16 14:33	06/16/16 19:55	1
4,4'-DDT	0.013	U	0.051	0.0072	ug/L		06/15/16 14:33	06/16/16 19:55	1
delta-BHC	0.013	U	0.051	0.0077	ug/L		06/15/16 14:33	06/16/16 19:55	1
Dieldrin	0.0077	U	0.051	0.0039	ug/L		06/15/16 14:33	06/16/16 19:55	1
Endosulfan I	0.0077	U	0.051	0.0036	ug/L		06/15/16 14:33	06/16/16 19:55	1
Endosulfan II	0.013	U	0.051	0.0043	ug/L		06/15/16 14:33	06/16/16 19:55	1
Endosulfan sulfate	0.013	U	0.051	0.0052	ug/L		06/15/16 14:33	06/16/16 19:55	1
Endrin	0.013	U	0.051	0.0054	ug/L		06/15/16 14:33	06/16/16 19:55	1
Endrin aldehyde	0.013	U	0.051	0.0062	ug/L		06/15/16 14:33	06/16/16 19:55	1
Endrin ketone	0.013	U	0.051	0.0047	ug/L		06/15/16 14:33	06/16/16 19:55	1
gamma-BHC (Lindane)	0.0077	U	0.051	0.0037	ug/L		06/15/16 14:33	06/16/16 19:55	1
Heptachlor	0.013	U	0.051	0.0073	ug/L		06/15/16 14:33	06/16/16 19:55	1
Heptachlor epoxide	0.0077	U	0.051	0.0038	ug/L		06/15/16 14:33	06/16/16 19:55	1
Methoxychlor	0.013	U	0.051	0.010	ug/L		06/15/16 14:33	06/16/16 19:55	1
Toxaphene	0.82	U	5.1	0.41	ug/L		06/15/16 14:33	06/16/16 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*58*		*14 - 130*	*06/15/16 14:33*	*06/16/16 19:55*	*1*
Tetrachloro-m-xylene	*53*		*44 - 124*	*06/15/16 14:33*	*06/16/16 19:55*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**240**	**D**	5.0	2.0	mg/L			06/17/16 02:43	10
Sulfate	**17**		1.0	0.40	mg/L			06/17/16 02:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	70	U	200	24	ug/L		06/15/16 08:41	06/16/16 22:12	1
Antimony	15	U	20	5.3	ug/L		06/15/16 08:41	06/16/16 22:12	1
Barium	**7.1**	**J**	10	1.7	ug/L		06/15/16 08:41	06/16/16 22:12	1
Beryllium	0.30	U	4.0	0.10	ug/L		06/15/16 08:41	06/16/16 22:12	1
Cadmium	3.0	U	5.0	1.0	ug/L		06/15/16 08:41	06/16/16 22:12	1
Calcium	**50000**		500	25	ug/L		06/15/16 08:41	06/16/16 22:12	1
Chromium	4.0	U	10	1.6	ug/L		06/15/16 08:41	06/16/16 22:12	1
Cobalt	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 22:12	1
Copper	5.0	U	20	1.8	ug/L		06/15/16 08:41	06/16/16 22:12	1
Iron	50	U	50	17	ug/L		06/15/16 08:41	06/16/16 22:12	1
Lead	10	U	10	3.9	ug/L		06/15/16 08:41	06/16/16 22:12	1
Magnesium	**5400**		500	33	ug/L		06/15/16 08:41	06/16/16 22:12	1
Manganese	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 22:12	1
Nickel	5.0	U	40	2.1	ug/L		06/15/16 08:41	06/16/16 22:12	1
Potassium	**2400**		1000	17	ug/L		06/15/16 08:41	06/16/16 22:12	1
Selenium	20	U	20	9.9	ug/L		06/15/16 08:41	06/16/16 22:12	1
Silver	1.5	U	10	0.60	ug/L		06/15/16 08:41	06/16/16 22:12	1
Sodium	**120000**	**D**	10000	4800	ug/L		06/15/16 08:41	06/18/16 02:10	10
Thallium	15	U	25	6.0	ug/L		06/15/16 08:41	06/16/16 22:12	1
Vanadium	3.0	U	10	1.0	ug/L		06/15/16 08:41	06/16/16 22:12	1

Client Sample ID: DUP-1

Date Collected: 06/09/16 00:00
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-3

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	20	U	20	7.0	ug/L		06/15/16 08:41	06/16/16 22:12	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	1.5	ug/L		06/15/16 08:41	06/16/16 05:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 12:38	1

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	**0.62**		0.10	0.019	mg/L			06/14/16 13:45	1
Chemical Oxygen Demand	10	U	20	4.1	mg/L			06/15/16 08:59	1
Cyanide, Total	0.0050	U	0.010	0.0025	mg/L		06/13/16 09:00	06/13/16 12:30	1
Alkalinity	**71**		5.0	1.1	mg/L			06/17/16 16:32	1
Total Dissolved Solids (TDS)	**520**		10	4.7	mg/L			06/14/16 15:46	1

Surrogate Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCB1 (14-130)	TCX1 (44-124)								
680-126189-2	LFM 99-05A-0616	34	53								
680-126246-1	LFM-99-02B_SPR16	57	51								
680-126246-1 MS	LFM-99-02B_SPR16	88	92								
680-126246-1 MSD	LFM-99-02B_SPR16	100	103								
680-126246-2	LFM-99-06A_SPR16	51	50								
680-126246-3	DUP-1	58	53								
LCS 680-437040/21-A	Lab Control Sample	51	63								
LCS 680-437400/13-A	Lab Control Sample	46	55								
LCS 680-437400/8-A	Lab Control Sample	64	58								
MB 680-437040/20-A	Method Blank	65	64								
MB 680-437400/7-A	Method Blank	59	54								

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Lab Sample ID: MB 680-437040/20-A
Matrix: Water
Analysis Batch: 437429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437040

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.013	U	0.050	0.0072	ug/L		06/13/16 15:39	06/15/16 15:00	1
alpha-BHC	0.0075	U	0.050	0.0034	ug/L		06/13/16 15:39	06/15/16 15:00	1
4,4'-DDD	0.013	U	0.050	0.0063	ug/L		06/13/16 15:39	06/15/16 15:00	1
beta-BHC	0.013	U	0.050	0.0091	ug/L		06/13/16 15:39	06/15/16 15:00	1
4,4'-DDE	0.013	U	0.050	0.0051	ug/L		06/13/16 15:39	06/15/16 15:00	1
4,4'-DDT	0.013	U	0.050	0.0070	ug/L		06/13/16 15:39	06/15/16 15:00	1
delta-BHC	0.013	U	0.050	0.0075	ug/L		06/13/16 15:39	06/15/16 15:00	1
Dieldrin	0.0075	U	0.050	0.0038	ug/L		06/13/16 15:39	06/15/16 15:00	1
Endosulfan I	0.0075	U	0.050	0.0035	ug/L		06/13/16 15:39	06/15/16 15:00	1
Endosulfan II	0.013	U	0.050	0.0042	ug/L		06/13/16 15:39	06/15/16 15:00	1
Endosulfan sulfate	0.013	U	0.050	0.0051	ug/L		06/13/16 15:39	06/15/16 15:00	1
Endrin	0.013	U	0.050	0.0053	ug/L		06/13/16 15:39	06/15/16 15:00	1
Endrin aldehyde	0.013	U	0.050	0.0061	ug/L		06/13/16 15:39	06/15/16 15:00	1
Endrin ketone	0.013	U	0.050	0.0046	ug/L		06/13/16 15:39	06/15/16 15:00	1
gamma-BHC (Lindane)	0.0075	U	0.050	0.0036	ug/L		06/13/16 15:39	06/15/16 15:00	1
Heptachlor	0.013	U	0.050	0.0071	ug/L		06/13/16 15:39	06/15/16 15:00	1
Chlordane (technical)	0.16	U	0.50	0.095	ug/L		06/13/16 15:39	06/15/16 15:00	1
Heptachlor epoxide	0.0075	U	0.050	0.0037	ug/L		06/13/16 15:39	06/15/16 15:00	1
Methoxychlor	0.013	U	0.050	0.0098	ug/L		06/13/16 15:39	06/15/16 15:00	1
Toxaphene	0.80	U	5.0	0.40	ug/L		06/13/16 15:39	06/15/16 15:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*14 - 130*	*06/13/16 15:39*	*06/15/16 15:00*	*1*
Tetrachloro-m-xylene	*64*		*44 - 124*	*06/13/16 15:39*	*06/15/16 15:00*	*1*

Lab Sample ID: LCS 680-437040/21-A
Matrix: Water
Analysis Batch: 437429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437040

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.100	0.0637		ug/L		64	45 - 134
alpha-BHC	0.100	0.0845		ug/L		84	54 - 138
4,4'-DDD	0.100	0.0932		ug/L		93	56 - 143
beta-BHC	0.100	0.0881		ug/L		88	56 - 136
4,4'-DDE	0.100	0.0818		ug/L		82	57 - 135
4,4'-DDT	0.100	0.0959		ug/L		96	51 - 143
delta-BHC	0.100	0.0890		ug/L		89	52 - 142
Dieldrin	0.100	0.0890		ug/L		89	60 - 136
Endosulfan I	0.100	0.0864		ug/L		86	62 - 126
Endosulfan II	0.100	0.0918		ug/L		92	52 - 135
Endosulfan sulfate	0.100	0.0960		ug/L		96	62 - 133
Endrin	0.100	0.0921		ug/L		92	60 - 138
Endrin aldehyde	0.100	0.0899		ug/L		90	51 - 132
Endrin ketone	0.100	0.0893		ug/L		89	58 - 134
gamma-BHC (Lindane)	0.100	0.0841		ug/L		84	59 - 134
Heptachlor	0.100	0.0709		ug/L		71	54 - 130
Heptachlor epoxide	0.100	0.0879		ug/L		88	61 - 133
Methoxychlor	0.100	0.104		ug/L		104	54 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	51		14 - 130
Tetrachloro-m-xylene	63		44 - 124

Lab Sample ID: MB 680-437400/7-A
Matrix: Water
Analysis Batch: 437694

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437400

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.013	U	0.050	0.0072	ug/L		06/15/16 14:33	06/16/16 18:13	1
alpha-BHC	0.0075	U	0.050	0.0034	ug/L		06/15/16 14:33	06/16/16 18:13	1
4,4'-DDD	0.013	U	0.050	0.0063	ug/L		06/15/16 14:33	06/16/16 18:13	1
beta-BHC	0.013	U	0.050	0.0091	ug/L		06/15/16 14:33	06/16/16 18:13	1
4,4'-DDE	0.013	U	0.050	0.0051	ug/L		06/15/16 14:33	06/16/16 18:13	1
4,4'-DDT	0.013	U	0.050	0.0070	ug/L		06/15/16 14:33	06/16/16 18:13	1
delta-BHC	0.013	U	0.050	0.0075	ug/L		06/15/16 14:33	06/16/16 18:13	1
Dieldrin	0.0075	U	0.050	0.0038	ug/L		06/15/16 14:33	06/16/16 18:13	1
Endosulfan I	0.0075	U	0.050	0.0035	ug/L		06/15/16 14:33	06/16/16 18:13	1
Endosulfan II	0.013	U	0.050	0.0042	ug/L		06/15/16 14:33	06/16/16 18:13	1
Endosulfan sulfate	0.013	U	0.050	0.0051	ug/L		06/15/16 14:33	06/16/16 18:13	1
Endrin	0.013	U	0.050	0.0053	ug/L		06/15/16 14:33	06/16/16 18:13	1
Endrin aldehyde	0.013	U	0.050	0.0061	ug/L		06/15/16 14:33	06/16/16 18:13	1
Endrin ketone	0.013	U	0.050	0.0046	ug/L		06/15/16 14:33	06/16/16 18:13	1
gamma-BHC (Lindane)	0.0075	U	0.050	0.0036	ug/L		06/15/16 14:33	06/16/16 18:13	1
Heptachlor	0.013	U	0.050	0.0071	ug/L		06/15/16 14:33	06/16/16 18:13	1
Chlordane (technical)	0.16	U	0.50	0.095	ug/L		06/15/16 14:33	06/16/16 18:13	1
Heptachlor epoxide	0.0075	U	0.050	0.0037	ug/L		06/15/16 14:33	06/16/16 18:13	1
Methoxychlor	0.013	U	0.050	0.0098	ug/L		06/15/16 14:33	06/16/16 18:13	1
Toxaphene	0.80	U	5.0	0.40	ug/L		06/15/16 14:33	06/16/16 18:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	59		14 - 130	06/15/16 14:33	06/16/16 18:13	1
Tetrachloro-m-xylene	54		44 - 124	06/15/16 14:33	06/16/16 18:13	1

Lab Sample ID: LCS 680-437400/13-A
Matrix: Water
Analysis Batch: 437694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437400

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlordane (technical)	4.00	3.05		ug/L		76	62 - 140
Toxaphene	8.00	6.07		ug/L		76	33 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	46		14 - 130
Tetrachloro-m-xylene	55		44 - 124

Lab Sample ID: LCS 680-437400/8-A
Matrix: Water
Analysis Batch: 437694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437400

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.100	0.0676		ug/L		68	45 - 134
alpha-BHC	0.100	0.0788		ug/L		79	54 - 138
4,4'-DDD	0.100	0.0808		ug/L		81	56 - 143

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Lab Sample ID: LCS 680-437400/8-A
Matrix: Water
Analysis Batch: 437694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437400

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
beta-BHC	0.100	0.0827		ug/L		83	56 - 136
4,4'-DDE	0.100	0.0752		ug/L		75	57 - 135
4,4'-DDT	0.100	0.0821		ug/L		82	51 - 143
delta-BHC	0.100	0.0814		ug/L		81	52 - 142
Dieldrin	0.100	0.0807		ug/L		81	60 - 136
Endosulfan I	0.100	0.0809		ug/L		81	62 - 126
Endosulfan II	0.100	0.0829		ug/L		83	52 - 135
Endosulfan sulfate	0.100	0.0842		ug/L		84	62 - 133
Endrin	0.100	0.0732		ug/L		73	60 - 138
Endrin aldehyde	0.100	0.0874		ug/L		87	51 - 132
Endrin ketone	0.100	0.0879		ug/L		88	58 - 134
gamma-BHC (Lindane)	0.100	0.0807		ug/L		81	59 - 134
Heptachlor	0.100	0.0679		ug/L		68	54 - 130
Heptachlor epoxide	0.100	0.0824		ug/L		82	61 - 133
Methoxychlor	0.100	0.0890		ug/L		89	54 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*64*		*14 - 130*
Tetrachloro-m-xylene	*58*		*44 - 124*

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437694

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437400

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.013	U	0.106	0.0588		ug/L		55	45 - 134
alpha-BHC	0.0074	U	0.106	0.0648		ug/L		61	54 - 138
beta-BHC	0.013	U	0.106	0.0736		ug/L		69	56 - 136
4,4'-DDD	0.013	U	0.106	0.0690		ug/L		65	56 - 143
4,4'-DDE	0.013	U	0.106	0.0642		ug/L		60	57 - 135
4,4'-DDT	0.013	U	0.106	0.0762		ug/L		72	51 - 143
delta-BHC	0.013	U	0.106	0.0718		ug/L		68	52 - 142
Dieldrin	0.0074	U	0.106	0.0689		ug/L		65	60 - 136
Endosulfan I	0.0074	U	0.106	0.0673		ug/L		63	62 - 126
Endosulfan II	0.013	U	0.106	0.0712		ug/L		67	52 - 135
Endosulfan sulfate	0.013	U	0.106	0.0733		ug/L		69	62 - 133
Endrin	0.013	U	0.106	0.0684		ug/L		64	60 - 138
Endrin aldehyde	0.013	U	0.106	0.0743		ug/L		70	51 - 132
Endrin ketone	0.013	U	0.106	0.0743		ug/L		70	58 - 134
gamma-BHC (Lindane)	0.0074	U	0.106	0.0669		ug/L		63	59 - 134
Heptachlor	0.013	U	0.106	0.0585		ug/L		55	54 - 130
Heptachlor epoxide	0.0074	U	0.106	0.0697		ug/L		66	61 - 133
Methoxychlor	0.013	U	0.106	0.0751		ug/L		71	54 - 145

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*88*		*14 - 130*
Tetrachloro-m-xylene	*92*		*44 - 124*

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437694

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437400

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.013	U	0.105	0.0621		ug/L		59	45 - 134	5	30
alpha-BHC	0.0074	U	0.105	0.0677		ug/L		65	54 - 138	4	30
beta-BHC	0.013	U	0.105	0.0735		ug/L		70	56 - 136	0	30
4,4'-DDD	0.013	U	0.105	0.0685		ug/L		66	56 - 143	1	30
4,4'-DDE	0.013	U	0.105	0.0655		ug/L		63	57 - 135	2	30
4,4'-DDT	0.013	U	0.105	0.0727		ug/L		70	51 - 143	5	30
delta-BHC	0.013	U	0.105	0.0714		ug/L		68	52 - 142	1	30
Dieldrin	0.0074	U	0.105	0.0690		ug/L		66	60 - 136	0	30
Endosulfan I	0.0074	U	0.105	0.0682		ug/L		65	62 - 126	1	30
Endosulfan II	0.013	U	0.105	0.0695		ug/L		66	52 - 135	2	30
Endosulfan sulfate	0.013	U	0.105	0.0724		ug/L		69	62 - 133	1	30
Endrin	0.013	U	0.105	0.0670		ug/L		64	60 - 138	2	30
Endrin aldehyde	0.013	U	0.105	0.0726		ug/L		69	51 - 132	2	30
Endrin ketone	0.013	U	0.105	0.0750		ug/L		72	58 - 134	1	30
gamma-BHC (Lindane)	0.0074	U	0.105	0.0691		ug/L		66	59 - 134	3	30
Heptachlor	0.013	U	0.105	0.0606		ug/L		58	54 - 130	4	30
Heptachlor epoxide	0.0074	U	0.105	0.0711		ug/L		68	61 - 133	2	30
Methoxychlor	0.013	U	0.105	0.0736		ug/L		70	54 - 145	2	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*100*		*14 - 130*
Tetrachloro-m-xylene	*103*		*44 - 124*

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-437791/39
Matrix: Water
Analysis Batch: 437791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.40	U	0.50	0.20	mg/L			06/17/16 00:06	1
Sulfate	0.80	U	1.0	0.40	mg/L			06/17/16 00:06	1

Lab Sample ID: LCS 680-437791/40
Matrix: Water
Analysis Batch: 437791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.0		mg/L		100	90 - 110
Sulfate	10.0	9.90		mg/L		99	90 - 110

Lab Sample ID: LCSD 680-437791/41
Matrix: Water
Analysis Batch: 437791

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.0		mg/L		100	90 - 110	0	15
Sulfate	10.0	10.0		mg/L		100	90 - 110	1	15

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437791

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	17		10.0	27.4		mg/L		100	80 - 120		

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437791

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	230	D	100	329	D	mg/L		94	80 - 120		

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437791

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	17		10.0	27.7		mg/L		103	80 - 120	1	15

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437791

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	230	D	100	328	D	mg/L		94	80 - 120	0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-437410/1-A
Matrix: Water
Analysis Batch: 437826

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437410

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	70	U	200	24	ug/L		06/15/16 08:40	06/16/16 21:04	1
Antimony	15	U	20	5.3	ug/L		06/15/16 08:40	06/16/16 21:04	1
Barium	5.0	U	10	1.7	ug/L		06/15/16 08:40	06/16/16 21:04	1
Beryllium	0.30	U	4.0	0.10	ug/L		06/15/16 08:40	06/16/16 21:04	1
Cadmium	3.0	U	5.0	1.0	ug/L		06/15/16 08:40	06/16/16 21:04	1
Calcium	75	U	500	25	ug/L		06/15/16 08:40	06/16/16 21:04	1
Chromium	4.0	U	10	1.6	ug/L		06/15/16 08:40	06/16/16 21:04	1
Cobalt	3.0	U	10	1.0	ug/L		06/15/16 08:40	06/16/16 21:04	1
Copper	5.0	U	20	1.8	ug/L		06/15/16 08:40	06/16/16 21:04	1
Iron	50	U	50	17	ug/L		06/15/16 08:40	06/16/16 21:04	1
Lead	10	U	10	3.9	ug/L		06/15/16 08:40	06/16/16 21:04	1
Magnesium	75	U	500	33	ug/L		06/15/16 08:40	06/16/16 21:04	1
Manganese	3.0	U	10	1.0	ug/L		06/15/16 08:40	06/16/16 21:04	1
Nickel	5.0	U	40	2.1	ug/L		06/15/16 08:40	06/16/16 21:04	1
Potassium	50	U	1000	17	ug/L		06/15/16 08:40	06/16/16 21:04	1
Selenium	20	U	20	9.9	ug/L		06/15/16 08:40	06/16/16 21:04	1
Silver	1.5	U	10	0.60	ug/L		06/15/16 08:40	06/16/16 21:04	1
Sodium	1000	U	1000	480	ug/L		06/15/16 08:40	06/16/16 21:04	1
Thallium	15	U	25	6.0	ug/L		06/15/16 08:40	06/16/16 21:04	1
Vanadium	3.0	U	10	1.0	ug/L		06/15/16 08:40	06/16/16 21:04	1
Zinc	20	U	20	7.0	ug/L		06/15/16 08:40	06/16/16 21:04	1

Lab Sample ID: LCS 680-437410/2-A
Matrix: Water
Analysis Batch: 437826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5000	4780		ug/L		96	86 - 115
Antimony	50.0	48.7		ug/L		97	88 - 113
Barium	100	100		ug/L		100	88 - 113
Beryllium	50.0	51.0		ug/L		102	89 - 112
Cadmium	50.0	50.1		ug/L		100	88 - 113
Calcium	5000	5040		ug/L		101	87 - 113
Chromium	100	103		ug/L		103	90 - 113
Cobalt	50.0	51.0		ug/L		102	89 - 114
Copper	100	101		ug/L		101	86 - 114
Iron	5000	4900		ug/L		98	87 - 115
Lead	500	494		ug/L		99	86 - 113
Magnesium	5000	4830		ug/L		97	85 - 113
Manganese	500	516		ug/L		103	90 - 114
Nickel	100	98.6		ug/L		99	88 - 113
Potassium	8000	8500		ug/L		106	86 - 114
Selenium	100	94.9		ug/L		95	83 - 114
Silver	50.0	48.2		ug/L		96	84 - 115
Sodium	5000	4780		ug/L		96	87 - 115
Thallium	40.0	41.8		ug/L		104	85 - 114
Vanadium	100	101		ug/L		101	90 - 111
Zinc	100	100		ug/L		100	87 - 115

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437826

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	70	U J	5000	4880		ug/L		98	86 - 115
Antimony	15	U J	50.0	50.1		ug/L		100	88 - 113
Barium	7.2	J J	100	108		ug/L		101	88 - 113
Beryllium	0.30	U J	50.0	51.4		ug/L		103	89 - 112
Cadmium	3.0	U J	50.0	49.7		ug/L		99	88 - 113
Calcium	48000	J	5000	53000	4	ug/L		90	87 - 113
Chromium	4.0	U J	100	103		ug/L		103	90 - 113
Cobalt	3.0	U J	50.0	50.4		ug/L		101	89 - 114
Copper	5.0	U J	100	103		ug/L		103	86 - 114
Iron	50	U J	5000	4900		ug/L		98	87 - 115
Lead	10	U J	500	488		ug/L		98	86 - 113
Magnesium	5300	J	5000	10100		ug/L		96	85 - 113
Manganese	3.0	U J	500	516		ug/L		103	90 - 114
Nickel	5.0	U J	100	99.4		ug/L		99	88 - 113
Potassium	2300	J	8000	11200		ug/L		110	86 - 114
Selenium	20	U J	100	97.7		ug/L		98	83 - 114
Silver	1.5	U J	50.0	49.7		ug/L		99	84 - 115
Thallium	15	U J	40.0	36.6		ug/L		92	85 - 114
Vanadium	3.0	U J	100	101		ug/L		101	90 - 111
Zinc	20	U J	100	104		ug/L		104	87 - 115

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 438008

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	130000	J D	5000	123000	4 D	ug/L		-98	87 - 115

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437826

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	70	U J	5000	4820		ug/L		96	86 - 115	1	20
Antimony	15	U J	50.0	47.2		ug/L		94	88 - 113	6	20
Barium	7.2	J J	100	107		ug/L		100	88 - 113	1	20
Beryllium	0.30	U J	50.0	50.5		ug/L		101	89 - 112	2	20
Cadmium	3.0	U J	50.0	49.2		ug/L		98	88 - 113	1	20
Calcium	48000	J	5000	53200	4	ug/L		93	87 - 113	0	20
Chromium	4.0	U J	100	101		ug/L		101	90 - 113	1	20
Cobalt	3.0	U J	50.0	50.2		ug/L		100	89 - 114	0	20
Copper	5.0	U J	100	101		ug/L		101	86 - 114	2	20
Iron	50	U J	5000	4830		ug/L		97	87 - 115	1	20
Lead	10	U J	500	482		ug/L		96	86 - 113	1	20
Magnesium	5300	J	5000	10000		ug/L		96	85 - 113	0	20
Manganese	3.0	U J	500	508		ug/L		102	90 - 114	2	20
Nickel	5.0	U J	100	97.8		ug/L		98	88 - 113	2	20
Potassium	2300	J	8000	11000		ug/L		108	86 - 114	1	20
Selenium	20	U J	100	98.9		ug/L		99	83 - 114	1	20
Silver	1.5	U J	50.0	48.3		ug/L		97	84 - 115	3	20
Thallium	15	U J	40.0	35.7		ug/L		89	85 - 114	3	20
Vanadium	3.0	U J	100	99.5		ug/L		100	90 - 111	2	20
Zinc	20	U J	100	99.8		ug/L		100	87 - 115	4	20

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 438008

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	130000	J D	5000	131000	4 D	ug/L		66	87 - 115	6	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-437390/1-A
Matrix: Water
Analysis Batch: 437616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437390

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	1.5	ug/L		06/15/16 08:40	06/16/16 04:07	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 680-437390/2-A
Matrix: Water
Analysis Batch: 437616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437390

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	103		ug/L		103	84 - 116

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437616

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437390

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	3.0	U J	100	114		ug/L		114	84 - 116

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437616

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437390

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	3.0	U J	100	109		ug/L		109	84 - 116	5	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-437106/1-A
Matrix: Water
Analysis Batch: 437308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437106

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.080	ug/L		06/13/16 13:34	06/14/16 12:01	1

Lab Sample ID: LCS 680-437106/2-A
Matrix: Water
Analysis Batch: 437308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.61		ug/L		105	80 - 124

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437308

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437106

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.20	U	1.00	1.17		ug/L		117	80 - 124

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437308

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437106

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	1.20		ug/L		120	80 - 124	2	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-329773/114
Matrix: Water
Analysis Batch: 329773

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.050	U	0.10	0.019	mg/L			06/14/16 13:13	1

Lab Sample ID: LCS 280-329773/112
Matrix: Water
Analysis Batch: 329773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate Nitrite as N			5.00	5.30		mg/L		106	90 - 110		

Lab Sample ID: LCSD 280-329773/113
Matrix: Water
Analysis Batch: 329773

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N			5.00	5.31		mg/L		106	90 - 110	0	10

Lab Sample ID: MRL 280-329773/21
Matrix: Water
Analysis Batch: 329773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate Nitrite as N			0.100	0.0626	J	mg/L		63	50 - 150		

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 329773

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate Nitrite as N	0.60		4.00	4.87		mg/L		107	90 - 110		

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 329773

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	0.60		4.00	4.86		mg/L		107	90 - 110	0	10

Method: 410.4 - COD

Lab Sample ID: MB 280-329892/5
Matrix: Water
Analysis Batch: 329892

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	20	4.1	mg/L			06/15/16 08:59	1

Method: 410.4 - COD (Continued)

Lab Sample ID: LCS 280-329892/3
Matrix: Water
Analysis Batch: 329892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chemical Oxygen Demand			100	90.5		mg/L		90	90 - 110		

Lab Sample ID: LCSD 280-329892/4
Matrix: Water
Analysis Batch: 329892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand			100	91.8		mg/L		92	90 - 110	2	11

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 329892

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chemical Oxygen Demand	10	U	50.0	48.3		mg/L		97	90 - 110		

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 329892

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	10	U	50.0	46.6		mg/L		93	90 - 110	4	11

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 680-437000/1-A
Matrix: Water
Analysis Batch: 437086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437000

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0025	mg/L		06/13/16 06:05	06/13/16 11:43	1

Lab Sample ID: LCS 680-437000/2-A
Matrix: Water
Analysis Batch: 437086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437000

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			0.0500	0.0484		mg/L		97	83 - 116		

Lab Sample ID: MB 680-437001/1-A
Matrix: Water
Analysis Batch: 437086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437001

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0025	mg/L		06/13/16 09:00	06/13/16 12:16	1

Method: 9012B - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: LCS 680-437001/2-A
Matrix: Water
Analysis Batch: 437086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437001

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			0.0500	0.0481		mg/L		96	83 - 116		

Lab Sample ID: 680-126246-1 MS
Matrix: Water
Analysis Batch: 437086

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437001

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	0.0050	U	0.0500	0.0465		mg/L		93	83 - 116		

Lab Sample ID: 680-126246-1 MSD
Matrix: Water
Analysis Batch: 437086

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA
Prep Batch: 437001

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.0050	U	0.0500	0.0487		mg/L		97	83 - 116	5	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-329725/6
Matrix: Water
Analysis Batch: 329725

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	2.35	J	5.0	1.1	mg/L			06/14/16 11:14	1

Lab Sample ID: LCS 280-329725/4
Matrix: Water
Analysis Batch: 329725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	198		mg/L		99	90 - 110		

Lab Sample ID: LCSD 280-329725/5
Matrix: Water
Analysis Batch: 329725

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity			200	198		mg/L		99	90 - 110	0	10

Lab Sample ID: 680-126246-1 DU
Matrix: Water
Analysis Batch: 329725

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	71		75.8		mg/L				6	10

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-330290/31
Matrix: Water
Analysis Batch: 330290

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1.79	J	5.0	1.1	mg/L			06/17/16 14:46	1

Lab Sample ID: LCS 280-330290/30
Matrix: Water
Analysis Batch: 330290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	195		mg/L		98	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-329403/1
Matrix: Water
Analysis Batch: 329403

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	10	U	10	4.7	mg/L			06/10/16 17:32	1

Lab Sample ID: LCS 280-329403/2
Matrix: Water
Analysis Batch: 329403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	506		mg/L		101	86 - 110

Lab Sample ID: MB 280-329781/1
Matrix: Water
Analysis Batch: 329781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	10	U	10	4.7	mg/L			06/14/16 15:46	1

Lab Sample ID: LCS 280-329781/2
Matrix: Water
Analysis Batch: 329781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	509		mg/L		102	86 - 110

Lab Sample ID: LCSD 280-329781/3
Matrix: Water
Analysis Batch: 329781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	510		mg/L		102	86 - 110	0	20

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 680-126246-1 DU
Matrix: Water
Analysis Batch: 329781

Client Sample ID: LFM-99-02B_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids (TDS)	530			546		mg/L				3	10

GC Semi VOA

Prep Batch: 437040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	3520C	
LCS 680-437040/21-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-437040/20-A	Method Blank	Total/NA	Water	3520C	

Prep Batch: 437400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	3520C	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	3520C	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	3520C	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	3520C	
680-126246-3	DUP-1	Total/NA	Water	3520C	
LCS 680-437400/13-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 680-437400/8-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-437400/7-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 437429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	8081B 8082A	437040
LCS 680-437040/21-A	Lab Control Sample	Total/NA	Water	8081B 8082A	437040
MB 680-437040/20-A	Method Blank	Total/NA	Water	8081B 8082A	437040

Analysis Batch: 437694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	8081B 8082A	437400
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	8081B 8082A	437400
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	8081B 8082A	437400
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	8081B 8082A	437400
680-126246-3	DUP-1	Total/NA	Water	8081B 8082A	437400
LCS 680-437400/13-A	Lab Control Sample	Total/NA	Water	8081B 8082A	437400
LCS 680-437400/8-A	Lab Control Sample	Total/NA	Water	8081B 8082A	437400
MB 680-437400/7-A	Method Blank	Total/NA	Water	8081B 8082A	437400

HPLC/IC

Analysis Batch: 437791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	9056A	
680-126189-2	LFM 99-05A-0616	Total/NA	Water	9056A	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	9056A	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	9056A	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	9056A	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	9056A	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	9056A	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	9056A	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	9056A	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	9056A	
680-126246-3	DUP-1	Total/NA	Water	9056A	
680-126246-3	DUP-1	Total/NA	Water	9056A	
LCS 680-437791/40	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-437791/41	Lab Control Sample Dup	Total/NA	Water	9056A	

HPLC/IC (Continued)

Analysis Batch: 437791 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-437791/39	Method Blank	Total/NA	Water	9056A	

Metals

Prep Batch: 437106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	7470A	
680-126189-6	LFM 99 02B-H	Total/NA	Water	7470A	
680-126189-7	LFM 99 06A-H	Total/NA	Water	7470A	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	7470A	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	7470A	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	7470A	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	7470A	
680-126246-3	DUP-1	Total/NA	Water	7470A	
LCS 680-437106/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 680-437106/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 437308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	7470A	437106
680-126189-6	LFM 99 02B-H	Total/NA	Water	7470A	437106
680-126189-7	LFM 99 06A-H	Total/NA	Water	7470A	437106
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	7470A	437106
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	7470A	437106
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	7470A	437106
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	7470A	437106
680-126246-3	DUP-1	Total/NA	Water	7470A	437106
LCS 680-437106/2-A	Lab Control Sample	Total/NA	Water	7470A	437106
MB 680-437106/1-A	Method Blank	Total/NA	Water	7470A	437106

Prep Batch: 437390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	3010A	
680-126189-6	LFM 99 02B-H	Total/NA	Water	3010A	
680-126189-7	LFM 99 06A-H	Total/NA	Water	3010A	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	3010A	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	3010A	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	3010A	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	3010A	
680-126246-3	DUP-1	Total/NA	Water	3010A	
LCS 680-437390/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-437390/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 437410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	3010A	
680-126189-6	LFM 99 02B-H	Total/NA	Water	3010A	
680-126189-7	LFM 99 06A-H	Total/NA	Water	3010A	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	3010A	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 437410 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	3010A	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	3010A	
680-126246-3	DUP-1	Total/NA	Water	3010A	
LCS 680-437410/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-437410/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 437616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	6020A	437390
680-126189-6	LFM 99 02B-H	Total/NA	Water	6020A	437390
680-126189-7	LFM 99 06A-H	Total/NA	Water	6020A	437390
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	6020A	437390
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	6020A	437390
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	6020A	437390
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	6020A	437390
680-126246-3	DUP-1	Total/NA	Water	6020A	437390
LCS 680-437390/2-A	Lab Control Sample	Total/NA	Water	6020A	437390
MB 680-437390/1-A	Method Blank	Total/NA	Water	6020A	437390

Analysis Batch: 437826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	6010C	437410
680-126189-6	LFM 99 02B-H	Total/NA	Water	6010C	437410
680-126189-7	LFM 99 06A-H	Total/NA	Water	6010C	437410
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	6010C	437410
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	6010C	437410
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	6010C	437410
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	6010C	437410
680-126246-3	DUP-1	Total/NA	Water	6010C	437410
LCS 680-437410/2-A	Lab Control Sample	Total/NA	Water	6010C	437410
MB 680-437410/1-A	Method Blank	Total/NA	Water	6010C	437410

Analysis Batch: 438008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-7	LFM 99 06A-H	Total/NA	Water	6010C	437410
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	6010C	437410
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	6010C	437410
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	6010C	437410
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	6010C	437410
680-126246-3	DUP-1	Total/NA	Water	6010C	437410

General Chemistry

Analysis Batch: 329403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-1	LFM 99-05A-0616	Total/NA	Water	SM 2540C	
LCS 280-329403/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 280-329403/1	Method Blank	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 329725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-1	LFM 99-05A-0616	Total/NA	Water	SM 2320B	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	SM 2320B	
680-126246-1 DU	LFM-99-02B_SPR16	Total/NA	Water	SM 2320B	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	SM 2320B	
LCS 280-329725/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-329725/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
MB 280-329725/6	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 329773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-1	LFM 99-05A-0616	Total/NA	Water	353.2	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	353.2	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	353.2	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	353.2	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	353.2	
680-126246-3	DUP-1	Total/NA	Water	353.2	
LCS 280-329773/112	Lab Control Sample	Total/NA	Water	353.2	
LCSD 280-329773/113	Lab Control Sample Dup	Total/NA	Water	353.2	
MB 280-329773/114	Method Blank	Total/NA	Water	353.2	
MRL 280-329773/21	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 329781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	SM 2540C	
680-126246-1 DU	LFM-99-02B_SPR16	Total/NA	Water	SM 2540C	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	SM 2540C	
680-126246-3	DUP-1	Total/NA	Water	SM 2540C	
LCS 280-329781/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-329781/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 280-329781/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 329892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-1	LFM 99-05A-0616	Total/NA	Water	410.4	
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	410.4	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	410.4	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	410.4	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	410.4	
680-126246-3	DUP-1	Total/NA	Water	410.4	
LCS 280-329892/3	Lab Control Sample	Total/NA	Water	410.4	
LCSD 280-329892/4	Lab Control Sample Dup	Total/NA	Water	410.4	
MB 280-329892/5	Method Blank	Total/NA	Water	410.4	

Analysis Batch: 330290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126246-3	DUP-1	Total/NA	Water	SM 2320B	
LCS 280-330290/30	Lab Control Sample	Total/NA	Water	SM 2320B	
MB 280-330290/31	Method Blank	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Prep Batch: 437000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	9012B	
LCS 680-437000/2-A	Lab Control Sample	Total/NA	Water	9012B	
MB 680-437000/1-A	Method Blank	Total/NA	Water	9012B	

Prep Batch: 437001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	9012B	
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	9012B	
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	9012B	
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	9012B	
680-126246-3	DUP-1	Total/NA	Water	9012B	
LCS 680-437001/2-A	Lab Control Sample	Total/NA	Water	9012B	
MB 680-437001/1-A	Method Blank	Total/NA	Water	9012B	

Analysis Batch: 437086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126189-2	LFM 99-05A-0616	Total/NA	Water	9012B	437000
680-126246-1	LFM-99-02B_SPR16	Total/NA	Water	9012B	437001
680-126246-1 MS	LFM-99-02B_SPR16	Total/NA	Water	9012B	437001
680-126246-1 MSD	LFM-99-02B_SPR16	Total/NA	Water	9012B	437001
680-126246-2	LFM-99-06A_SPR16	Total/NA	Water	9012B	437001
680-126246-3	DUP-1	Total/NA	Water	9012B	437001
LCS 680-437000/2-A	Lab Control Sample	Total/NA	Water	9012B	437000
LCS 680-437001/2-A	Lab Control Sample	Total/NA	Water	9012B	437001
MB 680-437000/1-A	Method Blank	Total/NA	Water	9012B	437000
MB 680-437001/1-A	Method Blank	Total/NA	Water	9012B	437001

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Client Sample ID: LFM 99-05A-0616

Date Collected: 06/08/16 12:30
Date Received: 06/09/16 09:05

Lab Sample ID: 680-126189-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	100 mL	100 mL	329773	06/14/16 13:23	NAS	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	329892	06/15/16 08:59	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Analysis	SM 2320B		1	1 mL		329725	06/14/16 11:29	IEU	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	329403	06/10/16 17:32	SVC	TAL DEN
	Instrument ID: MT_025									

Client Sample ID: LFM 99-05A-0616

Date Collected: 06/08/16 12:30
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126189-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1051.6 mL	10 mL	437040	06/13/16 15:39	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1	1051.6 mL	10 mL	437429	06/15/16 15:44	JCK	TAL SAV
	Instrument ID: CSGAA									
Total/NA	Analysis	9056A		1	5 mL	5 mL	437791	06/17/16 03:00	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Analysis	9056A		10	5 mL	5 mL	437791	06/17/16 04:27	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 21:15	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 04:32	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	437106	06/13/16 13:34	JKL	TAL SAV
Total/NA	Analysis	7470A		1	50 mL	50 mL	437308	06/14/16 13:28	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Prep	9012B			50 mL	50 mL	437000	06/13/16 06:05	DAM	TAL SAV
Total/NA	Analysis	9012B		1	50 mL	50 mL	437086	06/13/16 11:56	DAM	TAL SAV
	Instrument ID: LACHAT1									

Client Sample ID: LFM 99 02B-H

Date Collected: 06/08/16 09:47
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126189-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 21:20	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Client Sample ID: LFM 99 02B-H

Date Collected: 06/08/16 09:47
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126189-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 08:49	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	437106	06/13/16 13:34	JKL	TAL SAV
Total/NA	Analysis	7470A		1	50 mL	50 mL	437308	06/14/16 13:32	JKL	TAL SAV
	Instrument ID: LEEMAN2									

Client Sample ID: LFM 99 06A-H

Date Collected: 06/08/16 13:57
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126189-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 21:25	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		10	50 mL	50 mL	438008	06/18/16 01:37	BWR	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 04:42	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	437106	06/13/16 13:34	JKL	TAL SAV
Total/NA	Analysis	7470A		1	50 mL	50 mL	437308	06/14/16 13:37	JKL	TAL SAV
	Instrument ID: LEEMAN2									

Client Sample ID: LFM-99-02B_SPR16

Date Collected: 06/09/16 10:40
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1014 mL	10 mL	437400	06/15/16 14:33	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1	1014 mL	10 mL	437694	06/16/16 19:25	JCK	TAL SAV
	Instrument ID: CSGJ									
Total/NA	Analysis	9056A		1	5 mL	5 mL	437791	06/17/16 00:58	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Analysis	9056A		10	5 mL	5 mL	437791	06/17/16 04:44	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 21:30	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		10	50 mL	50 mL	438008	06/18/16 01:42	BWR	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Client Sample ID: LFM-99-02B_SPR16

Date Collected: 06/09/16 10:40
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 05:17	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	437106	06/13/16 13:34	JKL	TAL SAV
Total/NA	Analysis	7470A		1	50 mL	50 mL	437308	06/14/16 12:10	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	329773	06/14/16 13:25	NAS	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	329892	06/15/16 08:59	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	437001	06/13/16 09:00	DAM	TAL SAV
Total/NA	Analysis	9012B		1	50 mL	50 mL	437086	06/13/16 12:25	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1	1 mL		329725	06/14/16 11:34	IEU	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	329781	06/14/16 15:46	SVC	TAL DEN
	Instrument ID: MT_025									

Client Sample ID: LFM-99-06A_SPR16

Date Collected: 06/09/16 09:25
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1045.5 mL	10 mL	437400	06/15/16 14:33	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1	1045.5 mL	10 mL	437694	06/16/16 19:40	JCK	TAL SAV
	Instrument ID: CSGJ									
Total/NA	Analysis	9056A		1	5 mL	5 mL	437791	06/17/16 01:50	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Analysis	9056A		10	5 mL	5 mL	437791	06/17/16 02:08	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:07	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		10	50 mL	50 mL	438008	06/18/16 02:05	BWR	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 05:42	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	437106	06/13/16 13:34	JKL	TAL SAV
Total/NA	Analysis	7470A		1	50 mL	50 mL	437308	06/14/16 12:33	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	329773	06/14/16 13:43	NAS	TAL DEN
	Instrument ID: WC_Alp 2									

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Client Sample ID: LFM-99-06A_SPR16

Date Collected: 06/09/16 09:25
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	410.4		1	2 mL	2 mL	329892	06/15/16 08:59	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	437001	06/13/16 09:00	DAM	TAL SAV
Total/NA	Analysis	9012B		1	50 mL	50 mL	437086	06/13/16 12:28	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1	1 mL		329725	06/14/16 11:45	IEU	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	329781	06/14/16 15:46	SVC	TAL DEN
	Instrument ID: MT_025									

Client Sample ID: DUP-1

Date Collected: 06/09/16 00:00
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			977.1 mL	10 mL	437400	06/15/16 14:33	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1	977.1 mL	10 mL	437694	06/16/16 19:55	JCK	TAL SAV
	Instrument ID: CSGJ									
Total/NA	Analysis	9056A		1	5 mL	5 mL	437791	06/17/16 02:25	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Analysis	9056A		10	5 mL	5 mL	437791	06/17/16 02:43	AJO	TAL SAV
	Instrument ID: CICK									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:12	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		10	50 mL	50 mL	438008	06/18/16 02:10	BWR	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 05:47	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	437106	06/13/16 13:34	JKL	TAL SAV
Total/NA	Analysis	7470A		1	50 mL	50 mL	437308	06/14/16 12:38	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	329773	06/14/16 13:45	NAS	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	329892	06/15/16 08:59	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	437001	06/13/16 09:00	DAM	TAL SAV
Total/NA	Analysis	9012B		1	50 mL	50 mL	437086	06/13/16 12:30	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1	1 mL		330290	06/17/16 16:32	IEU	TAL DEN
	Instrument ID: WC_AT2									

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Client Sample ID: DUP-1

Date Collected: 06/09/16 00:00
Date Received: 06/10/16 09:29

Lab Sample ID: 680-126246-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	329781	06/14/16 15:46	SVC	TAL DEN
	Instrument ID: MT_025									

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MassDEP Analytical Protocol Certification Form

Laboratory Name: Katahdin Analytical Services, LLC. Project #:

Project Location: RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
SJ4154-1,2,3,4,5 & SJ4226-1,2,3,4,5

Matrices: X Groundwater/Surface Water Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A ✓	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B ✓	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	(Yes) No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	(Yes) No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	(Yes) No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	(Yes) No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	(Yes) No (Yes) No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	(Yes) No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	(Yes) No[1]

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (No[1])
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	(Yes) No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Leslie Dimond **Position:** Q.A. Officer

Printed Name: Leslie Dimond **Date:** 06.27.16

Katahdin ANALYTICAL SERVICES

Cert. No. E87604

June 27, 2016

Mr. Jerry Lanier
Test America Savannah
5102 LaRoche Avenue
Savannah, GA 31404

RE: Katahdin Lab Number: SDG: DEVENS-1 (SJ4154 and SJ4226)
Project ID: Ft. Devens Consolidated Landfill
Project Manager: Mrs. Jennifer Obrin
Sample Receipt Date(s): June 09 and 10, 2016

Dear Mr. Jerry Lanier:

Please find enclosed the following information:

* Report of Analysis (Analytical and/or Field)
* Quality Control Data Summary
* Chain of Custody (COC)
* Login Report

A copy of the Chain of Custody is included in the paginated report. The original COC is attached as an addendum to this report.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in an attached technical narrative or in the Report of Analysis.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Jessie Dimond
Authorized Signature

06.27.16
Date

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TEST AMERICA SAVANNAH
FT. DEVENS CONSOLIDATED LANDFILL
SDG: DEVENS-1
SJ4154, SJ4226

Sample Receipt

The following samples were received on June 09 and 10, 2016 and were logged in under Katahdin Analytical Services work order numbers SJ4154 and SJ4226 for a hardcopy due date of June 22, 2016.

KATAHDIN Sample No.	TEST AMERICA SAVANNAH Sample Identification
SJ4154-1	LFM99-05A-0616
SJ4154-2	LFM99-02B-H
SJ4154-3	LFM99-06A-H
SJ4154-4	LFM99-05A-H
SJ4154-5	TRIP BLANK
SJ4226-1	LFM-99-02B_SPR16
SJ4226-2	LFM-99-06A_SPR16
SJ4226-3	DUP-1

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of SDG DEVENS-1 were analyzed in accordance with Method for the Determination of Extractable Petroleum Hydrocarbons (EPH) MADEP, May 2004, Revision 1.1, and/or Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MADEP, May 2004, Revision 1.1, and/or for the specific methods listed below or on the Report of Analysis.

Sample SJ4226-1 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

MA-EPH Analysis

The method blank WG185154-1 had several target PAHs detected above the MDL but below the PQL. The client was contacted, and since the associated sample SJ4154-1RE did not have any PAHs detected above the MDL and all other QC was acceptable, no further action was taken.

MA-VPH Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
06.27.16

Leslie Dimond
Quality Assurance Officer

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4154-1RE
Client ID: LFM99-05A-0616
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: CJF2183.D

Sample Date: 08-JUN-16
Received Date: 09-JUN-16
Extract Date: 10-JUN-16
Extracted By: HG
Extraction Method: SW846 3510
Lab Prep Batch: WG185154

Analysis Date: 18-JUN-16
Analyst: JLP
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		56.8	%					
o-Terphenyl		63.5	%					
2-Fluorobiphenyl		75.8	%					
2-Bromonaphthalene		74.7	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4226-1
Client ID: LFM-99-02B_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: CJF2156.D

Sample Date: 09-JUN-16
Received Date: 10-JUN-16
Extract Date: 13-JUN-16
Extracted By: KF
Extraction Method: SW846 3510
Lab Prep Batch: WG185286

Analysis Date: 16-JUN-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	100	ug/L	1	100	100	52.	78.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	52.	78.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	52.	78.
C11-C22 Aromatics	U	100	ug/L	1	100	100	52.	78.
Naphthalene	U	2.1	ug/L	1	2	2.1	0.94	1.6
2-Methylnaphthalene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Phenanthrene	U	2.1	ug/L	1	2	2.1	0.94	1.6
Acenaphthylene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Acenaphthene	U	2.1	ug/L	1	2	2.1	1.9	2.0
Anthracene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(a)anthracene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(a)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(b)fluoranthene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Benzo(g,h,i)perylene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(k)fluoranthene	U	2.1	ug/L	1	2	2.1	1.0	1.6
Chrysene	U	2.1	ug/L	1	2	2.1	0.94	1.6
Dibenzo(a,h)anthracene	U	2.1	ug/L	1	2	2.1	1.2	1.6
Fluoranthene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Fluorene	U	2.1	ug/L	1	2	2.1	0.94	1.6
Indeno(1,2,3-cd)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Pyrene	U	2.1	ug/L	1	2	2.1	1.1	1.6
5-Alpha Androstane		51.4	%					
o-Terphenyl		59.8	%					
2-Fluorobiphenyl		77.3	%					
2-Bromonaphthalene		76.1	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4226-2
Client ID: LFM-99-06A_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: CJF2157.D

Sample Date: 09-JUN-16
Received Date: 10-JUN-16
Extract Date: 13-JUN-16
Extracted By: KF
Extraction Method: SW846 3510
Lab Prep Batch: WG185286

Analysis Date: 16-JUN-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		58.1	%					
o-Terphenyl		71.0	%					
2-Fluorobiphenyl		88.0	%					
2-Bromonaphthalene		87.3	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4226-3
Client ID: DUP-1
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: CJF2158.D

Sample Date: 09-JUN-16
Received Date: 10-JUN-16
Extract Date: 13-JUN-16
Extracted By: KF
Extraction Method: SW846 3510
Lab Prep Batch: WG185286

Analysis Date: 16-JUN-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		46.4	%					
o-Terphenyl		55.7	%					
2-Fluorobiphenyl		76.0	%					
2-Bromonaphthalene		74.7	%					

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FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE ID
WG185154-BLANK

Lab Name: KATAHDIN ANALYTICAL SERVICES Lab Code: KAS

Project: FT. DEVENS CONSOLIDATED LANDFILL SDG No.: DEVENS-1

Lab File ID: CJF1117 Lab Sample ID: WG185154-1

Instrument ID: GC12 Date Extracted: 06/10/16

Matrix: (soil/water) WATER Date Analyzed: 06/13/16

Level:(low/med) LOW Time Analyzed: 1240

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WG185154-LCS	WG185154-2	CJF1118	06/13/16	1325
02	WG185154-LCSD	WG185154-3	CJF1119	06/13/16	1410
03	LFM99-05A-0616	SJ4154-1RE	CJF1183	06/18/16	0104
04					
05					
06					
07					
08					
09					
10					
11					
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14					
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COMMENTS:

FORM IVDRO

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE ID
WG185154-BLANK

Lab Name: KATAHDIN ANALYTICAL SERVICES Lab Code: KAS

Project: FT. DEVENS CONSOLIDATED LANDFILL SDG No.: DEVENS-1

Lab File ID: CJF2117 Lab Sample ID: WG185154-1

Instrument ID: GC12 Date Extracted: 06/10/16

Matrix: (soil/water) WATER Date Analyzed: 06/13/16

Level:(low/med) LOW Time Analyzed: 1240

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WG185154-LCS	WG185154-2	CJF2118	06/13/16	1325
02	WG185154-LCSD	WG185154-3	CJF2119	06/13/16	1410
03	LFM99-05A-0616	SJ4154-1RE	CJF2183	06/18/16	0104
04					
05					
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COMMENTS:

FORM IVDRO

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE ID
WG185154-BLANK

Lab Name: KATAHDIN ANALYTICAL SERVICES Lab Code: KAS

Project: FT. DEVENS CONSOLIDATED LANDFILL SDG No.: DEVENS-1

Lab File ID: CJF1117A Lab Sample ID: WG185154-1

Instrument ID: GC12 Date Extracted: 06/10/16

Matrix: (soil/water) WATER Date Analyzed: 06/13/16

Level:(low/med) LOW Time Analyzed: 1240

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	WG185154-LCS	WG185154-2	CJF1118A	06/13/16	1325
02	WG185154-LCSD	WG185154-3	CJF1119A	06/13/16	1410
03	LFM99-05A-0616	SJ4154-1RE	CJF1183A	06/18/16	0104
04					
05					
06					
07					
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COMMENTS:

FORM IVDRO

Report of Analytical Results

Client:
Lab ID: WG185154-1
Client ID: Method Blank Sample
Project:
SDG: DEVENS-1
Lab File ID: CJF2117.D

Sample Date:
Received Date:
Extract Date: 10-JUN-16
Extracted By: HG
Extraction Method: SW846 3510
Lab Prep Batch: WG185154

Analysis Date: 13-JUN-16
Analyst: JLP
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	100	ug/L	1	100	100	50.	75.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C11-C22 Aromatics	U	100	ug/L	1	100	100	50.	75.
Naphthalene	J	1.5	ug/L	1	2	2.0	0.90	1.5
2-Methylnaphthalene	J	1.2	ug/L	1	2	2.0	0.80	1.5
Phenanthrene	J	1.5	ug/L	1	2	2.0	0.90	1.5
Acenaphthylene	J	1.2	ug/L	1	2	2.0	0.80	1.5
Acenaphthene	U	2.0	ug/L	1	2	2.0	1.8	1.9
Anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)pyrene	J	1.3	ug/L	1	2	2.0	1.3	1.5
Benzo(b)fluoranthene	J	1.2	ug/L	1	2	2.0	0.80	1.5
Benzo(g,h,i)perylene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(k)fluoranthene	J	1.3	ug/L	1	2	2.0	1.0	1.5
Chrysene	J	1.4	ug/L	1	2	2.0	0.90	1.5
Dibenzo(a,h)anthracene	U	2.0	ug/L	1	2	2.0	1.2	1.5
Fluoranthene	J	1.4	ug/L	1	2	2.0	0.80	1.5
Fluorene	J	1.2	ug/L	1	2	2.0	0.90	1.5
Indeno(1,2,3-cd)pyrene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Pyrene	J	1.4	ug/L	1	2	2.0	1.1	1.5
5-Alpha Androstane		73.2	%					
o-Terphenyl		65.9	%					
2-Fluorobiphenyl		83.6	%					
2-Bromonaphthalene		82.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG185154-2
LCSD ID: WG185154-3
Project:
SDG: DEVENS-1
Report Date: 21-JUN-16
LCS File ID: CJF2118.D

Received Date:
Extract Date: 10-JUN-16
Extracted By: HG
Extraction Method: SW846 3510
Lab Prep Batch: WG185154
LCSD File ID: CJF1119A.d

Analysis Date: 13-JUN-16
Analyst: JLP
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C11-C22 Aromatics	1530	1020	66.7	1010	66.0	ug/L	1	25	40-140
C9-C18 Aliphatics	540.	339.	62.8	410.	75.9	ug/L	19	25	40-140
C19-C36 Aliphatics	720.	517.	71.8	620.	86.1	ug/L	18	25	40-140
Naphthalene	90.0	54.4	60.4	53.6	59.6	ug/L	1	25	40-140
2-Methylnaphthalene	90.0	55.8	62.0	53.3	59.2	ug/L	4	25	40-140
Phenanthrene	90.0	58.8	65.3	56.8	63.1	ug/L	3	25	40-140
Acenaphthylene	90.0	52.6	58.4	48.4	53.8	ug/L	8	25	40-140
Acenaphthene	90.0	53.0	58.9	48.1	53.4	ug/L	10	25	40-140
Anthracene	90.0	62.0	68.9	62.4	69.3	ug/L	1	25	40-140
Benzo(a)anthracene	90.0	64.2	71.3	64.4	71.6	ug/L	0	25	40-140
Benzo(a)pyrene	90.0	61.7	68.6	61.9	68.8	ug/L	0	25	40-140
Benzo(b)fluoranthene	90.0	63.8	70.9	65.1	72.3	ug/L	2	25	40-140
Benzo(g,h,i)perylene	90.0	60.7	67.4	59.7	66.3	ug/L	2	25	40-140
Benzo(k)fluoranthene	90.0	60.3	67.0	59.8	66.4	ug/L	1	25	40-140
Chrysene	90.0	63.8	70.9	64.9	72.1	ug/L	2	25	40-140
Dibenzo(a,h)anthracene	90.0	62.6	69.6	63.5	70.6	ug/L	1	25	40-140
Fluoranthene	90.0	63.9	71.0	63.7	70.8	ug/L	0	25	40-140
Fluorene	90.0	54.4	60.4	50.1	55.7	ug/L	8	25	40-140
Indeno(1,2,3-cd)pyrene	90.0	57.5	63.9	58.4	64.9	ug/L	2	25	40-140
Pyrene	90.0	63.0	70.0	62.8	69.8	ug/L	0	25	40-140
5-Alpha Androstane			71.8		81.6				40-140
o-Terphenyl			73.7		68.2				40-140
2-Fluorobiphenyl			79.2		67.1				40-140
2-Bromonaphthalene			74.6		58.2				40-140

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : CJF1147.D
Instrument ID : GC12

SDG : DEVENS-1
Lab Sample ID : WG185286-1
Date Analyzed : 16-JUN-16
Time Analyzed : 15:28
Date Extracted : 13-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185286-2	CJF1148.D	06/16/16	16:13
Laboratory Control S	WG185286-3	CJF1149.D	06/16/16	16:59
Matrix Spike	WG185286-4	CJF1150.D	06/16/16	17:44
Matrix Spike Duplica	WG185286-5	CJF1151.D	06/16/16	18:29
LFM-99-02B_SPR16	SJ4226-1	CJF1156.D	06/16/16	22:16
LFM-99-06A_SPR16	SJ4226-2	CJF1157.D	06/16/16	23:01
DUP-1	SJ4226-3	CJF1158.D	06/16/16	23:46

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : CJF1147A.D
Instrument ID : GC12

SDG : DEVENS-1
Lab Sample ID : WG185286-1
Date Analyzed : 16-JUN-16
Time Analyzed : 15:28
Date Extracted : 13-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185286-2	CJF1148A.	06/16/16	16:13
Laboratory Control S	WG185286-3	CJF1149A.	06/16/16	16:59
Matrix Spike	WG185286-4	CJF1150A.	06/16/16	17:44
Matrix Spike Duplica	WG185286-5	CJF1151A.	06/16/16	18:29
LFM-99-02B_SPR16	SJ4226-1	CJF1156A.	06/16/16	22:16
LFM-99-06A_SPR16	SJ4226-2	CJF1157A.	06/16/16	23:01
DUP-1	SJ4226-3	CJF1158A.	06/16/16	23:46

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : CJF2147.D
Instrument ID : GC12

SDG : DEVENS-1
Lab Sample ID : WG185286-1
Date Analyzed : 16-JUN-16
Time Analyzed : 15:28
Date Extracted : 13-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185286-2	CJF2148.D	06/16/16	16:13
Laboratory Control S	WG185286-3	CJF2149.D	06/16/16	16:59
Matrix Spike	WG185286-4	CJF2150.D	06/16/16	17:44
Matrix Spike Duplica	WG185286-5	CJF2151.D	06/16/16	18:29
LFM-99-02B_SPR16	SJ4226-1	CJF2156.D	06/16/16	22:16
LFM-99-06A_SPR16	SJ4226-2	CJF2157.D	06/16/16	23:01
DUP-1	SJ4226-3	CJF2158.D	06/16/16	23:46

Report of Analytical Results

Client:
Lab ID: WG185286-1
Client ID: Method Blank Sample
Project:
SDG: DEVENS-1
Lab File ID: CJF2147.D

Sample Date:
Received Date:
Extract Date: 13-JUN-16
Extracted By: KF
Extraction Method: SW846 3510
Lab Prep Batch: WG185286

Analysis Date: 16-JUN-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	100	ug/L	1	100	100	50.	75.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C11-C22 Aromatics	U	100	ug/L	1	100	100	50.	75.
Naphthalene	U	2.0	ug/L	1	2	2.0	0.90	1.5
2-Methylnaphthalene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Phenanthrene	U	2.0	ug/L	1	2	2.0	0.90	1.5
Acenaphthylene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Acenaphthene	U	2.0	ug/L	1	2	2.0	1.8	1.9
Anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)pyrene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(b)fluoranthene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Benzo(g,h,i)perylene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(k)fluoranthene	U	2.0	ug/L	1	2	2.0	1.0	1.5
Chrysene	U	2.0	ug/L	1	2	2.0	0.90	1.5
Dibenzo(a,h)anthracene	U	2.0	ug/L	1	2	2.0	1.2	1.5
Fluoranthene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Fluorene	U	2.0	ug/L	1	2	2.0	0.90	1.5
Indeno(1,2,3-cd)pyrene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Pyrene	U	2.0	ug/L	1	2	2.0	1.1	1.5
5-Alpha Androstane		62.7	%					
o-Terphenyl		64.4	%					
2-Fluorobiphenyl		72.9	%					
2-Bromonaphthalene		71.8	%					

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LCS/LCSD Recovery Report

LCS ID: WG185286-2
LCSD ID: WG185286-3
Project:
SDG: DEVENS-1
Report Date: 21-JUN-16
LCS File ID: CJF2148.D

Received Date:
Extract Date: 13-JUN-16
Extracted By: KF
Extraction Method: SW846 3510
Lab Prep Batch: WG185286
LCSD File ID: CJF2149.d

Analysis Date: 16-JUN-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C11-C22 Aromatics	1530	731.	47.8	823.	53.8	ug/L	12	25	40-140
C9-C18 Aliphatics	540.	243.	45.0	260.	48.1	ug/L	7	25	40-140
C19-C36 Aliphatics	720.	378.	52.5	414.	57.5	ug/L	9	25	40-140
Naphthalene	90.0	38.7	43.0	40.6	45.1	ug/L	5	25	40-140
2-Methylnaphthalene	90.0	39.8	44.2	43.0	47.8	ug/L	8	25	40-140
Phenanthrene	90.0	41.8	46.4	47.1	52.3	ug/L	12	25	40-140
Acenaphthylene	90.0	38.4	42.7	42.2	46.9	ug/L	9	25	40-140
Acenaphthene	90.0	39.0	43.3	42.8	47.6	ug/L	9	25	40-140
Anthracene	90.0	43.5	48.3	49.8	55.3	ug/L	14	25	40-140
Benzo(a)anthracene	90.0	45.6	50.7	51.8	57.6	ug/L	13	25	40-140
Benzo(a)pyrene	90.0	43.9	48.8	50.2	55.8	ug/L	13	25	40-140
Benzo(b)fluoranthene	90.0	45.7	50.8	51.2	56.9	ug/L	11	25	40-140
Benzo(g,h,i)perylene	90.0	45.7	50.8	51.4	57.1	ug/L	12	25	40-140
Benzo(k)fluoranthene	90.0	42.6	47.3	49.4	54.9	ug/L	15	25	40-140
Chrysene	90.0	45.1	50.1	51.2	56.9	ug/L	13	25	40-140
Dibenzo(a,h)anthracene	90.0	44.3	49.2	50.2	55.8	ug/L	12	25	40-140
Fluoranthene	90.0	44.9	49.9	51.2	56.9	ug/L	13	25	40-140
Fluorene	90.0	39.7	44.1	43.7	48.6	ug/L	10	25	40-140
Indeno(1,2,3-cd)pyrene	90.0	40.1	44.6	45.3	50.3	ug/L	12	25	40-140
Pyrene	90.0	44.3	49.2	50.5	56.1	ug/L	13	25	40-140
5-Alpha Androstane			53.6		54.4				40-140
o-Terphenyl			54.4		56.4				40-140
2-Fluorobiphenyl			66.2		62.1				40-140
2-Bromonaphthalene			65.2		60.7				40-140

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MS/MSD Recovery Report

MS ID: WG185286-4
MSD ID: WG185286-5
Sample ID: SJ4226-1
Client ID: LFM-99-02B_SPR16
Project:
SDG: DEVENS-1
MS File ID: CJF2150.D

Received Date:
Extract Date: 13-JUN-16
Extracted By: KF
Extraction Method: SW846 3510
Lab Prep Batch: WG185286
Report Date: 21-JUN-16
MSD File ID: CJF2151.d

Analysis Date: 16-JUN-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Unadjusted C11-C22 Aromatics	1470	1460	ug/L	U100	795	780	54.0	53.5	2	25	40-140
C9-C18 Aliphatics	519.	514.	ug/L	U100	261	254	50.3	49.4	3	25	40-140
C19-C36 Aliphatics	692.	686.	ug/L	U100	407	407	58.8	59.4	0	25	40-140
Naphthalene	86.5	85.7	ug/L	U2.1	42	38.2	48.5	44.6	9	25	40-140
2-Methylnaphthalene	86.5	85.7	ug/L	U2.1	43.7	39.5	50.5	46.1	10	25	40-140
Phenanthrene	86.5	85.7	ug/L	U2.1	44.8	45.1	51.8	52.6	1	25	40-140
Acenaphthylene	86.5	85.7	ug/L	U2.1	42.2	38.2	48.8	44.6	10	25	40-140
Acenaphthene	86.5	85.7	ug/L	U2.1	42.7	38.6	49.3	45.0	10	25	40-140
Anthracene	86.5	85.7	ug/L	U2.1	46.4	47.2	53.6	55.1	2	25	40-140
Benzo(a)anthracene	86.5	85.7	ug/L	U2.1	49.4	49.6	57.1	57.9	0	25	40-140
Benzo(a)pyrene	86.5	85.7	ug/L	U2.1	47.7	47.9	55.1	55.9	0	25	40-140
Benzo(b)fluoranthene	86.5	85.7	ug/L	U2.1	49.5	48.6	57.2	56.7	2	25	40-140
Benzo(g,h,i)perylene	86.5	85.7	ug/L	U2.1	49.6	50.4	57.3	58.8	2	25	40-140
Benzo(k)fluoranthene	86.5	85.7	ug/L	U2.1	46.4	47.4	53.6	55.3	2	25	40-140
Chrysene	86.5	85.7	ug/L	U2.1	48.8	49.2	56.4	57.4	1	25	40-140
Dibenzo(a,h)anthracene	86.5	85.7	ug/L	U2.1	47.9	49.5	55.4	57.8	3	25	40-140
Fluoranthene	86.5	85.7	ug/L	U2.1	48.3	49.7	55.8	58.0	3	25	40-140
Fluorene	86.5	85.7	ug/L	U2.1	43	40.2	49.7	46.9	7	25	40-140
Indeno(1,2,3-cd)pyrene	86.5	85.7	ug/L	U2.1	44.1	44	51.0	51.3	0	25	40-140
Pyrene	86.5	85.7	ug/L	U2.1	47.6	49	55.0	57.2	3	25	40-140
5-Alpha Androstane							54.6	56.0			40-140
o-Terphenyl							54.8	56.9			40-140
2-Fluorobiphenyl							67.5	65.0			40-140
2-Bromonaphthalene							65.9	63.6			40-140

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4154-1
Client ID: LFM99-05A-0616
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10184.D

Sample Date: 08-JUN-16
Received Date: 09-JUN-16
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		83.6	%					
2,5-Dibromotoluene (PID)		90.8	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4154-2
Client ID: LFM99-02B-H
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10185.D

Sample Date: 08-JUN-16
Received Date: 09-JUN-16
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		89.8	%					
2,5-Dibromotoluene (PID)		96.9	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4154-3
Client ID: LFM99-06A-H
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10186.D

Sample Date: 08-JUN-16
Received Date: 09-JUN-16
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	J	0.82	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	J	2.0	ug/L	1	10	10.	0.86	7.5
o-Xylene	J	0.89	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		90.1	%					
2,5-Dibromotoluene (PID)		97.7	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4154-4
Client ID: LFM99-05A-H
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10187.D

Sample Date: 08-JUN-16
Received Date: 09-JUN-16
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		86.2	%					
2,5-Dibromotoluene (PID)		93.6	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4154-5
Client ID: TRIP BLANK
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10188.D

Sample Date: 08-JUN-16
Received Date: 09-JUN-16
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		81.5	%					
2,5-Dibromotoluene (PID)		88.9	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4226-1
Client ID: LFM-99-02B_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10217.D

Sample Date: 09-JUN-16
Received Date: 10-JUN-16
Extract Date: 20-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185715

Analysis Date: 20-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		72.6	%					
2,5-Dibromotoluene (PID)		77.5	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4226-2
Client ID: LFM-99-06A_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10218.D

Sample Date: 09-JUN-16
Received Date: 10-JUN-16
Extract Date: 20-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185715

Analysis Date: 20-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		80.4	%					
2,5-Dibromotoluene (PID)		86.3	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4226-3
Client ID: DUP-1
Project: Ft. Devens Consolidated Landfill
SDG: DEVENS-1
Lab File ID: 9JF10219.D

Sample Date: 09-JUN-16
Received Date: 10-JUN-16
Extract Date: 20-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185715

Analysis Date: 20-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	J	0.82	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	J	1.8	ug/L	1	10	10.	0.86	7.5
o-Xylene	J	1.1	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		89.0	%					
2,5-Dibromotoluene (PID)		96.4	%					

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : 9JF10176.D
Instrument ID : GC09

SDG : DEVENS-1
Lab Sample ID : WG185487-1
Date Analyzed : 16-JUN-16
Time Analyzed : 10:53
Date Extracted : 16-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185487-2	9JF10177.D	06/16/16	12:00
Laboratory Control S	WG185487-3	9JF10178.D	06/16/16	12:47
LFM99-05A-0616	SJ4154-1	9JF10184.D	06/16/16	18:42
LFM99-02B-H	SJ4154-2	9JF10185.D	06/16/16	19:32
LFM99-06A-H	SJ4154-3	9JF10186.D	06/16/16	20:23
LFM99-05A-H	SJ4154-4	9JF10187.D	06/16/16	21:13
TRIP BLANK	SJ4154-5	9JF10188.D	06/16/16	22:03

Report of Analytical Results

Client:
Lab ID: WG185487-1
Client ID: Method Blank Sample
Project:
SDG: DEVENS-1
Lab File ID: 9JF10176.D

Sample Date:
Received Date:
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		85.1	%					
2,5-Dibromotoluene (PID)		92.1	%					

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LCS/LCSD Recovery Report

LCS ID: WG185487-2
LCSD ID: WG185487-3
Project:
SDG: DEVENS-1
Report Date: 22-JUN-16
LCS File ID: 9JF10177.D

Received Date:
Extract Date: 16-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185487
LCSD File ID: 9JF10178.D

Analysis Date: 16-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C5-C8 Aliphatics	300.	384.	128.	278.	92.7	ug/L	32*	25	70-130
Unadjusted C9-C12 Aliphatics	200.	236.	118.	229.	114.	ug/L	3	25	70-130
C5-C8 Aliphatics	300.	384.	128.	278.	92.7	ug/L	32*	25	70-130
C9-C12 Aliphatics	200.	236.	118.	229.	114.	ug/L	3	25	70-130
C9-C10 Aromatics	100.	111.	111.	110.	110.	ug/L	1	25	70-130
Benzene	100.	115.	115.	116.	116.	ug/L	1	25	70-130
Ethylbenzene	100.	110.	110.	109.	109.	ug/L	1	25	70-130
Methyl tert-butylether	100.	114.	114.	77.6	77.6	ug/L	38*	25	70-130
Naphthalene	100.	87.8	87.8	94.9	94.9	ug/L	8	25	70-130
Toluene	100.	110.	110.	110.	110.	ug/L	0	25	70-130
m+p-Xylenes	200.	218.	109.	217.	108.	ug/L	0	25	70-130
o-Xylene	100.	110.	110.	109.	109.	ug/L	1	25	70-130
2,5-Dibromotoluene (FID)			91.9		97.4				70-130
2,5-Dibromotoluene (PID)			98.9		105.				70-130

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : 9JF10208.D
Instrument ID : GC09

SDG : DEVENS-1
Lab Sample ID : WG185715-1
Date Analyzed : 20-JUN-16
Time Analyzed : 11:52
Date Extracted : 20-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185715-2	9JF10209.D	06/20/16	12:59
Laboratory Control S	WG185715-3	9JF10210.D	06/20/16	13:47
LFM-99-02B_SPR16	SJ4226-1	9JF10217.D	06/20/16	20:49
LFM-99-06A_SPR16	SJ4226-2	9JF10218.D	06/20/16	21:38
DUP-1	SJ4226-3	9JF10219.D	06/20/16	22:28
Matrix Spike	WG185715-4	9JF10220.D	06/20/16	23:18
Matrix Spike Duplica	WG185715-5	9JF10221.D	06/21/16	00:08

Report of Analytical Results

Client:
Lab ID: WG185715-1
Client ID: Method Blank Sample
Project:
SDG: DEVENS-1
Lab File ID: 9JF10208.D

Sample Date:
Received Date:
Extract Date: 20-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185715

Analysis Date: 20-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		79.9	%					
2,5-Dibromotoluene (PID)		85.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG185715-2
LCSD ID: WG185715-3
Project:
SDG: DEVENS-1
Report Date: 22-JUN-16
LCS File ID: 9JF10209.D

Received Date:
Extract Date: 20-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185715
LCSD File ID: 9JF10210.D

Analysis Date: 20-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C5-C8 Aliphatics	300.	390.	130.	340.	113.	ug/L	14	25	70-130
Unadjusted C9-C12 Aliphatics	200.	234.	117.	200.	100.	ug/L	16	25	70-130
C5-C8 Aliphatics	300.	390.	130.	340.	113.	ug/L	14	25	70-130
C9-C12 Aliphatics	200.	234.	117.	200.	100.	ug/L	16	25	70-130
C9-C10 Aromatics	100.	107.	107.	98.6	98.6	ug/L	8	25	70-130
Benzene	100.	114.	114.	103.	103.	ug/L	10	25	70-130
Ethylbenzene	100.	107.	107.	97.4	97.4	ug/L	9	25	70-130
Methyl tert-butylether	100.	79.9	79.9	74.1	74.1	ug/L	8	25	70-130
Naphthalene	100.	87.0	87.0	86.2	86.2	ug/L	1	25	70-130
Toluene	100.	109.	109.	98.3	98.3	ug/L	10	25	70-130
m+p-Xylenes	200.	212.	106.	195.	97.5	ug/L	8	25	70-130
o-Xylene	100.	107.	107.	97.9	97.9	ug/L	9	25	70-130
2,5-Dibromotoluene (FID)			97.4		89.8				70-130
2,5-Dibromotoluene (PID)			104.		96.7				70-130

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MS/MSD Recovery Report

MS ID: WG185715-4
MSD ID: WG185715-5
Sample ID: SJ4226-1
Client ID: LFM-99-02B_SPR16
Project:
SDG: DEVENS-1
MS File ID: 9JF10220.D

Received Date:
Extract Date: 20-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185715
Report Date: 22-JUN-16
MSD File ID: 9JF10221.D

Analysis Date: 20-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Unadjusted C5-C8 Aliphatics	300.	300.	ug/L	U100	342	332	114.	111.	3	50	70-130
Unadjusted C9-C12 Aliphatics	200.	200.	ug/L	U100	202	177	101.	88.5	13	50	70-130
C5-C8 Aliphatics	300.	300.	ug/L	U100	342	332	114.	111.	3	50	70-130
C9-C12 Aliphatics	200.	200.	ug/L	U100	202	177	101.	88.5	13	50	70-130
C9-C10 Aromatics	100.	100.	ug/L	U100	95.9	95.4	95.9	95.4	0	50	70-130
Benzene	100.	100.	ug/L	U3.0	85.5	104	85.5	104.	20	50	70-130
Ethylbenzene	100.	100.	ug/L	U5.0	96.9	96.3	96.9	96.3	1	50	70-130
Methyl tert-butylether	100.	100.	ug/L	U5.0	87.6	83.5	87.6	83.5	5	50	70-130
Naphthalene	100.	100.	ug/L	U5.0	89.9	91.6	89.9	91.6	2	50	70-130
Toluene	100.	100.	ug/L	U5.0	98.5	98.1	98.5	98.1	0	50	70-130
m+p-Xylenes	200.	200.	ug/L	U10	193	192	96.5	96.0	0	50	70-130
o-Xylene	100.	100.	ug/L	U5.0	98.4	97.5	98.4	97.5	1	50	70-130
2,5-Dibromotoluene (FID)							82.5	88.5			70-130
2,5-Dibromotoluene (PID)							89.4	95.6			70-130

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Jennifer Obrin

From: Ragnaldsen, Amy [Amy.Ragnaldsen@testamericainc.com]
Sent: Monday, June 13, 2016 12:22 PM
To: Jennifer Obrin
Cc: Lanier, Jerry
Subject: Important Request from TestAmerica in Savannah on Project received by Katahdin
Attachments: Samples 680-126189 Rec. 6-9-16.pdf; Samples 680-126246 Rec. 6-10-16.pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Jennifer,

The client wants the samples received on 6/9/16 and 6/10/16 on one lab report.

I have attached your 2 samples receipts; you received samples on Thursday 6/9/16 and Friday 6/10/16.

All of the samples should be under one report & invoice from Katahadin, on that one report & invoice please reference only **TestAmerica Job #680-126189**
(We have removed job number 680-126246)

Please let me know you received this and can do this for this project.

Thank you so much!!

(P.S. The samples you received on Saturday 6/11/16 will be on just one report & invoice by themselves send me the OCC when you can so I can give you the job number)

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Monday, June 13, 2016 6:01 AM
To: Ragnaldsen, Amy
Cc: Lanier, Jerry
Subject: RE: TestAmerica in Savannah Project * Samples received at Katahdin today 6/9/16?

My apologies, here is the attachment.

Have a great day!
Jen

Katahdin Analytical Services DEVENS-1 page 00000362/2016000042

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: Test America	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GV	Delivered By: Fedex
KAS Work Order#: SJ4154	KIMS Review By: JO	Received By: JO
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 6-9-16 | 0950

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not,.take temperature of any sample w/ IR gun.		✓		-	Temp (°C): 2.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Trip Blank not listed on chain of custody.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: Test America	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: CaN	Delivered By: Fedex
KAS Work Order#: 57 42216	KIMS Review By:	Received By: SO
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 6-10-16 / 0950

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.		✓			Temp (°C): 2.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?		✓			
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

CHAIN OF CUSTODY RECORD

KGS

SJ4154

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

360325-Boston

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	
TESTAMERICA (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Jerry Lanier		W912WJ-10-D-0003
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson	(508) 366-7442	508-366-7445
CLIENT NAME	CLIENT EMAIL	
KOMAN Government Solutions, LLC	lekes@komangs.com eanderson@komangs.com	
CLIENT ADDRESS		
160 East Main Street,, Suite 2F, Westborough, MA 01581		
Deven's Consolidated Landfill		

PAGE 1 of 1

STANDARD REPORT DELIVERY ○ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: (1)

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)

REQUIRED ANALYSES

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	Total Metals (6010B TAL 12 metals) 1-300ml Poly + Mercury (HNO3)	VPH (MassDEP) 3-40ml VOA vials (HCl)	EPH (MassDEP) 2-1L Amber Glass (HCl)	Pesticides (8081A) 2-1L Amber	Total Dissolved Solids (160.1)/Anions (300)/Alkalinity (2320B) 1-500ml Poly	Chemical Oxygen Demand (410.4) 1-~~250ml Poly~~ 500ml Glass (H2SO4)	Nitrate/Nitrite (353.2) 1-500ml ~~Poly~~ Glass (H2SO4)	Cynade ~~Mercury~~ KGA (NaOH)		REMARKS
6/8/16	1230	~~LFM-99-02B_SPR16~~ LFM 99-05A-0616		x				1	3	2	2	3	1	1	1		14 JARS -
	KGA	~~LFM-99-05A_SPR16~~		~~x~~				~~1~~	~~3~~	~~2~~	~~2~~	~~1~~	~~1~~	~~1~~			
	KGA	~~LFM-99-06A_SPR16~~		~~x~~				~~1~~	~~3~~	~~2~~	~~2~~	~~1~~	~~1~~	~~1~~			
	KGA	~~LFM-03-07_SPR16~~ VGA		x				1	3	2	2	1	1	1			
6/8/16	947	LFM 99 02B - H		x				✓	✓						✓		2VOA ~~Add trips, dups, ms/msd etc.~~ 1plastic
6/8/16	1357	LFM 99 06A - H		x				✓	✓								2VOA 1 plastic
6/8/16	912	LFM 99 05A - H							✓								1 VOA

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)
[signature]	6/8/16	1430	[signature]	6-8-16	1730	
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**
[signature]	6-8-16	1800	[signature]	6-9-16	09:45	

Denver — 2320B 250 poly
H2SO4 - Amber
Maine — VPH + EPH
SAVANNAH
The Rest

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS:
			YES NO			
			YES ○ NO ○			

CHAIN OF CUSTODY RECORD

KGS

360325-Boston

SJ4226

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	DOL

TESTAMERICA (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Jerry Lanier		W912WJ-10-D-0003

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson	(508) 366-7442	508-366-7445

CLIENT NAME	CLIENT EMAIL
KOMAN Government Solutions, LLC	lekes@komangs.com

CLIENT ADDRESS
160 East Main Street,, Suite 2F, Westborough, MA 01581

Deven's Consolidated Landfill

PAGE 1 of

STANDARD REPORT DELIVERY ○ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3 coolers

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)

REQUIRED ANALYSES / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	Total Metals (6010B TAL 12 metals) 1-300ml Poly + Mercury HNO3	VPH (MassDEP) 3-40ml VOA vials HCl	EPH (MassDEP) 2-1L Amber Glass HCl	Pesticides (8081A) 2-1L Amber	Total Dissolved Solids (160.1)/Anions (300)/Alkalinity (2320B) 1-500ml Poly	Chemical Oxygen Demand (410.4) 1-250 ml ~~Poly~~ glass H2SO4	Nitrate/Nitrite (353.2) 1-500ml Poly H2SO4	Cyanide NaOH		REMARKS
6/9/16	1040	LFM-99-02B_SPR16		x				1	3	2	2	3	1	1	1		14 Jars (MS/MSD)
		~~LFM-99-05A_SPR16~~ ILLA		~~x~~				~~1~~	~~3~~	~~2~~	~~2~~	~~1~~	~~1~~	~~1~~			
6/9/16	925	LFM-99-06A_SPR16		x				1	3	2	2	3	1	1	1		14 Jars
		~~LFM-03-07_SPR16~~ ILLA		~~x~~				~~1~~	~~3~~	~~2~~	~~2~~	~~1~~	~~1~~	~~1~~			
6/9/16	00:00	DUP-1		X				1	3	2	2	3	1	1	1		Add trips, dups, ms/msd etc.

MAINE VPA - EPH
DENVER, 353.2 - 410 - COD
2540C - TDS 9060 TOC + DOC
2320B - + AMMONIA
SAVANNAH - THE REST

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Sean Enos [signature]	6/9/16	1405	[signature]	6-9-16	1405	[signature]	6-9-16	1700

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
						[signature]	6-10-16	09:50

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS:
			YES ○ NO ○			

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Jun. 13, 2016
03:42 PM

Login Number: SJ4154

Account: TASAV001 NoWeb
Test America Savannah

Project:

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL. "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-126189
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	2.8
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	GN
PM	:	JO
PROJECT NAME	:	Ft. Devens Consolidated Landfill
QC LEVEL	:	II
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	DEVENS-1
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Begin Date	Due Date	Mailed
SJ4154-1	LFM99-05A-0616	08-JUN-16 12:30	09-JUN-16				21-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	22-JUN-16	1L N-Amber Glass		
Aqueous	S	MA-VPH	22-JUN-16	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Begin Date	Due Date	Mailed
SJ4154-2	LFM99-02B-H	08-JUN-16 09:47	09-JUN-16				21-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	22-JUN-16	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Begin Date	Due Date	Mailed
SJ4154-3	LFM99-06A-H	08-JUN-16 13:57	09-JUN-16				21-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	22-JUN-16	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Begin Date	Due Date	Mailed
SJ4154-4	LFM99-05A-H	08-JUN-16 09:12	09-JUN-16				21-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	22-JUN-16	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Begin Date	Due Date	Mailed
SJ4154-5	TRIP BLANK	08-JUN-16 00:00	09-JUN-16				21-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	22-JUN-16	40mL Vial+HCl		

Total Samples: *5* ***Total Analyses:*** *6*

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Jun. 13, 2016
03:43 PM

Login Number: SJ4226

Account: TASAV001 NoWeb
Test America Savannah

Project:

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL. "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-126189
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	2.8
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	GN
PM	:	JO
PROJECT NAME	:	Ft. Devens Consolidated Landfill
QC LEVEL	:	II
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	DEVENS-1
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	End Date	Due Date	Mailed
SJ4226-1	LFM-99-02B_SPR16	09-JUN-16 10:40	10-JUN-16				22-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	23-JUN-16	1L N-Amber Glass		**MS/MSD**
Aqueous	S	MA-VPH	23-JUN-16	40mL Vial+HCl		

SJ4226-2	LFM-99-06A_SPR16	09-JUN-16 09:25	10-JUN-16				22-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	23-JUN-16	1L N-Amber Glass		
Aqueous	S	MA-VPH	23-JUN-16	40mL Vial+HCl		

SJ4226-3	DUP-1	09-JUN-16 00:00	10-JUN-16				22-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	23-JUN-16	1L N-Amber Glass		
Aqueous	S	MA-VPH	23-JUN-16	40mL Vial+HCl		

SJ4226-4	LFM-99-02B_SPR16MS	09-JUN-16 10:40	10-JUN-16				22-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	23-JUN-16			**MS charge only. Not a sample.**
Aqueous	S	MA-VPH	23-JUN-16			

SJ4226-5	LFM-99-02B_SPR16MSD	09-JUN-16 10:40	10-JUN-16				22-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	23-JUN-16			**MSD charge only. Not a sample.**
Aqueous	S	MA-VPH	23-JUN-16			

Total Samples: ***5*** ***Total Analyses:*** ***10***

CHAIN OF CUSTODY RECORD

KGS

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

360325-Boston

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	DGL

TESTAMERICA (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO
Jerry Lanier		W912WJ-10-D-0003

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson	(508) 366-7442	508-366-7445

CLIENT NAME	CLIENT EMAIL
KOMAN Government Solutions, LLC	lekes@komangs.com canderson@komangs.com

CLIENT ADDRESS
160 East Main Street,, Suite 2F, Westborough, MA 01581

Deven's Consolidated Landfill

PAGE: 1 of 1

STANDARD REPORT DELIVERY ◯ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: (1)

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	REQUIRED ANALYSES: Total Metals (6010B TAL 12 metals) 1-300ml Poly + Mercury (HNO3)	VPH (MassDEP) 3-40ml VOA vials (HCl)	EPH (MassDEP) 2-1L Amber Glass (HCl)	Pesticides (8081A) 2-1L Amber	Total Dissolved Solids (160.1)/Anions (300)/Alkalinity (2320B) 1-500ml Poly	Chemical Oxygen Demand (410.4) 1-250ml plastic 500ml Glass (H2SO4)	Nitrate/Nitrite (353.2) 1-500ml Poly Glass (H2SO4)	Cyanide, Hexavalent Cr (NaOH)	REMARKS
6/8/16	1230	~~LFM-99-02B_SPR16~~ LFM 99-05A	C	x				1	3	2	2	3	1	1	1	14 JARS -
	KGA	~~LFM-99-05A_SPR16~~		x				1	3	2	2	1	1	1		
	KGA	~~LFM-99-06A_SPR16~~		x				1	3	2	2	1	1	1		
	KGA	~~LFM-03-07_SPR16~~ VOA		x				1	3	2	2	1	1	1		
6/8/16	947	LFM 99 02B - H		x				✓	✓						✓	2VOA ~~Add trips, dups, ms/msd etc..~~ 1 plastic
6/8/16	1357	LFM 99 06A - H		x				✓	✓							2 VOA 1 plastic
6/8/16	912	LFM 99 05A - H							✓							1 VOA

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
	6/8/16	1430		6-8-16	1150		6-9-16	1650

RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
	6-8-16	1850		6-9-16	930		6-10-16	9:29 3-1/3-4

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE	TIME	CUSTODY INTACT: YES / NO	CUSTODY SEAL NO	SAVANNAH LOG NO.	LABORATORY REMARKS.
			YES ◯ NO ◯			

680-126189 Chain of Custody

CHAIN OF CUSTODY RECORD

KGS

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

360325-Boston

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	DGL

TESTAMERICA (LAB) PROJECT MANAGER	P O NUMBER	CONTRACT NO
Jerry Lanier		W912WJ-10-D-0003

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson	(508) 366-7442	508-366-7445

CLIENT NAME	CLIENT EMAIL
KOMAN Government Solutions, LLC	lekes@komangs.com

CLIENT ADDRESS
160 East Main Street,, Suite 2F, Westborough, MA 01581

Deven's Consolidated Landfill

PAGE: 1 of

STANDARD REPORT DELIVERY ○ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3 coolers

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	REQUIRED ANALYSES: Total Metals (6010B TAL 12 metals) 1-300ml Poly & Mercury	VPH (MassDEP) 3-40ml VOA vials	EPH (MassDEP) 2-1L Amber Glass	Pesticides (8081A) 2-1L Amber	Total Dissolved Solids (160.1)/Anions (300)/Alkalinity (2320B) 1-500ml Poly	Chemical Oxygen Demand (410.4) 1-250 ml Poly	Nitrate/Nitrite (353.2) 1-500ml Poly	1/90TH Cyanide	REMARKS
								HNO3	HCl	HCl			H2SO4	H2SO4		
								NUMBER OF CONTAINERS SUBMITTED								
6/9/16	1040	LFM-99-02B_SPR16		x				1	3	2	2	3	1	1	1	14 Jars (MS/MSD)
		~~LFM-99-05A_SPR16~~ WA		~~x~~				~~1~~	~~3~~	~~2~~	~~2~~	~~1~~	~~1~~	~~1~~		
6/9/16	925	LFM-99-06A_SPR16		x				1	3	2	2	3	1	1	1	14 Jars
		~~LFM-99-07_SPR16~~ WA		~~x~~				~~1~~	~~3~~	~~2~~	~~2~~	~~1~~	~~1~~	~~1~~		
6/9/16	00:00	DUP-1		X				1	3	2	2	3	1	1	1	Add trips, dups, ms/msd etc.

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
Sean Enos	6/9/16	1405		6-9-16	1405		6-9-16	1700
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
	6-10-16	9:29	1.2/1.5 cf					

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO	SAVANNAH LOG NO.	LABORATORY REMARKS.
			YES ○ NO ○			680-126246 Chain of Custody

CHAIN OF CUSTODY RECORD

KGS

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

360325-Boston

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	DCL

TESTAMERICA (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Jerry Lanier		W912WJ-10-D-0003

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson	(508) 366-7442	508-366-7445

CLIENT NAME	CLIENT EMAIL
KOMAN Government Solutions, LLC	lekes@komangs.com eanderson@komangs.com

CLIENT ADDRESS: 160 East Main Street,, Suite 2F, Westborough, MA 01581

Deven's Consolidated Landfill

PAGE: 1 of 1

STANDARD REPORT DELIVERY ◯ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: (1)

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	REQUIRED ANALYSES: Total Metals (6010B TAL 12 metals) 1-300ml Poly + Mercury — HNO3	VPH (MassDEP) 3-40ml VOA vials — HCl	EPH (MassDEP) 2-1L Amber Glass — HCl	Pesticides (8081A) 2-1L Amber	Total Dissolved Solids (160.1)/Anions (300)/Alkalinity (2320B) 1-500ml Poly	Chemical Oxygen Demand (410.4) 1-250ml Poly 500ml Glass	Nitrate/Nitrite (353.2) 1-500ml Poly Glass — H2SO4	Cyanide + Mercury — NaOH	REMARKS
								NUMBER OF CONTAINERS SUBMITTED								
6/8/16	1230	~~LFM-99-02B_SPR16~~ LFM 99-05A ~~GW~~	C	x				1	3	2	2	3	1	1	1	14 JARS -
	KGA	~~LFM-99-05A_SPR16~~	C	x				1	3	2	2	1	1	1		
	KGA	~~LFM-99-06A_SPR16~~	C	x				1	3	2	2	1	1	1		
	KGA	~~LFM-03-07_SPR16~~ N/A	C	x				1	3	2	2	1	1	1		
6/8/16	942	LFM 99 02B - H	C	x				✓	✓						~~X~~	2 VOA ~~Add trips, dups, ms/msd etc.~~ 1 plastic
6/8/16	1357	LFM 99 06A - H	C	x				✓	✓							2 VOA 1 plastic
6/8/16	912	LFM 99 05A - H	C						✓							1 VOA

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	6/8/16	1430		6-8-16	1730		6-9-16	1630
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	6-9-16	1800		6-9-16	930		6/10/16	0925

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS:
			YES ◯ NO ◯			2.440.0 IR#5 Transferred by DW 6/10/16

680-126189 Chain of Custody

6/28/2016

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-126189-1

Login Number: 126189
List Number: 1
Creator: Ragnaldsen, Amy E

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-126189-1

Login Number: 126189
List Number: 2
Creator: Muniz, Ashley T

List Source: TestAmerica Denver
List Creation: 06/09/16 03:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-126189-1

Login Number: 126189
List Number: 3
Creator: Muniz, Ashley T

List Source: TestAmerica Denver
List Creation: 06/10/16 05:12 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-126189-1

Login Number: 126246
List Number: 1
Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-126189-1

Login Number: 126246
List Number: 2
Creator: Muniz, Ashley T

List Source: TestAmerica Denver
List Creation: 06/10/16 05:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Deven's Consolidated Landfill

TestAmerica Job ID: 680-126189-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-126310-1
Client Project/Site: Fort Devens / AOC 57 & AOC 32/43A

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
6/28/2016 4:55:19 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-126310-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Fort Devens / AOC 57 & AOC 32/43A

Report Number: 680-126310-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 06/11/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1º C and 4.0º C.

VOLATILE ORGANIC COMPOUNDS (GC/MS)
Samples 32M-01-13XBR_SPR16 (680-126310-7), 32M-01-14XOB_SPR16 (680-126310-8), 32M-01-17XBR_SPR16 (680-126310-9), 32M-01-18XBR_SPR16 (680-126310-10), 32M-DUP-1 (680-126310-11), Trip Blank (680-126310-12) and 32M-01-17XBR_H (680-126310-13) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 06/17/2016.

DOD5 states that all project analytes must be within 20% of the true value in the Second Source Calibration Verification (ICV) and the Continuing Calibration Verification (CCV). The laboratory requires all of the analytes in the Second Source Calibration Verification (ICV) and the Continuing Calibration Verification (CCV) to be within 20% of the expected value. Hexachlorobutadiene was the only compound of concern that was outside of 20%.

Sample 32M-01-18XBR_SPR16 (680-126310-10)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples 57M-95-03X_SPR16 (680-126310-1), 57M-96-11X_SPR16 (680-126310-2), 57M-AREA3_SW1_SPR16 (680-126310-3), DUP-1 (680-126310-6), 32M-01-13XBR_SPR16 (680-126310-7), 32M-01-14XOB_SPR16 (680-126310-8), 32M-01-17XBR_SPR16 (680-126310-9), 32M-01-18XBR_SPR16 (680-126310-10), 32M-DUP-1 (680-126310-11) and 32M-01-17XBR_H (680-126310-13) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 06/14/2016 and 06/21/2016 and analyzed on 06/16/2016 and 06/21/2016.

Dissolved Iron failed the recovery criteria low for the MSD of sample 57M-95-03X_SPR16MSD (680-126310-1) in batch 680-437826.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples 57M-95-03X_SPR16 (680-126310-1), 57M-96-11X_SPR16 (680-126310-2), 57M-AREA3_SW1_SPR16 (680-126310-3), 57M-95-03X_H (680-126310-4), 57M-96-11X_H (680-126310-5) and DUP-1 (680-126310-6) were analyzed for Metals (ICP) in accordance

Job ID: 680-126310-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

with EPA SW-846 Method 6010C. The samples were prepared on 06/15/2016 and analyzed on 06/16/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP-MS)

Samples 57M-95-03X_SPR16 (680-126310-1), 57M-96-11X_SPR16 (680-126310-2), 57M-AREA3_SW1_SPR16 (680-126310-3), DUP-1 (680-126310-6), 32M-01-13XBR_SPR16 (680-126310-7), 32M-01-14XOB_SPR16 (680-126310-8), 32M-01-17XBR_SPR16 (680-126310-9), 32M-01-18XBR_SPR16 (680-126310-10), 32M-DUP-1 (680-126310-11) and 32M-01-17XBR_H (680-126310-13) were analyzed for Metals (ICP-MS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 06/14/2016 and 06/21/2016 and analyzed on 06/16/2016 and 06/21/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS

Samples 57M-95-03X_SPR16 (680-126310-1), 57M-96-11X_SPR16 (680-126310-2), 57M-AREA3_SW1_SPR16 (680-126310-3), 57M-95-03X_H (680-126310-4), 57M-96-11X_H (680-126310-5) and DUP-1 (680-126310-6) were analyzed for Metals in accordance with EPA SW-846 Method 6020. The samples were prepared on 06/15/2016 and analyzed on 06/16/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Subcontract Work

Method MA VPH: This method was subcontracted to Katahdin Analytical Services Inc. The subcontract laboratory certification is different from that of the facility issuing the final report.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-126310-1	57M-95-03X_SPR16	Water	06/07/16 12:55	06/11/16 10:06
680-126310-2	57M-96-11X_SPR16	Water	06/09/16 14:15	06/11/16 10:06
680-126310-3	57M-AREA3_SW1_SPR16	Water	06/09/16 15:10	06/11/16 10:06
680-126310-4	57M-95-03X_H	Water	06/09/16 11:40	06/11/16 10:06
680-126310-5	57M-96-11X_H	Water	06/09/16 11:55	06/11/16 10:06
680-126310-6	DUP-1	Water	06/09/16 00:00	06/11/16 10:06
680-126310-7	32M-01-13XBR_SPR16	Water	06/10/16 11:45	06/11/16 10:06
680-126310-8	32M-01-14XOB_SPR16	Water	06/10/16 10:50	06/11/16 10:06
680-126310-9	32M-01-17XBR_SPR16	Water	06/10/16 10:50	06/11/16 10:06
680-126310-10	32M-01-18XBR_SPR16	Water	06/10/16 12:40	06/11/16 10:06
680-126310-11	32M-DUP-1	Water	06/10/16 00:00	06/11/16 10:06
680-126310-12	Trip Blank	Water	06/10/16 00:00	06/11/16 10:06
680-126310-13	32M-01-17XBR_H	Water	06/10/16 13:45	06/11/16 10:06

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
MA VPH	MADEP VPH Volatile Petroleum Hydrocarbon	NONE	

Protocol References:

NONE = NONE

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.

Metals

Qualifier	Qualifier Description
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: 57M-95-03X_SPR16

Lab Sample ID: 680-126310-1

Date Collected: 06/07/16 12:55
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4700		50	17	ug/L		06/15/16 08:41	06/16/16 22:17	1
Manganese	130		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:17	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Iron	4500	J	50	17	ug/L		06/14/16 13:18	06/16/16 19:20	1
Dissolved Manganese	140		10	1.0	ug/L		06/14/16 13:18	06/16/16 19:20	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	31		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 06:07	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	25		3.0	1.5	ug/L		06/14/16 13:18	06/16/16 08:09	1

Client Sample ID: 57M-96-11X_SPR16

Lab Sample ID: 680-126310-2

Date Collected: 06/09/16 14:15
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	32000		50	17	ug/L		06/15/16 08:41	06/16/16 22:32	1
Manganese	2800		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Iron	29000		50	17	ug/L		06/14/16 13:18	06/16/16 19:46	1
Dissolved Manganese	2800		10	1.0	ug/L		06/14/16 13:18	06/16/16 19:46	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	290		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 06:22	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	130		3.0	1.5	ug/L		06/14/16 13:18	06/16/16 08:54	1

Client Sample ID: 57M-AREA3_SW1_SPR16

Lab Sample ID: 680-126310-3

Date Collected: 06/09/16 15:10
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	19000		50	17	ug/L		06/15/16 08:41	06/16/16 22:38	1
Manganese	1400		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:38	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Iron	6500		50	17	ug/L		06/14/16 13:18	06/16/16 20:02	1
Dissolved Manganese	1300		10	1.0	ug/L		06/14/16 13:18	06/16/16 20:02	1

Client Sample ID: 57M-AREA3_SW1_SPR16

Lab Sample ID: 680-126310-3
Date Collected: 06/09/16 15:10
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	23		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 06:27	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	8.1		3.0	1.5	ug/L		06/14/16 13:18	06/16/16 08:59	1

Client Sample ID: 57M-95-03X_H

Lab Sample ID: 680-126310-4
Date Collected: 06/09/16 11:40
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5500		50	17	ug/L		06/15/16 08:41	06/16/16 22:43	1
Manganese	110		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:43	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	43		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 06:32	1

Client Sample ID: 57M-96-11X_H

Lab Sample ID: 680-126310-5
Date Collected: 06/09/16 11:55
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	40000		50	17	ug/L		06/15/16 08:41	06/16/16 22:48	1
Manganese	2900		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:48	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	890		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 06:37	1

Client Sample ID: DUP-1

Lab Sample ID: 680-126310-6
Date Collected: 06/09/16 00:00
Matrix: Water
Date Received: 06/11/16 10:06

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	32000		50	17	ug/L		06/15/16 08:41	06/16/16 22:53	1
Manganese	2800		10	1.0	ug/L		06/15/16 08:41	06/16/16 22:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Iron	28000		50	17	ug/L		06/14/16 13:18	06/16/16 20:07	1
Dissolved Manganese	2800		10	1.0	ug/L		06/14/16 13:18	06/16/16 20:07	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	290		3.0	1.5	ug/L		06/15/16 08:41	06/16/16 06:43	1

Client Sample ID: DUP-1

Lab Sample ID: 680-126310-6

Date Collected: 06/09/16 00:00

Matrix: Water

Date Received: 06/11/16 10:06

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	130		3.0	1.5	ug/L		06/14/16 13:18	06/16/16 09:04	1

Client Sample ID: 32M-01-13XBR_SPR16

Lab Sample ID: 680-126310-7

Date Collected: 06/10/16 11:45

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 11:52	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 11:52	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 11:52	1
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 11:52	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 11:52	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 11:52	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 11:52	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 11:52	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 11:52	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 11:52	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 11:52	1
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 11:52	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 11:52	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 11:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 11:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 11:52	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 11:52	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 11:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			06/17/16 11:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			06/17/16 11:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 11:52	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 11:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 11:52	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 11:52	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 11:52	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 11:52	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 11:52	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 11:52	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 11:52	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 11:52	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 11:52	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 11:52	1
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 11:52	1
Hexachlorobutadiene	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 11:52	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 11:52	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 11:52	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 11:52	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 11:52	1

Client Sample ID: 32M-01-13XBR_SPR16

Lab Sample ID: 680-126310-7

Date Collected: 06/10/16 11:45
Matrix: Water
Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 11:52	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 11:52	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 11:52	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 11:52	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 11:52	1
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 11:52	1
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 11:52	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 11:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 11:52	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 11:52	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 11:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 11:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 11:52	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 11:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 11:52	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 11:52	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 11:52	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 11:52	1
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 11:52	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 11:52	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 11:52	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 11:52	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 11:52	1
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 11:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*06/17/16 11:52*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 119*		*06/17/16 11:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*06/17/16 11:52*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*06/17/16 11:52*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	3.0	U	10	1.0	ug/L		06/14/16 13:18	06/16/16 20:12	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	3.0	U	3.0	1.5	ug/L		06/14/16 13:18	06/16/16 09:09	1

Client Sample ID: 32M-01-14XOB_SPR16

Lab Sample ID: 680-126310-8

Date Collected: 06/10/16 10:50
Matrix: Water
Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 12:59	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 12:59	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 12:59	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-14XOB_SPR16
Date Collected: 06/10/16 10:50
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 12:59	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 12:59	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 12:59	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 12:59	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 12:59	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 12:59	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 12:59	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 12:59	1
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 12:59	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 12:59	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 12:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 12:59	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 12:59	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 12:59	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 12:59	1
1,2-Dichlorobenzene	**0.75**	**J**	1.0	0.37	ug/L			06/17/16 12:59	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			06/17/16 12:59	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 12:59	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 12:59	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 12:59	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 12:59	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 12:59	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 12:59	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 12:59	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 12:59	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 12:59	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 12:59	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 12:59	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 12:59	1
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 12:59	1
Hexachlorobutadiene	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 12:59	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 12:59	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 12:59	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 12:59	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 12:59	1
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 12:59	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 12:59	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 12:59	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 12:59	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 12:59	1
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 12:59	1
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 12:59	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 12:59	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 12:59	1

Client Sample ID: 32M-01-14XOB_SPR16

Lab Sample ID: 680-126310-8

Date Collected: 06/10/16 10:50

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 12:59	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 12:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 12:59	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 12:59	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 12:59	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 12:59	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 12:59	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 12:59	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 12:59	1
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 12:59	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 12:59	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 12:59	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 12:59	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 12:59	1
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*85 - 114*		*06/17/16 12:59*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 119*		*06/17/16 12:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*81 - 118*		*06/17/16 12:59*	*1*
Toluene-d8 (Surr)	*97*		*89 - 112*		*06/17/16 12:59*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	**1800**		10	1.0	ug/L		06/14/16 13:18	06/16/16 20:17	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	**13**		3.0	1.5	ug/L		06/14/16 13:18	06/16/16 09:15	1

Client Sample ID: 32M-01-17XBR_SPR16

Lab Sample ID: 680-126310-9

Date Collected: 06/10/16 10:50

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 11:29	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 11:29	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 11:29	1
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 11:29	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 11:29	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 11:29	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 11:29	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 11:29	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 11:29	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 11:29	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 11:29	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 11:29	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 11:29	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-17XBR_SPR16
Date Collected: 06/10/16 10:50
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 11:29	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 11:29	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 11:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 11:29	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 11:29	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 11:29	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 11:29	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			06/17/16 11:29	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			06/17/16 11:29	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 11:29	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 11:29	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 11:29	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 11:29	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 11:29	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 11:29	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 11:29	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 11:29	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 11:29	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 11:29	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 11:29	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 11:29	1
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 11:29	1
Hexachlorobutadiene	5.0	U Q	5.0	2.5	ug/L			06/17/16 11:29	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 11:29	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 11:29	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 11:29	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 11:29	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 11:29	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 11:29	1
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 11:29	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 11:29	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 11:29	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 11:29	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 11:29	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 11:29	1
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 11:29	1
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 11:29	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 11:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 11:29	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 11:29	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 11:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 11:29	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 11:29	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 11:29	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 11:29	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 11:29	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 11:29	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 11:29	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 11:29	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-17XBR_SPR16

Lab Sample ID: 680-126310-9
Date Collected: 06/10/16 10:50
Matrix: Water
Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 11:29	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 11:29	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 11:29	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 11:29	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 11:29	1
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 11:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*85 - 114*		*06/17/16 11:29*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 119*		*06/17/16 11:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*		*06/17/16 11:29*	*1*
Toluene-d8 (Surr)	*97*		*89 - 112*		*06/17/16 11:29*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	3.0	U	10	1.0	ug/L		06/14/16 13:18	06/16/16 20:23	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	3.0	U	3.0	1.5	ug/L		06/14/16 13:18	06/16/16 09:20	1

Client Sample ID: 32M-01-18XBR_SPR16

Lab Sample ID: 680-126310-10
Date Collected: 06/10/16 12:40
Matrix: Water
Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	50	U	50	35	ug/L			06/17/16 12:37	5
Benzene	5.0	U	5.0	2.2	ug/L			06/17/16 12:37	5
Bromobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 12:37	5
Bromoform	5.0	U	5.0	2.2	ug/L			06/17/16 12:37	5
Bromomethane	25	U	25	13	ug/L			06/17/16 12:37	5
2-Butanone (MEK)	50	U	50	17	ug/L			06/17/16 12:37	5
Carbon disulfide	10	U	10	2.2	ug/L			06/17/16 12:37	5
Carbon tetrachloride	5.0	U	5.0	1.7	ug/L			06/17/16 12:37	5
Chlorobenzene	**81**	**D**	5.0	1.3	ug/L			06/17/16 12:37	5
Chlorobromomethane	5.0	U	5.0	2.3	ug/L			06/17/16 12:37	5
Chlorodibromomethane	5.0	U	5.0	1.6	ug/L			06/17/16 12:37	5
Chloroethane	25	U	25	13	ug/L			06/17/16 12:37	5
Chloroform	5.0	U	5.0	2.5	ug/L			06/17/16 12:37	5
Chloromethane	5.0	U	5.0	2.0	ug/L			06/17/16 12:37	5
2-Chlorotoluene	2.5	U	5.0	1.4	ug/L			06/17/16 12:37	5
4-Chlorotoluene	5.0	U	5.0	2.3	ug/L			06/17/16 12:37	5
cis-1,2-Dichloroethene	5.0	U	5.0	2.1	ug/L			06/17/16 12:37	5
cis-1,3-Dichloropropene	5.0	U	5.0	2.0	ug/L			06/17/16 12:37	5
1,2-Dibromo-3-Chloropropane	10	U	25	5.5	ug/L			06/17/16 12:37	5
Dibromomethane	5.0	U	5.0	1.8	ug/L			06/17/16 12:37	5
1,2-Dichlorobenzene	**340**	**D**	5.0	1.9	ug/L			06/17/16 12:37	5
1,3-Dichlorobenzene	**58**	**D**	5.0	2.2	ug/L			06/17/16 12:37	5
1,4-Dichlorobenzene	**38**	**D**	5.0	2.3	ug/L			06/17/16 12:37	5

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-18XBR_SPR16
Date Collected: 06/10/16 12:40
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	5.0	U	5.0	2.2	ug/L			06/17/16 12:37	5
Dichlorodifluoromethane	5.0	U	5.0	3.0	ug/L			06/17/16 12:37	5
1,1-Dichloroethane	5.0	U	5.0	1.9	ug/L			06/17/16 12:37	5
1,2-Dichloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 12:37	5
1,1-Dichloroethene	5.0	U	5.0	1.8	ug/L			06/17/16 12:37	5
1,2-Dichloroethene, Total	5.0	U	10	3.7	ug/L			06/17/16 12:37	5
1,2-Dichloropropane	5.0	U	5.0	3.4	ug/L			06/17/16 12:37	5
1,3-Dichloropropane	5.0	U	5.0	1.7	ug/L			06/17/16 12:37	5
2,2-Dichloropropane	5.0	U	5.0	1.9	ug/L			06/17/16 12:37	5
1,1-Dichloropropene	5.0	U	5.0	1.7	ug/L			06/17/16 12:37	5
Ethylbenzene	5.0	U	5.0	1.7	ug/L			06/17/16 12:37	5
Ethylene Dibromide	5.0	U	5.0	2.2	ug/L			06/17/16 12:37	5
Hexachlorobutadiene	25	U	25	13	ug/L			06/17/16 12:37	5
2-Hexanone	25	U	50	10	ug/L			06/17/16 12:37	5
Isopropylbenzene	2.5	U	5.0	1.8	ug/L			06/17/16 12:37	5
4-Isopropyltoluene	5.0	U	5.0	2.4	ug/L			06/17/16 12:37	5
Methylene Chloride	25	U	25	13	ug/L			06/17/16 12:37	5
4-Methyl-2-pentanone (MIBK)	25	U	50	11	ug/L			06/17/16 12:37	5
Methyl tert-butyl ether	2.5	U	50	1.5	ug/L			06/17/16 12:37	5
m-Xylene & p-Xylene	5.0	U	5.0	1.8	ug/L			06/17/16 12:37	5
Naphthalene	25	U	25	13	ug/L			06/17/16 12:37	5
n-Butylbenzene	5.0	U	5.0	2.4	ug/L			06/17/16 12:37	5
N-Propylbenzene	5.0	U	5.0	1.9	ug/L			06/17/16 12:37	5
o-Xylene	2.5	U	5.0	1.2	ug/L			06/17/16 12:37	5
sec-Butylbenzene	5.0	U	5.0	2.1	ug/L			06/17/16 12:37	5
Styrene	2.5	U	5.0	1.4	ug/L			06/17/16 12:37	5
tert-Butylbenzene	5.0	U	5.0	2.3	ug/L			06/17/16 12:37	5
1,1,1,2-Tetrachloroethane	5.0	U	5.0	1.9	ug/L			06/17/16 12:37	5
1,1,2,2-Tetrachloroethane	5.0	U	5.0	3.1	ug/L			06/17/16 12:37	5
Tetrachloroethene	5.0	U	5.0	3.7	ug/L			06/17/16 12:37	5
Toluene	5.0	U	5.0	2.4	ug/L			06/17/16 12:37	5
trans-1,2-Dichloroethene	5.0	U	5.0	1.9	ug/L			06/17/16 12:37	5
trans-1,3-Dichloropropene	5.0	U	5.0	2.1	ug/L			06/17/16 12:37	5
1,2,3-Trichlorobenzene	25	U	25	13	ug/L			06/17/16 12:37	5
1,2,4-Trichlorobenzene	25	U	25	13	ug/L			06/17/16 12:37	5
1,1,1-Trichloroethane	5.0	U	5.0	1.9	ug/L			06/17/16 12:37	5
1,1,2-Trichloroethane	5.0	U	5.0	1.7	ug/L			06/17/16 12:37	5
Trichloroethene	5.0	U	5.0	2.4	ug/L			06/17/16 12:37	5
Trichlorofluoromethane	5.0	U	5.0	2.1	ug/L			06/17/16 12:37	5
1,2,3-Trichloropropane	5.0	U	5.0	2.0	ug/L			06/17/16 12:37	5
1,2,4-Trimethylbenzene	5.0	U	5.0	2.4	ug/L			06/17/16 12:37	5
1,3,5-Trimethylbenzene	5.0	U	5.0	1.6	ug/L			06/17/16 12:37	5
Vinyl acetate	5.0	U	10	4.1	ug/L			06/17/16 12:37	5
Vinyl chloride	5.0	U	5.0	2.5	ug/L			06/17/16 12:37	5
Xylenes, Total	2.5	U	10	1.2	ug/L			06/17/16 12:37	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*06/17/16 12:37*	*5*
Dibromofluoromethane (Surr)	*94*		*80 - 119*		*06/17/16 12:37*	*5*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*06/17/16 12:37*	*5*

Client Sample ID: 32M-01-18XBR_SPR16

Lab Sample ID: 680-126310-10

Date Collected: 06/10/16 12:40

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*89 - 112*		*06/17/16 12:37*	*5*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	**1100**		10	1.0	ug/L		06/14/16 13:18	06/16/16 20:38	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	**2.8**	**J**	3.0	1.5	ug/L		06/14/16 13:18	06/16/16 09:45	1

Client Sample ID: 32M-DUP-1

Lab Sample ID: 680-126310-11

Date Collected: 06/10/16 00:00

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 13:22	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 13:22	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 13:22	1
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 13:22	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 13:22	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 13:22	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 13:22	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 13:22	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 13:22	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 13:22	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 13:22	1
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 13:22	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 13:22	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 13:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 13:22	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 13:22	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 13:22	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 13:22	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			06/17/16 13:22	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			06/17/16 13:22	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 13:22	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 13:22	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 13:22	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 13:22	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 13:22	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 13:22	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 13:22	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 13:22	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 13:22	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 13:22	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 13:22	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 13:22	1

Client Sample ID: 32M-DUP-1
Date Collected: 06/10/16 00:00
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 13:22	1
Hexachlorobutadiene	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 13:22	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 13:22	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 13:22	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 13:22	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 13:22	1
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 13:22	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 13:22	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 13:22	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 13:22	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 13:22	1
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 13:22	1
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 13:22	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 13:22	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 13:22	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 13:22	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 13:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 13:22	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 13:22	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 13:22	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 13:22	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 13:22	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 13:22	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 13:22	1
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 13:22	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 13:22	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 13:22	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 13:22	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 13:22	1
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*85 - 114*		*06/17/16 13:22*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 119*		*06/17/16 13:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*06/17/16 13:22*	*1*
Toluene-d8 (Surr)	*98*		*89 - 112*		*06/17/16 13:22*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	3.0	U	10	1.0	ug/L		06/14/16 13:18	06/16/16 20:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	3.0	U	3.0	1.5	ug/L		06/14/16 13:18	06/16/16 09:50	1

Client Sample ID: Trip Blank
Date Collected: 06/10/16 00:00
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-12
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 10:00	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 10:00	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 10:00	1
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 10:00	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 10:00	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 10:00	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 10:00	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 10:00	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 10:00	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 10:00	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 10:00	1
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 10:00	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 10:00	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 10:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 10:00	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 10:00	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 10:00	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 10:00	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			06/17/16 10:00	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			06/17/16 10:00	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 10:00	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 10:00	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 10:00	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 10:00	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 10:00	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 10:00	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 10:00	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 10:00	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 10:00	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 10:00	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 10:00	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 10:00	1
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 10:00	1
Hexachlorobutadiene	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 10:00	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 10:00	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 10:00	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 10:00	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 10:00	1
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 10:00	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 10:00	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 10:00	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 10:00	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 10:00	1
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 10:00	1

Client Sample ID: Trip Blank

Lab Sample ID: 680-126310-12

Date Collected: 06/10/16 00:00

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 10:00	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 10:00	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 10:00	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 10:00	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 10:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 10:00	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 10:00	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 10:00	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 10:00	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 10:00	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 10:00	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 10:00	1
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 10:00	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 10:00	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 10:00	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 10:00	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 10:00	1
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 10:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*06/17/16 10:00*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 119*		*06/17/16 10:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*06/17/16 10:00*	*1*
Toluene-d8 (Surr)	*98*		*89 - 112*		*06/17/16 10:00*	*1*

Client Sample ID: 32M-01-17XBR_H

Lab Sample ID: 680-126310-13

Date Collected: 06/10/16 13:45

Matrix: Water

Date Received: 06/11/16 10:06

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 14:52	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 14:52	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 14:52	1
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 14:52	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 14:52	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 14:52	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 14:52	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 14:52	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 14:52	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 14:52	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 14:52	1
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 14:52	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 14:52	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 14:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 14:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 14:52	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-17XBR_H
Date Collected: 06/10/16 13:45
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 14:52	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 14:52	1
1,2-Dichlorobenzene	**1.1**		1.0	0.37	ug/L			06/17/16 14:52	1
1,3-Dichlorobenzene	**0.48**	**J**	1.0	0.43	ug/L			06/17/16 14:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 14:52	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 14:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 14:52	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 14:52	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 14:52	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 14:52	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 14:52	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 14:52	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 14:52	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 14:52	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 14:52	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 14:52	1
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 14:52	1
Hexachlorobutadiene	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 14:52	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 14:52	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 14:52	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 14:52	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 14:52	1
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 14:52	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 14:52	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 14:52	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 14:52	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 14:52	1
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 14:52	1
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 14:52	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 14:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 14:52	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 14:52	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 14:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 14:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 14:52	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 14:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 14:52	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 14:52	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 14:52	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 14:52	1
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 14:52	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 14:52	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 14:52	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 14:52	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 14:52	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-17XBR_H
Date Collected: 06/10/16 13:45
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 14:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*		*06/17/16 14:52*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 119*		*06/17/16 14:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*		*06/17/16 14:52*	*1*
Toluene-d8 (Surr)	*98*		*89 - 112*		*06/17/16 14:52*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	**46**		10	1.0	ug/L		06/21/16 10:47	06/21/16 23:07	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	3.0	U	3.0	1.5	ug/L		06/21/16 10:33	06/21/16 18:19	1

Surrogate Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(85-114)	(80-119)	(81-118)	(89-112)
680-126310-7	32M-01-13XBR_SPR16	98	94	98	100
680-126310-8	32M-01-14XOB_SPR16	108	94	111	97
680-126310-9	32M-01-17XBR_SPR16	108	95	99	97
680-126310-9 MS	32M-01-17XBR_SPR16	94	94	96	98
680-126310-9 MSD	32M-01-17XBR_SPR16	104	94	105	98
680-126310-10	32M-01-18XBR_SPR16	105	94	98	100
680-126310-11	32M-DUP-1	97	95	98	98
680-126310-12	Trip Blank	98	95	97	98
680-126310-13	32M-01-17XBR_H	106	94	99	98
LCS 680-437749/4	Lab Control Sample	99	96	98	102
LCSD 680-437749/5	Lab Control Sample Dup	98	95	108	99
MB 680-437749/9	Method Blank	98	93	95	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-437749/9
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			06/17/16 09:37	1
Benzene	1.0	U	1.0	0.43	ug/L			06/17/16 09:37	1
Bromobenzene	1.0	U	1.0	0.50	ug/L			06/17/16 09:37	1
Bromoform	1.0	U	1.0	0.43	ug/L			06/17/16 09:37	1
Bromomethane	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			06/17/16 09:37	1
Carbon disulfide	2.0	U	2.0	0.43	ug/L			06/17/16 09:37	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			06/17/16 09:37	1
Chlorobenzene	0.50	U	1.0	0.26	ug/L			06/17/16 09:37	1
Chlorobromomethane	1.0	U	1.0	0.45	ug/L			06/17/16 09:37	1
Chlorodibromomethane	1.0	U	1.0	0.32	ug/L			06/17/16 09:37	1
Chloroethane	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
Chloroform	1.0	U	1.0	0.50	ug/L			06/17/16 09:37	1
Chloromethane	1.0	U	1.0	0.40	ug/L			06/17/16 09:37	1
2-Chlorotoluene	0.50	U	1.0	0.27	ug/L			06/17/16 09:37	1
4-Chlorotoluene	1.0	U	1.0	0.45	ug/L			06/17/16 09:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			06/17/16 09:37	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			06/17/16 09:37	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	1.1	ug/L			06/17/16 09:37	1
Dibromomethane	1.0	U	1.0	0.35	ug/L			06/17/16 09:37	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			06/17/16 09:37	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			06/17/16 09:37	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			06/17/16 09:37	1
Dichlorobromomethane	1.0	U	1.0	0.44	ug/L			06/17/16 09:37	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			06/17/16 09:37	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			06/17/16 09:37	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			06/17/16 09:37	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			06/17/16 09:37	1
1,2-Dichloroethene, Total	1.0	U	2.0	0.74	ug/L			06/17/16 09:37	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			06/17/16 09:37	1
1,3-Dichloropropane	1.0	U	1.0	0.34	ug/L			06/17/16 09:37	1
2,2-Dichloropropane	1.0	U	1.0	0.37	ug/L			06/17/16 09:37	1
1,1-Dichloropropene	1.0	U	1.0	0.34	ug/L			06/17/16 09:37	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			06/17/16 09:37	1
Ethylene Dibromide	1.0	U	1.0	0.44	ug/L			06/17/16 09:37	1
Hexachlorobutadiene	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
2-Hexanone	5.0	U	10	2.0	ug/L			06/17/16 09:37	1
Isopropylbenzene	0.50	U	1.0	0.35	ug/L			06/17/16 09:37	1
4-Isopropyltoluene	1.0	U	1.0	0.48	ug/L			06/17/16 09:37	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	2.1	ug/L			06/17/16 09:37	1
Methyl tert-butyl ether	0.50	U	10	0.30	ug/L			06/17/16 09:37	1
m-Xylene & p-Xylene	1.0	U	1.0	0.35	ug/L			06/17/16 09:37	1
Naphthalene	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
n-Butylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 09:37	1
N-Propylbenzene	1.0	U	1.0	0.38	ug/L			06/17/16 09:37	1
o-Xylene	0.50	U	1.0	0.23	ug/L			06/17/16 09:37	1
sec-Butylbenzene	1.0	U	1.0	0.42	ug/L			06/17/16 09:37	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-437749/9
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.50	U	1.0	0.27	ug/L			06/17/16 09:37	1
tert-Butylbenzene	1.0	U	1.0	0.45	ug/L			06/17/16 09:37	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 09:37	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			06/17/16 09:37	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			06/17/16 09:37	1
Toluene	1.0	U	1.0	0.48	ug/L			06/17/16 09:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			06/17/16 09:37	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			06/17/16 09:37	1
1,2,3-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			06/17/16 09:37	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			06/17/16 09:37	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			06/17/16 09:37	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			06/17/16 09:37	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			06/17/16 09:37	1
1,2,3-Trichloropropane	1.0	U	1.0	0.39	ug/L			06/17/16 09:37	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.47	ug/L			06/17/16 09:37	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.31	ug/L			06/17/16 09:37	1
Vinyl acetate	1.0	U	2.0	0.81	ug/L			06/17/16 09:37	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			06/17/16 09:37	1
Xylenes, Total	0.50	U	2.0	0.23	ug/L			06/17/16 09:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*06/17/16 09:37*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 119*		*06/17/16 09:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*06/17/16 09:37*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*06/17/16 09:37*	*1*

Lab Sample ID: LCS 680-437749/4
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	250	185		ug/L		74	39 - 160
Benzene	50.0	46.0		ug/L		92	79 - 120
Bromobenzene	50.0	47.7		ug/L		95	80 - 120
Bromoform	50.0	39.8		ug/L		80	66 - 130
Bromomethane	50.0	54.1		ug/L		108	53 - 141
2-Butanone (MEK)	250	208		ug/L		83	56 - 143
Carbon disulfide	50.0	44.1		ug/L		88	64 - 133
Carbon tetrachloride	50.0	44.6		ug/L		89	72 - 136
Chlorobenzene	50.0	48.7		ug/L		97	82 - 118
Chlorobromomethane	50.0	46.6		ug/L		93	78 - 123
Chlorodibromomethane	50.0	44.3		ug/L		89	74 - 126
Chloroethane	50.0	58.5		ug/L		117	60 - 138
Chloroform	50.0	43.9		ug/L		88	79 - 124
Chloromethane	50.0	61.1		ug/L		122	50 - 139
2-Chlorotoluene	50.0	48.8		ug/L		98	79 - 122
4-Chlorotoluene	50.0	49.5		ug/L		99	78 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-437749/4
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	50.0	47.4		ug/L		95	78 - 123
cis-1,3-Dichloropropene	50.0	47.3		ug/L		95	75 - 124
1,2-Dibromo-3-Chloropropane	50.0	41.2		ug/L		82	62 - 128
Dibromomethane	50.0	46.2		ug/L		92	79 - 123
1,2-Dichlorobenzene	50.0	50.1		ug/L		100	80 - 119
1,3-Dichlorobenzene	50.0	50.1		ug/L		100	80 - 119
1,4-Dichlorobenzene	50.0	49.4		ug/L		99	79 - 118
Dichlorobromomethane	50.0	46.3		ug/L		93	79 - 125
Dichlorodifluoromethane	50.0	51.2		ug/L		102	32 - 152
1,1-Dichloroethane	50.0	47.9		ug/L		96	77 - 125
1,2-Dichloroethane	50.0	47.0		ug/L		94	73 - 128
1,1-Dichloroethene	50.0	45.1		ug/L		90	71 - 131
1,2-Dichloroethene, Total	100	92.1		ug/L		92	79 - 121
1,2-Dichloropropane	50.0	46.3		ug/L		93	78 - 122
1,3-Dichloropropane	50.0	49.6		ug/L		99	80 - 119
2,2-Dichloropropane	50.0	45.7		ug/L		91	60 - 139
1,1-Dichloropropene	50.0	46.8		ug/L		94	79 - 125
Ethylbenzene	50.0	49.4		ug/L		99	79 - 121
Ethylene Dibromide	50.0	43.5		ug/L		87	75 - 127
Hexachlorobutadiene	50.0	44.8		ug/L		90	66 - 134
2-Hexanone	250	248		ug/L		99	57 - 139
Isopropylbenzene	50.0	48.7		ug/L		97	72 - 131
4-Isopropyltoluene	50.0	51.2		ug/L		102	77 - 127
Methylene Chloride	50.0	45.4		ug/L		91	74 - 124
4-Methyl-2-pentanone (MIBK)	250	269		ug/L		107	67 - 130
Methyl tert-butyl ether	50.0	43.7		ug/L		87	71 - 124
m-Xylene & p-Xylene	50.0	48.3		ug/L		97	80 - 121
Naphthalene	50.0	46.8		ug/L		94	61 - 128
n-Butylbenzene	50.0	51.3		ug/L		103	75 - 128
N-Propylbenzene	50.0	49.9		ug/L		100	76 - 126
o-Xylene	50.0	49.8		ug/L		100	78 - 122
sec-Butylbenzene	50.0	49.3		ug/L		99	77 - 126
Styrene	50.0	50.1		ug/L		100	78 - 123
tert-Butylbenzene	50.0	48.6		ug/L		97	78 - 124
1,1,1,2-Tetrachloroethane	50.0	47.4		ug/L		95	78 - 124
1,1,2,2-Tetrachloroethane	50.0	46.0		ug/L		92	71 - 121
Tetrachloroethene	50.0	43.2		ug/L		86	74 - 129
Toluene	50.0	47.0		ug/L		94	80 - 121
trans-1,2-Dichloroethene	50.0	44.7		ug/L		89	75 - 124
trans-1,3-Dichloropropene	50.0	49.3		ug/L		99	73 - 127
1,2,3-Trichlorobenzene	50.0	48.0		ug/L		96	69 - 129
1,2,4-Trichlorobenzene	50.0	47.1		ug/L		94	69 - 130
1,1,1-Trichloroethane	50.0	46.5		ug/L		93	74 - 131
1,1,2-Trichloroethane	50.0	48.8		ug/L		98	80 - 119
Trichloroethene	50.0	44.1		ug/L		88	79 - 123
Trichlorofluoromethane	50.0	52.7		ug/L		105	65 - 141
1,2,3-Trichloropropane	50.0	44.6		ug/L		89	73 - 122
1,2,4-Trimethylbenzene	50.0	48.9		ug/L		98	76 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-437749/4
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	49.1		ug/L		98	75 - 124
Vinyl acetate	100	89.8		ug/L		90	54 - 146
Vinyl chloride	50.0	57.2		ug/L		114	58 - 137
Xylenes, Total	100	98.1		ug/L		98	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*
Dibromofluoromethane (Surr)	*96*		*80 - 119*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*
Toluene-d8 (Surr)	*102*		*89 - 112*

Lab Sample ID: LCSD 680-437749/5
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	250	206		ug/L		82	39 - 160	10	20
Benzene	50.0	47.1		ug/L		94	79 - 120	2	20
Bromobenzene	50.0	47.0		ug/L		94	80 - 120	1	20
Bromoform	50.0	39.2		ug/L		78	66 - 130	1	20
Bromomethane	50.0	48.5		ug/L		97	53 - 141	11	20
2-Butanone (MEK)	250	221		ug/L		89	56 - 143	6	20
Carbon disulfide	50.0	45.4		ug/L		91	64 - 133	3	20
Carbon tetrachloride	50.0	45.1		ug/L		90	72 - 136	1	20
Chlorobenzene	50.0	49.0		ug/L		98	82 - 118	1	20
Chlorobromomethane	50.0	42.6		ug/L		85	78 - 123	9	20
Chlorodibromomethane	50.0	42.6		ug/L		85	74 - 126	4	20
Chloroethane	50.0	56.0		ug/L		112	60 - 138	4	20
Chloroform	50.0	45.4		ug/L		91	79 - 124	3	20
Chloromethane	50.0	56.5		ug/L		113	50 - 139	8	20
2-Chlorotoluene	50.0	48.1		ug/L		96	79 - 122	2	20
4-Chlorotoluene	50.0	48.7		ug/L		97	78 - 122	2	20
cis-1,2-Dichloroethene	50.0	51.0		ug/L		102	78 - 123	7	20
cis-1,3-Dichloropropene	50.0	46.1		ug/L		92	75 - 124	3	20
1,2-Dibromo-3-Chloropropane	50.0	42.0		ug/L		84	62 - 128	2	20
Dibromomethane	50.0	47.0		ug/L		94	79 - 123	2	20
1,2-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 119	1	20
1,3-Dichlorobenzene	50.0	50.1		ug/L		100	80 - 119	0	20
1,4-Dichlorobenzene	50.0	48.8		ug/L		98	79 - 118	1	20
Dichlorobromomethane	50.0	47.7		ug/L		95	79 - 125	3	20
Dichlorodifluoromethane	50.0	46.8		ug/L		94	32 - 152	9	20
1,1-Dichloroethane	50.0	52.1		ug/L		104	77 - 125	8	20
1,2-Dichloroethane	50.0	51.1		ug/L		102	73 - 128	8	20
1,1-Dichloroethene	50.0	45.2		ug/L		90	71 - 131	0	20
1,2-Dichloroethene, Total	100	95.5		ug/L		95	79 - 121	4	20
1,2-Dichloropropane	50.0	49.6		ug/L		99	78 - 122	7	20
1,3-Dichloropropane	50.0	45.0		ug/L		90	80 - 119	10	20
2,2-Dichloropropane	50.0	48.1		ug/L		96	60 - 139	5	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-437749/5
Matrix: Water
Analysis Batch: 437749

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloropropene	50.0	48.7		ug/L		97	79 - 125	4	20
Ethylbenzene	50.0	49.4		ug/L		99	79 - 121	0	20
Ethylene Dibromide	50.0	41.9		ug/L		84	75 - 127	4	20
Hexachlorobutadiene	50.0	46.1		ug/L		92	66 - 134	3	20
2-Hexanone	250	207		ug/L		83	57 - 139	18	20
Isopropylbenzene	50.0	48.3		ug/L		97	72 - 131	1	20
4-Isopropyltoluene	50.0	51.3		ug/L		103	77 - 127	0	20
Methylene Chloride	50.0	43.6		ug/L		87	74 - 124	4	20
4-Methyl-2-pentanone (MIBK)	250	249		ug/L		100	67 - 130	8	20
Methyl tert-butyl ether	50.0	46.7		ug/L		93	71 - 124	7	20
m-Xylene & p-Xylene	50.0	47.9		ug/L		96	80 - 121	1	20
Naphthalene	50.0	47.0		ug/L		94	61 - 128	0	20
n-Butylbenzene	50.0	52.2		ug/L		104	75 - 128	2	20
N-Propylbenzene	50.0	49.1		ug/L		98	76 - 126	2	20
o-Xylene	50.0	49.4		ug/L		99	78 - 122	1	20
sec-Butylbenzene	50.0	49.0		ug/L		98	77 - 126	1	20
Styrene	50.0	49.4		ug/L		99	78 - 123	2	20
tert-Butylbenzene	50.0	48.2		ug/L		96	78 - 124	1	20
1,1,1,2-Tetrachloroethane	50.0	47.4		ug/L		95	78 - 124	0	20
1,1,2,2-Tetrachloroethane	50.0	45.7		ug/L		91	71 - 121	1	20
Tetrachloroethene	50.0	44.1		ug/L		88	74 - 129	2	20
Toluene	50.0	43.7		ug/L		87	80 - 121	7	20
trans-1,2-Dichloroethene	50.0	44.4		ug/L		89	75 - 124	1	20
trans-1,3-Dichloropropene	50.0	43.7		ug/L		87	73 - 127	12	20
1,2,3-Trichlorobenzene	50.0	48.5		ug/L		97	69 - 129	1	20
1,2,4-Trichlorobenzene	50.0	47.5		ug/L		95	69 - 130	1	20
1,1,1-Trichloroethane	50.0	47.6		ug/L		95	74 - 131	2	20
1,1,2-Trichloroethane	50.0	44.2		ug/L		88	80 - 119	10	20
Trichloroethene	50.0	41.1		ug/L		82	79 - 123	7	20
Trichlorofluoromethane	50.0	52.7		ug/L		105	65 - 141	0	20
1,2,3-Trichloropropane	50.0	44.4		ug/L		89	73 - 122	0	20
1,2,4-Trimethylbenzene	50.0	48.6		ug/L		97	76 - 124	0	20
1,3,5-Trimethylbenzene	50.0	48.5		ug/L		97	75 - 124	1	20
Vinyl acetate	100	106		ug/L		106	54 - 146	17	20
Vinyl chloride	50.0	54.4		ug/L		109	58 - 137	5	20
Xylenes, Total	100	97.3		ug/L		97	79 - 121	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*
Dibromofluoromethane (Surr)	*95*		*80 - 119*
1,2-Dichloroethane-d4 (Surr)	*108*		*81 - 118*
Toluene-d8 (Surr)	*99*		*89 - 112*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-126310-9 MS
Matrix: Water
Analysis Batch: 437749

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	250	176		ug/L		70	39 - 160
Benzene	1.0	U	50.0	45.6		ug/L		91	79 - 120
Bromobenzene	1.0	U	50.0	44.1		ug/L		88	80 - 120
Bromoform	1.0	U	50.0	35.3		ug/L		71	66 - 130
Bromomethane	5.0	U	50.0	49.5		ug/L		99	53 - 141
2-Butanone (MEK)	10	U	250	200		ug/L		80	56 - 143
Carbon disulfide	2.0	U	50.0	46.5		ug/L		93	64 - 133
Carbon tetrachloride	1.0	U	50.0	45.5		ug/L		91	72 - 136
Chlorobenzene	0.50	U	50.0	45.5		ug/L		91	82 - 118
Chlorobromomethane	1.0	U	50.0	44.1		ug/L		88	78 - 123
Chlorodibromomethane	1.0	U	50.0	40.8		ug/L		82	74 - 126
Chloroethane	5.0	U	50.0	62.6		ug/L		125	60 - 138
Chloroform	1.0	U	50.0	43.7		ug/L		87	79 - 124
Chloromethane	1.0	U	50.0	63.2		ug/L		126	50 - 139
2-Chlorotoluene	0.50	U	50.0	46.5		ug/L		93	79 - 122
4-Chlorotoluene	1.0	U	50.0	47.4		ug/L		95	78 - 122
cis-1,2-Dichloroethene	1.0	U	50.0	47.6		ug/L		95	78 - 123
cis-1,3-Dichloropropene	1.0	U	50.0	43.7		ug/L		87	75 - 124
1,2-Dibromo-3-Chloropropane	2.0	U	50.0	37.8		ug/L		76	62 - 128
Dibromomethane	1.0	U	50.0	44.0		ug/L		88	79 - 123
1,2-Dichlorobenzene	1.0	U	50.0	47.8		ug/L		96	80 - 119
1,3-Dichlorobenzene	1.0	U	50.0	48.6		ug/L		97	80 - 119
1,4-Dichlorobenzene	1.0	U	50.0	47.6		ug/L		95	79 - 118
Dichlorobromomethane	1.0	U	50.0	43.6		ug/L		87	79 - 125
Dichlorodifluoromethane	1.0	U	50.0	57.0		ug/L		114	32 - 152
1,1-Dichloroethane	1.0	U	50.0	48.0		ug/L		96	77 - 125
1,2-Dichloroethane	1.0	U	50.0	46.6		ug/L		93	73 - 128
1,1-Dichloroethene	1.0	U	50.0	48.2		ug/L		96	71 - 131
1,2-Dichloroethene, Total	1.0	U	100	92.7		ug/L		93	79 - 121
1,2-Dichloropropane	1.0	U	50.0	45.9		ug/L		92	78 - 122
1,3-Dichloropropane	1.0	U	50.0	47.0		ug/L		94	80 - 119
2,2-Dichloropropane	1.0	U	50.0	46.7		ug/L		93	60 - 139
1,1-Dichloropropene	1.0	U	50.0	48.8		ug/L		98	79 - 125
Ethylbenzene	1.0	U	50.0	48.9		ug/L		98	79 - 121
Ethylene Dibromide	1.0	U	50.0	41.0		ug/L		82	75 - 127
Hexachlorobutadiene	5.0	U Q	50.0	42.0		ug/L		84	66 - 134
2-Hexanone	5.0	U	250	247		ug/L		99	57 - 139
Isopropylbenzene	0.50	U	50.0	47.4		ug/L		95	72 - 131
4-Isopropyltoluene	1.0	U	50.0	50.3		ug/L		101	77 - 127
Methylene Chloride	5.0	U	50.0	45.0		ug/L		90	74 - 124
4-Methyl-2-pentanone (MIBK)	5.0	U	250	255		ug/L		102	67 - 130
Methyl tert-butyl ether	0.50	U	50.0	42.0		ug/L		84	71 - 124
m-Xylene & p-Xylene	1.0	U	50.0	47.9		ug/L		96	80 - 121
Naphthalene	5.0	U	50.0	42.8		ug/L		86	61 - 128
n-Butylbenzene	1.0	U	50.0	51.4		ug/L		103	75 - 128
N-Propylbenzene	1.0	U	50.0	48.9		ug/L		98	76 - 126
o-Xylene	0.50	U	50.0	47.1		ug/L		94	78 - 122
sec-Butylbenzene	1.0	U	50.0	48.2		ug/L		96	77 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-126310-9 MS
Matrix: Water
Analysis Batch: 437749

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	0.50	U	50.0	46.8		ug/L		94	78 - 123
tert-Butylbenzene	1.0	U	50.0	46.7		ug/L		93	78 - 124
1,1,1,2-Tetrachloroethane	1.0	U	50.0	43.2		ug/L		86	78 - 124
1,1,2,2-Tetrachloroethane	1.0	U	50.0	42.5		ug/L		85	71 - 121
Tetrachloroethene	1.0	U	50.0	42.1		ug/L		84	74 - 129
Toluene	1.0	U	50.0	45.8		ug/L		92	80 - 121
trans-1,2-Dichloroethene	1.0	U	50.0	45.1		ug/L		90	75 - 124
trans-1,3-Dichloropropene	1.0	U	50.0	45.3		ug/L		91	73 - 127
1,2,3-Trichlorobenzene	5.0	U	50.0	43.5		ug/L		87	69 - 129
1,2,4-Trichlorobenzene	5.0	U	50.0	42.4		ug/L		85	69 - 130
1,1,1-Trichloroethane	1.0	U	50.0	46.5		ug/L		93	74 - 131
1,1,2-Trichloroethane	1.0	U	50.0	45.1		ug/L		90	80 - 119
Trichloroethene	1.0	U	50.0	44.1		ug/L		88	79 - 123
Trichlorofluoromethane	1.0	U	50.0	56.9		ug/L		114	65 - 141
1,2,3-Trichloropropane	1.0	U	50.0	40.7		ug/L		81	73 - 122
1,2,4-Trimethylbenzene	1.0	U	50.0	46.4		ug/L		93	76 - 124
1,3,5-Trimethylbenzene	1.0	U	50.0	46.9		ug/L		94	75 - 124
Vinyl acetate	1.0	U	100	87.1		ug/L		87	54 - 146
Vinyl chloride	1.0	U	50.0	60.6		ug/L		121	58 - 137
Xylenes, Total	0.50	U	100	95.0		ug/L		95	79 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*
Dibromofluoromethane (Surr)	*94*		*80 - 119*
1,2-Dichloroethane-d4 (Surr)	*96*		*81 - 118*
Toluene-d8 (Surr)	*98*		*89 - 112*

Lab Sample ID: 680-126310-9 MSD
Matrix: Water
Analysis Batch: 437749

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	250	173		ug/L		69	39 - 160	1	20
Benzene	1.0	U	50.0	48.2		ug/L		96	79 - 120	6	20
Bromobenzene	1.0	U	50.0	42.1		ug/L		84	80 - 120	5	20
Bromoform	1.0	U	50.0	33.4		ug/L		67	66 - 130	6	20
Bromomethane	5.0	U	50.0	51.9		ug/L		104	53 - 141	5	20
2-Butanone (MEK)	10	U	250	199		ug/L		80	56 - 143	1	20
Carbon disulfide	2.0	U	50.0	46.5		ug/L		93	64 - 133	0	20
Carbon tetrachloride	1.0	U	50.0	47.5		ug/L		95	72 - 136	4	20
Chlorobenzene	0.50	U	50.0	46.3		ug/L		93	82 - 118	2	20
Chlorobromomethane	1.0	U	50.0	43.6		ug/L		87	78 - 123	1	20
Chlorodibromomethane	1.0	U	50.0	40.8		ug/L		82	74 - 126	0	20
Chloroethane	5.0	U	50.0	61.9		ug/L		124	60 - 138	1	20
Chloroform	1.0	U	50.0	42.7		ug/L		85	79 - 124	2	20
Chloromethane	1.0	U	50.0	62.8		ug/L		126	50 - 139	1	20
2-Chlorotoluene	0.50	U	50.0	48.4		ug/L		97	79 - 122	4	20
4-Chlorotoluene	1.0	U	50.0	48.9		ug/L		98	78 - 122	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-126310-9 MSD
Matrix: Water
Analysis Batch: 437749

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	1.0	U	50.0	46.5		ug/L		93	78 - 123	2	20
cis-1,3-Dichloropropene	1.0	U	50.0	44.5		ug/L		89	75 - 124	2	20
1,2-Dibromo-3-Chloropropane	2.0	U	50.0	40.7		ug/L		81	62 - 128	7	20
Dibromomethane	1.0	U	50.0	45.6		ug/L		91	79 - 123	4	20
1,2-Dichlorobenzene	1.0	U	50.0	49.9		ug/L		100	80 - 119	4	20
1,3-Dichlorobenzene	1.0	U	50.0	49.7		ug/L		99	80 - 119	2	20
1,4-Dichlorobenzene	1.0	U	50.0	49.6		ug/L		99	79 - 118	4	20
Dichlorobromomethane	1.0	U	50.0	46.6		ug/L		93	79 - 125	7	20
Dichlorodifluoromethane	1.0	U	50.0	55.9		ug/L		112	32 - 152	2	20
1,1-Dichloroethane	1.0	U	50.0	46.6		ug/L		93	77 - 125	3	20
1,2-Dichloroethane	1.0	U	50.0	51.9		ug/L		104	73 - 128	11	20
1,1-Dichloroethene	1.0	U	50.0	47.5		ug/L		95	71 - 131	1	20
1,2-Dichloroethene, Total	1.0	U	100	91.0		ug/L		91	79 - 121	2	20
1,2-Dichloropropane	1.0	U	50.0	49.6		ug/L		99	78 - 122	8	20
1,3-Dichloropropane	1.0	U	50.0	46.7		ug/L		93	80 - 119	1	20
2,2-Dichloropropane	1.0	U	50.0	45.6		ug/L		91	60 - 139	2	20
1,1-Dichloropropene	1.0	U	50.0	52.4		ug/L		105	79 - 125	7	20
Ethylbenzene	1.0	U	50.0	50.0		ug/L		100	79 - 121	2	20
Ethylene Dibromide	1.0	U	50.0	40.8		ug/L		82	75 - 127	1	20
Hexachlorobutadiene	5.0	U Q	50.0	45.7		ug/L		91	66 - 134	9	20
2-Hexanone	5.0	U	250	247		ug/L		99	57 - 139	0	20
Isopropylbenzene	0.50	U	50.0	47.2		ug/L		94	72 - 131	0	20
4-Isopropyltoluene	1.0	U	50.0	54.9		ug/L		110	77 - 127	9	20
Methylene Chloride	5.0	U	50.0	44.4		ug/L		89	74 - 124	1	20
4-Methyl-2-pentanone (MIBK)	5.0	U	250	254		ug/L		102	67 - 130	1	20
Methyl tert-butyl ether	0.50	U	50.0	41.7		ug/L		83	71 - 124	1	20
m-Xylene & p-Xylene	1.0	U	50.0	47.5		ug/L		95	80 - 121	1	20
Naphthalene	5.0	U	50.0	46.9		ug/L		94	61 - 128	9	20
n-Butylbenzene	1.0	U	50.0	58.5		ug/L		117	75 - 128	13	20
N-Propylbenzene	1.0	U	50.0	50.3		ug/L		101	76 - 126	3	20
o-Xylene	0.50	U	50.0	49.3		ug/L		99	78 - 122	5	20
sec-Butylbenzene	1.0	U	50.0	49.4		ug/L		99	77 - 126	3	20
Styrene	0.50	U	50.0	47.8		ug/L		96	78 - 123	2	20
tert-Butylbenzene	1.0	U	50.0	47.4		ug/L		95	78 - 124	1	20
1,1,1,2-Tetrachloroethane	1.0	U	50.0	43.9		ug/L		88	78 - 124	2	20
1,1,2,2-Tetrachloroethane	1.0	U	50.0	45.0		ug/L		90	71 - 121	6	20
Tetrachloroethene	1.0	U	50.0	41.8		ug/L		84	74 - 129	1	20
Toluene	1.0	U	50.0	45.6		ug/L		91	80 - 121	1	20
trans-1,2-Dichloroethene	1.0	U	50.0	44.5		ug/L		89	75 - 124	1	20
trans-1,3-Dichloropropene	1.0	U	50.0	45.5		ug/L		91	73 - 127	1	20
1,2,3-Trichlorobenzene	5.0	U	50.0	47.4		ug/L		95	69 - 129	9	20
1,2,4-Trichlorobenzene	5.0	U	50.0	46.5		ug/L		93	69 - 130	9	20
1,1,1-Trichloroethane	1.0	U	50.0	48.1		ug/L		96	74 - 131	3	20
1,1,2-Trichloroethane	1.0	U	50.0	45.1		ug/L		90	80 - 119	0	20
Trichloroethene	1.0	U	50.0	42.0		ug/L		84	79 - 123	5	20
Trichlorofluoromethane	1.0	U	50.0	56.9		ug/L		114	65 - 141	0	20
1,2,3-Trichloropropane	1.0	U	50.0	44.6		ug/L		89	73 - 122	9	20
1,2,4-Trimethylbenzene	1.0	U	50.0	47.8		ug/L		96	76 - 124	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-126310-9 MSD
Matrix: Water
Analysis Batch: 437749

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	1.0	U	50.0	48.1		ug/L		96	75 - 124	3	20
Vinyl acetate	1.0	U	100	87.4		ug/L		87	54 - 146	0	20
Vinyl chloride	1.0	U	50.0	59.8		ug/L		120	58 - 137	1	20
Xylenes, Total	0.50	U	100	96.8		ug/L		97	79 - 121	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*
Dibromofluoromethane (Surr)	*94*		*80 - 119*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*
Toluene-d8 (Surr)	*98*		*89 - 112*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-437410/1-A
Matrix: Water
Analysis Batch: 437826

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437410

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50	17	ug/L		06/15/16 08:40	06/16/16 21:04	1
Manganese	3.0	U	10	1.0	ug/L		06/15/16 08:40	06/16/16 21:04	1

Lab Sample ID: LCS 680-437410/2-A
Matrix: Water
Analysis Batch: 437826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4900		ug/L		98	87 - 115
Manganese	500	516		ug/L		103	90 - 114

Lab Sample ID: 680-126310-1 MS
Matrix: Water
Analysis Batch: 437826

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	4700		5000	9680		ug/L		99	87 - 115
Manganese	130		500	641		ug/L		103	90 - 114

Lab Sample ID: 680-126310-1 MSD
Matrix: Water
Analysis Batch: 437826

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Total/NA
Prep Batch: 437410

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	4700		5000	9640		ug/L		99	87 - 115	0	20
Manganese	130		500	646		ug/L		104	90 - 114	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 680-437383/1-A
Matrix: Water
Analysis Batch: 437826

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 437383

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Iron	50	U	50	17	ug/L		06/14/16 13:16	06/16/16 19:10	1
Dissolved Manganese	3.0	U	10	1.0	ug/L		06/14/16 13:16	06/16/16 19:10	1

Lab Sample ID: LCS 680-437383/2-A
Matrix: Water
Analysis Batch: 437826

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 437383

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Iron	5000	4960		ug/L		99	87 - 115
Dissolved Manganese	500	521		ug/L		104	90 - 114

Lab Sample ID: 680-126310-1 MS
Matrix: Water
Analysis Batch: 437826

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Dissolved
Prep Batch: 437383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Iron	4500	J	5000	9040		ug/L		91	87 - 115
Dissolved Manganese	140		500	634		ug/L		99	90 - 114

Lab Sample ID: 680-126310-1 MSD
Matrix: Water
Analysis Batch: 437826

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Dissolved
Prep Batch: 437383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Iron	4500	J	5000	8770	J	ug/L		86	87 - 115	3	20
Dissolved Manganese	140		500	618		ug/L		96	90 - 114	2	20

Lab Sample ID: 680-126310-9 MS
Matrix: Water
Analysis Batch: 437826

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Dissolved
Prep Batch: 437383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Manganese	3.0	U	500	505		ug/L		101	90 - 114

Lab Sample ID: 680-126310-9 MSD
Matrix: Water
Analysis Batch: 437826

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Dissolved
Prep Batch: 437383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Manganese	3.0	U	500	513		ug/L		103	90 - 114	2	20

Lab Sample ID: MB 680-438208/1-B
Matrix: Water
Analysis Batch: 438359

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 438209

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Manganese	3.0	U	10	1.0	ug/L		06/21/16 10:47	06/21/16 22:57	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-438208/2-B
Matrix: Water
Analysis Batch: 438359

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 438209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Manganese	500	504		ug/L		101	90 - 114

Lab Sample ID: 680-126310-13 MS
Matrix: Water
Analysis Batch: 438359

Client Sample ID: 32M-01-17XBR_H
Prep Type: Dissolved
Prep Batch: 438209

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Manganese	46		500	507		ug/L		92	90 - 114

Lab Sample ID: 680-126310-13 MSD
Matrix: Water
Analysis Batch: 438359

Client Sample ID: 32M-01-17XBR_H
Prep Type: Dissolved
Prep Batch: 438209

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Manganese	46		500	539		ug/L		99	90 - 114	6	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-437390/1-A
Matrix: Water
Analysis Batch: 437616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437390

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	1.5	ug/L		06/15/16 08:40	06/16/16 04:07	1

Lab Sample ID: LCS 680-437390/2-A
Matrix: Water
Analysis Batch: 437616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437390

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	103		ug/L		103	84 - 116

Lab Sample ID: 680-126310-1 MS
Matrix: Water
Analysis Batch: 437616

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Total/NA
Prep Batch: 437390

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	31		100	142		ug/L		112	84 - 116

Lab Sample ID: 680-126310-1 MSD
Matrix: Water
Analysis Batch: 437616

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Total/NA
Prep Batch: 437390

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	31		100	145		ug/L		115	84 - 116	2	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 680-437288/1-A
Matrix: Water
Analysis Batch: 437616

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 437288

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	3.0	U	3.0	1.5	ug/L		06/14/16 13:16	06/16/16 07:38	1

Lab Sample ID: LCS 680-437288/2-A
Matrix: Water
Analysis Batch: 437616

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 437288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Arsenic	100	104		ug/L		104	84 - 116

Lab Sample ID: 680-126310-1 MS
Matrix: Water
Analysis Batch: 437616

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Dissolved
Prep Batch: 437288

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Arsenic	25		100	137		ug/L		112	84 - 116

Lab Sample ID: 680-126310-1 MSD
Matrix: Water
Analysis Batch: 437616

Client Sample ID: 57M-95-03X_SPR16
Prep Type: Dissolved
Prep Batch: 437288

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Arsenic	25		100	130		ug/L		106	84 - 116	5	20

Lab Sample ID: 680-126310-9 MS
Matrix: Water
Analysis Batch: 437616

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Dissolved
Prep Batch: 437288

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Arsenic	3.0	U	100	102		ug/L		102	84 - 116

Lab Sample ID: 680-126310-9 MSD
Matrix: Water
Analysis Batch: 437616

Client Sample ID: 32M-01-17XBR_SPR16
Prep Type: Dissolved
Prep Batch: 437288

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Arsenic	3.0	U	100	108		ug/L		108	84 - 116	5	20

Lab Sample ID: MB 680-438201/1-B
Matrix: Water
Analysis Batch: 438383

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 438203

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Arsenic	3.0	U	3.0	1.5	ug/L		06/21/16 10:33	06/21/16 18:09	1

Lab Sample ID: LCS 680-438201/2-B
Matrix: Water
Analysis Batch: 438383

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 438203

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Arsenic	100	104		ug/L		104	84 - 116

Lab Sample ID: 680-126310-13 MS
Matrix: Water
Analysis Batch: 438383

Client Sample ID: 32M-01-17XBR_H
Prep Type: Dissolved
Prep Batch: 438203

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Dissolved Arsenic	3.0	U	100	97.2		ug/L		97	84 - 116		

Lab Sample ID: 680-126310-13 MSD
Matrix: Water
Analysis Batch: 438383

Client Sample ID: 32M-01-17XBR_H
Prep Type: Dissolved
Prep Batch: 438203

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Arsenic	3.0	U	100	105		ug/L		105	84 - 116	8	20

GC/MS VOA

Analysis Batch: 437749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-7	32M-01-13XBR_SPR16	Total/NA	Water	8260B	
680-126310-8	32M-01-14XOB_SPR16	Total/NA	Water	8260B	
680-126310-9	32M-01-17XBR_SPR16	Total/NA	Water	8260B	
680-126310-9 MS	32M-01-17XBR_SPR16	Total/NA	Water	8260B	
680-126310-9 MSD	32M-01-17XBR_SPR16	Total/NA	Water	8260B	
680-126310-10	32M-01-18XBR_SPR16	Total/NA	Water	8260B	
680-126310-11	32M-DUP-1	Total/NA	Water	8260B	
680-126310-12	Trip Blank	Total/NA	Water	8260B	
680-126310-13	32M-01-17XBR_H	Total/NA	Water	8260B	
LCS 680-437749/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-437749/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-437749/9	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 437288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-1	57M-95-03X_SPR16	Dissolved	Water	3005A	
680-126310-1 MS	57M-95-03X_SPR16	Dissolved	Water	3005A	
680-126310-1 MSD	57M-95-03X_SPR16	Dissolved	Water	3005A	
680-126310-2	57M-96-11X_SPR16	Dissolved	Water	3005A	
680-126310-3	57M-AREA3_SW1_SPR16	Dissolved	Water	3005A	
680-126310-6	DUP-1	Dissolved	Water	3005A	
680-126310-7	32M-01-13XBR_SPR16	Dissolved	Water	3005A	
680-126310-8	32M-01-14XOB_SPR16	Dissolved	Water	3005A	
680-126310-9	32M-01-17XBR_SPR16	Dissolved	Water	3005A	
680-126310-9 MS	32M-01-17XBR_SPR16	Dissolved	Water	3005A	
680-126310-9 MSD	32M-01-17XBR_SPR16	Dissolved	Water	3005A	
680-126310-10	32M-01-18XBR_SPR16	Dissolved	Water	3005A	
680-126310-11	32M-DUP-1	Dissolved	Water	3005A	
LCS 680-437288/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-437288/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 437383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-1	57M-95-03X_SPR16	Dissolved	Water	3005A	
680-126310-1 MS	57M-95-03X_SPR16	Dissolved	Water	3005A	
680-126310-1 MSD	57M-95-03X_SPR16	Dissolved	Water	3005A	
680-126310-2	57M-96-11X_SPR16	Dissolved	Water	3005A	
680-126310-3	57M-AREA3_SW1_SPR16	Dissolved	Water	3005A	
680-126310-6	DUP-1	Dissolved	Water	3005A	
680-126310-7	32M-01-13XBR_SPR16	Dissolved	Water	3005A	
680-126310-8	32M-01-14XOB_SPR16	Dissolved	Water	3005A	
680-126310-9	32M-01-17XBR_SPR16	Dissolved	Water	3005A	
680-126310-9 MS	32M-01-17XBR_SPR16	Dissolved	Water	3005A	
680-126310-9 MSD	32M-01-17XBR_SPR16	Dissolved	Water	3005A	
680-126310-10	32M-01-18XBR_SPR16	Dissolved	Water	3005A	
680-126310-11	32M-DUP-1	Dissolved	Water	3005A	
LCS 680-437383/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-437383/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 437390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-1	57M-95-03X_SPR16	Total/NA	Water	3010A	
680-126310-1 MS	57M-95-03X_SPR16	Total/NA	Water	3010A	
680-126310-1 MSD	57M-95-03X_SPR16	Total/NA	Water	3010A	
680-126310-2	57M-96-11X_SPR16	Total/NA	Water	3010A	
680-126310-3	57M-AREA3_SW1_SPR16	Total/NA	Water	3010A	
680-126310-4	57M-95-03X_H	Total/NA	Water	3010A	
680-126310-5	57M-96-11X_H	Total/NA	Water	3010A	
680-126310-6	DUP-1	Total/NA	Water	3010A	
LCS 680-437390/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-437390/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 437410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-1	57M-95-03X_SPR16	Total/NA	Water	3010A	
680-126310-1 MS	57M-95-03X_SPR16	Total/NA	Water	3010A	
680-126310-1 MSD	57M-95-03X_SPR16	Total/NA	Water	3010A	
680-126310-2	57M-96-11X_SPR16	Total/NA	Water	3010A	
680-126310-3	57M-AREA3_SW1_SPR16	Total/NA	Water	3010A	
680-126310-4	57M-95-03X_H	Total/NA	Water	3010A	
680-126310-5	57M-96-11X_H	Total/NA	Water	3010A	
680-126310-6	DUP-1	Total/NA	Water	3010A	
LCS 680-437410/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-437410/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 437616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-1	57M-95-03X_SPR16	Dissolved	Water	6020A	437288
680-126310-1	57M-95-03X_SPR16	Total/NA	Water	6020A	437390
680-126310-1 MS	57M-95-03X_SPR16	Dissolved	Water	6020A	437288
680-126310-1 MS	57M-95-03X_SPR16	Total/NA	Water	6020A	437390
680-126310-1 MSD	57M-95-03X_SPR16	Dissolved	Water	6020A	437288
680-126310-1 MSD	57M-95-03X_SPR16	Total/NA	Water	6020A	437390
680-126310-2	57M-96-11X_SPR16	Dissolved	Water	6020A	437288
680-126310-2	57M-96-11X_SPR16	Total/NA	Water	6020A	437390
680-126310-3	57M-AREA3_SW1_SPR16	Dissolved	Water	6020A	437288
680-126310-3	57M-AREA3_SW1_SPR16	Total/NA	Water	6020A	437390
680-126310-4	57M-95-03X_H	Total/NA	Water	6020A	437390
680-126310-5	57M-96-11X_H	Total/NA	Water	6020A	437390
680-126310-6	DUP-1	Dissolved	Water	6020A	437288
680-126310-6	DUP-1	Total/NA	Water	6020A	437390
680-126310-7	32M-01-13XBR_SPR16	Dissolved	Water	6020A	437288
680-126310-8	32M-01-14XOB_SPR16	Dissolved	Water	6020A	437288
680-126310-9	32M-01-17XBR_SPR16	Dissolved	Water	6020A	437288
680-126310-9 MS	32M-01-17XBR_SPR16	Dissolved	Water	6020A	437288
680-126310-9 MSD	32M-01-17XBR_SPR16	Dissolved	Water	6020A	437288
680-126310-10	32M-01-18XBR_SPR16	Dissolved	Water	6020A	437288
680-126310-11	32M-DUP-1	Dissolved	Water	6020A	437288
LCS 680-437288/2-A	Lab Control Sample	Total Recoverable	Water	6020A	437288
LCS 680-437390/2-A	Lab Control Sample	Total/NA	Water	6020A	437390
MB 680-437288/1-A	Method Blank	Total Recoverable	Water	6020A	437288
MB 680-437390/1-A	Method Blank	Total/NA	Water	6020A	437390

QC Association Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Analysis Batch: 437826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-1	57M-95-03X_SPR16	Dissolved	Water	6010C	437383
680-126310-1	57M-95-03X_SPR16	Total/NA	Water	6010C	437410
680-126310-1 MS	57M-95-03X_SPR16	Dissolved	Water	6010C	437383
680-126310-1 MS	57M-95-03X_SPR16	Total/NA	Water	6010C	437410
680-126310-1 MSD	57M-95-03X_SPR16	Dissolved	Water	6010C	437383
680-126310-1 MSD	57M-95-03X_SPR16	Total/NA	Water	6010C	437410
680-126310-2	57M-96-11X_SPR16	Dissolved	Water	6010C	437383
680-126310-2	57M-96-11X_SPR16	Total/NA	Water	6010C	437410
680-126310-3	57M-AREA3_SW1_SPR16	Dissolved	Water	6010C	437383
680-126310-3	57M-AREA3_SW1_SPR16	Total/NA	Water	6010C	437410
680-126310-4	57M-95-03X_H	Total/NA	Water	6010C	437410
680-126310-5	57M-96-11X_H	Total/NA	Water	6010C	437410
680-126310-6	DUP-1	Dissolved	Water	6010C	437383
680-126310-6	DUP-1	Total/NA	Water	6010C	437410
680-126310-7	32M-01-13XBR_SPR16	Dissolved	Water	6010C	437383
680-126310-8	32M-01-14XOB_SPR16	Dissolved	Water	6010C	437383
680-126310-9	32M-01-17XBR_SPR16	Dissolved	Water	6010C	437383
680-126310-9 MS	32M-01-17XBR_SPR16	Dissolved	Water	6010C	437383
680-126310-9 MSD	32M-01-17XBR_SPR16	Dissolved	Water	6010C	437383
680-126310-10	32M-01-18XBR_SPR16	Dissolved	Water	6010C	437383
680-126310-11	32M-DUP-1	Dissolved	Water	6010C	437383
LCS 680-437383/2-A	Lab Control Sample	Total Recoverable	Water	6010C	437383
LCS 680-437410/2-A	Lab Control Sample	Total/NA	Water	6010C	437410
MB 680-437383/1-A	Method Blank	Total Recoverable	Water	6010C	437383
MB 680-437410/1-A	Method Blank	Total/NA	Water	6010C	437410

Filtration Batch: 438201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13	32M-01-17XBR_H	Dissolved	Water	FILTRATION	
680-126310-13 MS	32M-01-17XBR_H	Dissolved	Water	FILTRATION	
680-126310-13 MSD	32M-01-17XBR_H	Dissolved	Water	FILTRATION	
LCS 680-438201/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
MB 680-438201/1-B	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 438203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13	32M-01-17XBR_H	Dissolved	Water	3005A	438201
680-126310-13 MS	32M-01-17XBR_H	Dissolved	Water	3005A	438201
680-126310-13 MSD	32M-01-17XBR_H	Dissolved	Water	3005A	438201
LCS 680-438201/2-B	Lab Control Sample	Dissolved	Water	3005A	438201
MB 680-438201/1-B	Method Blank	Dissolved	Water	3005A	438201

Filtration Batch: 438208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13	32M-01-17XBR_H	Dissolved	Water	FILTRATION	
680-126310-13 MS	32M-01-17XBR_H	Dissolved	Water	FILTRATION	
680-126310-13 MSD	32M-01-17XBR_H	Dissolved	Water	FILTRATION	
LCS 680-438208/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
MB 680-438208/1-B	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 438209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13	32M-01-17XBR_H	Dissolved	Water	3005A	438208

Metals (Continued)

Prep Batch: 438209 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13 MS	32M-01-17XBR_H	Dissolved	Water	3005A	438208
680-126310-13 MSD	32M-01-17XBR_H	Dissolved	Water	3005A	438208
LCS 680-438208/2-B	Lab Control Sample	Dissolved	Water	3005A	438208
MB 680-438208/1-B	Method Blank	Dissolved	Water	3005A	438208

Analysis Batch: 438359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13	32M-01-17XBR_H	Dissolved	Water	6010C	438209
680-126310-13 MS	32M-01-17XBR_H	Dissolved	Water	6010C	438209
680-126310-13 MSD	32M-01-17XBR_H	Dissolved	Water	6010C	438209
LCS 680-438208/2-B	Lab Control Sample	Dissolved	Water	6010C	438209
MB 680-438208/1-B	Method Blank	Dissolved	Water	6010C	438209

Analysis Batch: 438383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-126310-13	32M-01-17XBR_H	Dissolved	Water	6020A	438203
680-126310-13 MS	32M-01-17XBR_H	Dissolved	Water	6020A	438203
680-126310-13 MSD	32M-01-17XBR_H	Dissolved	Water	6020A	438203
LCS 680-438201/2-B	Lab Control Sample	Dissolved	Water	6020A	438203
MB 680-438201/1-B	Method Blank	Dissolved	Water	6020A	438203

Client Sample ID: 57M-95-03X_SPR16

Lab Sample ID: 680-126310-1

Date Collected: 06/07/16 12:55

Matrix: Water

Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 19:20	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:17	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 08:09	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 06:07	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 57M-96-11X_SPR16

Lab Sample ID: 680-126310-2

Date Collected: 06/09/16 14:15

Matrix: Water

Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 19:46	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:32	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 08:54	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 06:22	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 57M-AREA3_SW1_SPR16

Lab Sample ID: 680-126310-3

Date Collected: 06/09/16 15:10

Matrix: Water

Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:02	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:38	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV

Client Sample ID: 57M-AREA3_SW1_SPR16

Lab Sample ID: 680-126310-3

Date Collected: 06/09/16 15:10
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 08:59	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 06:27	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 57M-95-03X_H

Lab Sample ID: 680-126310-4

Date Collected: 06/09/16 11:40
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:43	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 06:32	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 57M-96-11X_H

Lab Sample ID: 680-126310-5

Date Collected: 06/09/16 11:55
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:48	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 06:37	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: DUP-1

Lab Sample ID: 680-126310-6

Date Collected: 06/09/16 00:00
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:07	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	437410	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 22:53	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 09:04	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: DUP-1

Lab Sample ID: 680-126310-6

Date Collected: 06/09/16 00:00
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	250 mL	437390	06/15/16 08:41	AJR	TAL SAV
Total/NA	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 06:43	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 32M-01-13XBR_SPR16

Lab Sample ID: 680-126310-7

Date Collected: 06/10/16 11:45
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	437749	06/17/16 11:52	DJK	TAL SAV
	Instrument ID: CMSP2									
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:12	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 09:09	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 32M-01-14XOB_SPR16

Lab Sample ID: 680-126310-8

Date Collected: 06/10/16 10:50
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	437749	06/17/16 12:59	DJK	TAL SAV
	Instrument ID: CMSP2									
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:17	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 09:15	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 32M-01-17XBR_SPR16

Lab Sample ID: 680-126310-9

Date Collected: 06/10/16 10:50
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	437749	06/17/16 11:29	DJK	TAL SAV
	Instrument ID: CMSP2									
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:23	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-17XBR_SPR16

Lab Sample ID: 680-126310-9
Date Collected: 06/10/16 10:50
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 09:20	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 32M-01-18XBR_SPR16

Lab Sample ID: 680-126310-10
Date Collected: 06/10/16 12:40
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	5 mL	5 mL	437749	06/17/16 12:37	DJK	TAL SAV
	Instrument ID: CMSP2									
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:38	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 09:45	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 32M-DUP-1

Lab Sample ID: 680-126310-11
Date Collected: 06/10/16 00:00
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	437749	06/17/16 13:22	DJK	TAL SAV
	Instrument ID: CMSP2									
Dissolved	Prep	3005A			50 mL	50 mL	437383	06/14/16 13:18	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	437826	06/16/16 20:43	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	437288	06/14/16 13:18	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	437616	06/16/16 09:50	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: Trip Blank

Lab Sample ID: 680-126310-12
Date Collected: 06/10/16 00:00
Matrix: Water
Date Received: 06/11/16 10:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	437749	06/17/16 10:00	DJK	TAL SAV
	Instrument ID: CMSP2									

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Client Sample ID: 32M-01-17XBR_H
Date Collected: 06/10/16 13:45
Date Received: 06/11/16 10:06

Lab Sample ID: 680-126310-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	437749	06/17/16 14:52	DJK	TAL SAV
	Instrument ID: CMSP2									
Dissolved	Prep	3005A			50 mL	50 mL	438209	06/21/16 10:47	AJR	TAL SAV
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	438208	06/21/16 10:47	AJR	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	438359	06/21/16 23:07	BWR	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	438203	06/21/16 10:33	AJR	TAL SAV
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	438201	06/21/16 10:33	AJR	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	438383	06/21/16 18:19	BJB	TAL SAV
	Instrument ID: ICPMSC									

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MassDEP Analytical Protocol Certification Form

Laboratory Name: Katahdin Analytical Services, LLC. Project #:

Project Location: RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
SJ4284-1,2,3,4,5

Matrices: X Groundwater/Surface Water Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A ✓	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	(Yes) No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	(Yes) No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	(Yes) No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	(Yes) No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	(Yes) No (Yes) No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	(Yes) No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	(Yes) No[1]

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	(Yes) No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	(Yes) No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Leslie Dimond **Position:** Q.A. Officer

Printed Name: Leslie Dimond **Date:** 06.27.16

Katahdin ANALYTICAL SERVICES

nelac Cert. No. E87604

June 27, 2016

Mr. Jerry Lanier
Test America Savannah
5102 LaRoche Avenue
Savannah,GA 31404

RE: Katahdin Lab Number: SJ4284
Project ID: Ft. Devens Consolidated Landfill
Project Manager: Ms. Jennifer Obrin
Sample Receipt Date(s): June 11, 2016

Dear Mr. Lanier:

Please find enclosed the following information:

* Report of Analysis (Analytical and/or Field)
* Quality Control Data Summary
* Chain of Custody (COC)
* Login Report

A copy of the Chain of Custody is included in the paginated report. The original COC is attached as an addendum to this report.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. The results contained in this report relate only to the submitted samples. This cover letter is an integral part of the ROA.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in an attached technical narrative or in the Report of Analysis.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Please go to http://www.katahdinlab.com/cert.html for copies of Katahdin Analytical Services Inc. current certificates and analyte lists.

Sincerely,
KATAHDIN ANALYTICAL SERVICES

Deborah J Nadeau
Authorized Signature

06/27/2016
Date

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TEST AMERICA SAVANNAH
FT. DEVENS CONSOLIDATED LANDFILL
SJ4284

Sample Receipt

The following samples were received on June 11, 2016 and were logged in under Katahdin Analytical Services work order number SJ4284 for a hardcopy due date of June 23, 2016.

KATAHDIN	TEST AMERICA SAVANNAH
Sample No.	Sample Identification
SJ4284-1	32M-01-13XBR_SPR16
SJ4284-2	32M-01-14XOB_SPR16
SJ4284-3	31M-01-17XBR_SPR16
SJ4284-4	31M-01-18XBR_SPR16
SJ4284-5	32M-DUP-1

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SJ4284 were analyzed in accordance with Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MADEP, May 2004, Revision 1.1, and/or for the specific methods listed below or on the Report of Analysis.

Sample SJ4284-3 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

MA-VPH Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
06.27.16

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services SJ4284 page 0000004 of 0000023

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4284-1
Client ID: 32M-01-13XBR_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: SJ4284
Lab File ID: 9JF10237.D

Sample Date: 10-JUN-16
Received Date: 11-JUN-16
Extract Date: 21-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777

Analysis Date: 21-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		89.2	%					
2,5-Dibromotoluene (PID)		95.0	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4284-2
Client ID: 32M-01-14XOB_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: SJ4284
Lab File ID: 9JF10238.D

Sample Date: 10-JUN-16
Received Date: 11-JUN-16
Extract Date: 21-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777

Analysis Date: 21-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		83.3	%					
2,5-Dibromotoluene (PID)		87.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4284-3
Client ID: 32M-01-17XBR_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: SJ4284
Lab File ID: 9JF10239.D

Sample Date: 10-JUN-16
Received Date: 11-JUN-16
Extract Date: 21-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777

Analysis Date: 21-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		83.5	%					
2,5-Dibromotoluene (PID)		89.0	%					

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http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4284-4
Client ID: 32M-01-18XBR_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: SJ4284
Lab File ID: 9JF10240.D

Sample Date: 10-JUN-16
Received Date: 11-JUN-16
Extract Date: 21-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777

Analysis Date: 21-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	E	700	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	E	240	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	E	460	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		90.3	%					
2,5-Dibromotoluene (PID)		94.8	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4284-4DL
Client ID: 32M-01-18XBR_SPR16
Project: Ft. Devens Consolidated Landfill
SDG: SJ4284
Lab File ID: 9JF10264.D

Sample Date: 10-JUN-16
Received Date: 11-JUN-16
Extract Date: 23-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185826

Analysis Date: 23-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	200	ug/L	2	100	200	100	150
Unadjusted C9-C12 Aliphatics		640	ug/L	2	100	200	100	150
C5-C8 Aliphatics	U	200	ug/L	2	100	200	100	150
C9-C12 Aliphatics	J	190	ug/L	2	100	200	100	150
C9-C10 Aromatics		450	ug/L	2	100	200	100	150
Benzene	U	6.0	ug/L	2	3	6.0	1.2	4.0
Ethylbenzene	U	10	ug/L	2	5	10.	0.88	7.6
Methyl tert-butylether	U	10	ug/L	2	5	10.	1.3	7.6
Naphthalene	U	10	ug/L	2	5	10.	3.0	7.6
Toluene	U	10	ug/L	2	5	10.	1.1	7.6
m+p-Xylenes	U	20	ug/L	2	10	20.	1.7	15.
o-Xylene	U	10	ug/L	2	5	10.	0.96	7.6
2,5-Dibromotoluene (FID)		71.1	%					
2,5-Dibromotoluene (PID)		75.6	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ4284-5
Client ID: 32M-DUP-1
Project: Ft. Devens Consolidated Landfill
SDG: SJ4284
Lab File ID: 9JF10241.D

Sample Date: 10-JUN-16
Received Date: 11-JUN-16
Extract Date: 22-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777

Analysis Date: 22-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	J	0.66	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		82.9	%					
2,5-Dibromotoluene (PID)		88.0	%					

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : 9JF10229.D
Instrument ID : GC09

SDG : SJ4284
Lab Sample ID : WG185777-1
Date Analyzed : 21-JUN-16
Time Analyzed : 13:00
Date Extracted : 21-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185777-2	9JF10230.D	06/21/16	14:01
Laboratory Control S	WG185777-3	9JF10231.D	06/21/16	14:49
32M-01-13XBR_SPR16	SJ4284-1	9JF10237.D	06/21/16	20:54
32M-01-14XOB_SPR16	SJ4284-2	9JF10238.D	06/21/16	21:43
32M-01-17XBR_SPR16	SJ4284-3	9JF10239.D	06/21/16	22:33
32M-01-18XBR_SPR16	SJ4284-4	9JF10240.D	06/21/16	23:23
32M-DUP-1	SJ4284-5	9JF10241.D	06/22/16	00:13
Matrix Spike	WG185777-4	9JF10242.D	06/22/16	01:03
Matrix Spike Duplica	WG185777-5	9JF10243.D	06/22/16	01:53

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Ft. Devens Consolidated Landfill
Lab File ID : 9JF10248.D
Instrument ID : GC09

SDG : SJ4284
Lab Sample ID : WG185826-1
Date Analyzed : 22-JUN-16
Time Analyzed : 11:07
Date Extracted : 22-JUN-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG185826-2	9JF10249.D	06/22/16	12:13
Laboratory Control S	WG185826-3	9JF10250.D	06/22/16	13:00
32M-01-18XBR_SPR16	SJ4284-4DL	9JF10264.D	06/23/16	01:31

Report of Analytical Results

Client:
Lab ID: WG185777-1
Client ID: Method Blank Sample
Project:
SDG: SJ4284
Lab File ID: 9JF10229.D

Sample Date:
Received Date:
Extract Date: 21-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777

Analysis Date: 21-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		85.2	%					
2,5-Dibromotoluene (PID)		90.7	%					

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Report of Analytical Results

Client:
Lab ID: WG185826-1
Client ID: Method Blank Sample
Project:
SDG: SJ4284
Lab File ID: 9JF10248.D

Sample Date:
Received Date:
Extract Date: 22-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185826

Analysis Date: 22-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
Unadjusted C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.	75.
Benzene	U	3.0	ug/L	1	3	3.0	0.61	2.0
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.44	3.8
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.63	3.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.5	3.8
Toluene	U	5.0	ug/L	1	5	5.0	0.54	3.8
m+p-Xylenes	U	10	ug/L	1	10	10.	0.86	7.5
o-Xylene	U	5.0	ug/L	1	5	5.0	0.48	3.8
2,5-Dibromotoluene (FID)		97.1	%					
2,5-Dibromotoluene (PID)		103.	%					

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LCS/LCSD Recovery Report

LCS ID: WG185777-2
LCSD ID: WG185777-3
Project:
SDG: SJ4284
Report Date: 23-JUN-16
LCS File ID: 9JF10230.D

Received Date:
Extract Date: 21-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777
LCSD File ID: 9JF10231.D

Analysis Date: 21-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C5-C8 Aliphatics	300.	353.	118.	352.	117.	ug/L	0	25	70-130
Unadjusted C9-C12 Aliphatics	200.	208.	104.	195.	97.5	ug/L	6	25	70-130
C5-C8 Aliphatics	300.	353.	118.	352.	117.	ug/L	0	25	70-130
C9-C12 Aliphatics	200.	208.	104.	195.	97.5	ug/L	6	25	70-130
C9-C10 Aromatics	100.	99.6	99.6	96.5	96.5	ug/L	3	25	70-130
Benzene	100.	86.8	86.8	84.9	84.9	ug/L	2	25	70-130
Ethylbenzene	100.	101.	101.	101.	101.	ug/L	0	25	70-130
Methyl tert-butylether	100.	78.8	78.8	79.4	79.4	ug/L	1	25	70-130
Naphthalene	100.	76.4	76.4	76.6	76.6	ug/L	0	25	70-130
Toluene	100.	102.	102.	101.	101.	ug/L	1	25	70-130
m+p-Xylenes	200.	201.	100.	201.	100.	ug/L	0	25	70-130
o-Xylene	100.	101.	101.	100.	100.	ug/L	1	25	70-130
2,5-Dibromotoluene (FID)			87.6		82.4				70-130
2,5-Dibromotoluene (PID)			93.6		87.4				70-130

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ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG185826-2
LCSD ID: WG185826-3
Project:
SDG: SJ4284
Report Date: 23-JUN-16
LCS File ID: 9JF10249.D

Received Date:
Extract Date: 22-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185826
LCSD File ID: 9JF10250.D

Analysis Date: 22-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C5-C8 Aliphatics	300.	382.	127.	373.	124.	ug/L	2	25	70-130
Unadjusted C9-C12 Aliphatics	200.	232.	116.	215.	108.	ug/L	8	25	70-130
C5-C8 Aliphatics	300.	382.	127.	373.	124.	ug/L	2	25	70-130
C9-C12 Aliphatics	200.	232.	116.	215.	108.	ug/L	8	25	70-130
C9-C10 Aromatics	100.	107.	107.	101.	101.	ug/L	6	25	70-130
Benzene	100.	90.9	90.9	88.8	88.8	ug/L	2	25	70-130
Ethylbenzene	100.	108.	108.	102.	102.	ug/L	6	25	70-130
Methyl tert-butylether	100.	84.9	84.9	83.0	83.0	ug/L	2	25	70-130
Naphthalene	100.	78.1	78.1	90.4	90.4	ug/L	14	25	70-130
Toluene	100.	108.	108.	103.	103.	ug/L	5	25	70-130
m+p-Xylenes	200.	216.	108.	204.	102.	ug/L	6	25	70-130
o-Xylene	100.	109.	109.	102.	102.	ug/L	7	25	70-130
2,5-Dibromotoluene (FID)			88.6		99.8				70-130
2,5-Dibromotoluene (PID)			94.8		106.				70-130

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MS/MSD Recovery Report

MS ID: WG185777-4
MSD ID: WG185777-5
Sample ID: SJ4284-3
Client ID: 32M-01-17XBR_SPR16
Project:
SDG: SJ4284
MS File ID: 9JF10242.D

Received Date:
Extract Date: 22-JUN-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG185777
Report Date: 23-JUN-16
MSD File ID: 9JF10243.D

Analysis Date: 22-JUN-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Unadjusted C5-C8 Aliphatics	300.	300.	ug/L	U100	310	359	103.	120.	15	50	70-130
Unadjusted C9-C12 Aliphatics	200.	200.	ug/L	U100	164	203	82.0	102.	21	50	70-130
C5-C8 Aliphatics	300.	300.	ug/L	U100	310	359	103.	120.	15	50	70-130
C9-C12 Aliphatics	200.	200.	ug/L	U100	164	203	82.0	102.	21	50	70-130
C9-C10 Aromatics	100.	100.	ug/L	U100	89.6	99	89.6	99.0	10	50	70-130
Benzene	100.	100.	ug/L	U3.0	99.6	112	99.6	112.	12	50	70-130
Ethylbenzene	100.	100.	ug/L	U5.0	91.2	101	91.2	101.	10	50	70-130
Methyl tert-butylether	100.	100.	ug/L	U5.0	80.5	88.7	80.5	88.7	10	50	70-130
Naphthalene	100.	100.	ug/L	U5.0	82	94.3	82.0	94.3	14	50	70-130
Toluene	100.	100.	ug/L	U5.0	92.8	103	92.8	103.	10	50	70-130
m+p-Xylenes	200.	200.	ug/L	U10	183	200	91.5	100.	9	50	70-130
o-Xylene	100.	100.	ug/L	U5.0	92.4	102	92.4	102.	10	50	70-130
2,5-Dibromotoluene (FID)							84.0	94.3			70-130
2,5-Dibromotoluene (PID)							88.4	99.6			70-130

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Katahdin Analytical Services, LLC. — Sample Receipt Condition Report

Client: KOMAN Governmental SOI	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: SO	Delivered By: KAS
KAS Work Order#: SJ4284	KIMS Review By:	Received By: KS
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 945 6/11/16

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 4.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?		✓			
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

CHAIN OF CUSTODY RECORD

KGS

360325-Boston

SJ4284

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

360325-Boston

PROJECT REFERENCE: Fort Devens, Devens Mass	PROJECT NO.: 1024-003	PROJECT LOCATION (STATE): [redacted]
TESTAMERICA (LAB) PROJECT MANAGER: Jerry Lanier	P.O. NUMBER:	CONTRACT NO.: W912WJ-10-D-0003
CLIENT (SITE) PM: Beth Anderson/Laurie Ekes	CLIENT PHONE: (508) 366-7442	CLIENT FAX: 508-366-7445
CLIENT NAME: KOMAN Government Solutions, LLC	CLIENT EMAIL: lekes@komangs.com	
CLIENT ADDRESS: 160 East Main Street,, Suite 2F, Westborough, MA 01581		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE: 1 of

STANDARD REPORT DELIVERY ○ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE / REQUIRED ANALYSES / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	Dissolved Metals (SW6020 for As, SW6010 for Mn) 1-250ml Poly FIPU Filter HNO3	VOCs (8260B) 3-40ml VOA vials HCl	VPH (MassDEP) 3-40ml VOA vials HCl	Dissolved Metals 6020 + 6010 None (Lab Filter)				REMARKS
6/10/16	1145	32M-01-13XBR_SPR16		X				1	3	3					
6/10/16	1050	32M-01-14XOB_SPR16		X				1	3	3					
6/10/16	1050	32M-01-17XBR_SPR16		X				1	3	3					MS/MSD
6/10/16	1240	32M-01-18XBR_SPR16		X				1	3	3					
6/10/16	0000	32M-DUP-1		X				1	3	3					Add trips, dups, ms/msd etc.
—	—	Trip Blank							3						
6/10/16	1345	32M-01-17XBR—H		X					2		1				

MAINE-VPH vials

The Rest To Savannah

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	6/10/16		[signature] 6-16	6-10-16	1800			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNA	DATE	TIME
[signature]	6-10-16	1410						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS:
[signature]	6/11/16	945	YES ○ NO ○ YES ○ NO ○			

CHAIN OF CUSTODY RECORD

KGS

360325-Boston
360325-Boston

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

PROJECT REFERENCE: Fort Devens, Devens Mass	PROJECT NO.: 1024-003	PROJECT LOCATION (STATE): [redacted]	PAGE: 1 of
TESTAMERICA (LAB) PROJECT MANAGER: Jerry Lanier	P.O. NUMBER:	CONTRACT NO.: W912WJ-15-C-0002	STANDARD REPORT DELIVERY ○ DATE DUE
CLIENT (SITE) PM: Beth Anderson	CLIENT PHONE: (508)366-7442	CLIENT FAX: 508-366-7445	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE:
CLIENT NAME: KOMAN Government Solutions, LLC	CLIENT EMAIL: lekes@komangs.com		
CLIENT ADDRESS: 160 East Main Street,, Suite 2F, Westborough, MA 01581			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
COMPANY CONTRACTING THIS WORK (if applicable):			

MATRIX TYPE / REQUIRED ANALYSES

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	Total Metals (As, Fe, Mn) 250 ml Poly HNO3	Dissolved Metals (As, Fe, Mn) 250 ml Poly (Field Filter) HNO3						REMARKS
6/9/16	1255	57M-95-03X_SPR16		x				1	1						MS/MSD ☆
6/9/16	1415	57M-96-11X_SPR16		x				1	1						
6/9/16	1510	57-AREA3-SW1_SPR16		x				1	1						
6/9/16	1140	57M-95-03X_H		X				1							Add trips, dups, ms/msd etc.
6/9/16	1155	57M-96-11X_H		X				1							
6/9/16	0000	DUP-1		X				1	1						

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	6/10/16		[signature]	6.10.16	1410			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNA	DATE	TIME
[signature]	6-10-16	1410						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS:
[signature]	6/11/16	945	YES NO YES ○			

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Jun. 13, 2016
03:24 PM

Login Number: SJ4284

Account: TASAV001 NoWeb
Test America Savannah

Project:

Quote/Incoming:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL, "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-126310
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	4.0
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	SO
PM	:	JO
PROJECT NAME	:	Ft. Devens Consolidated Landfill
QC LEVEL	:	II
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	
SDG STATUS	:	

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ4284-1	32M-01-13XBR_SPR16	10-JUN-16 11:45	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16	40mL Vial+HCl		

SJ4284-2	32M-01-14XOB_SPR16	10-JUN-16 10:50	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16	40mL Vial+HCl		

SJ4284-3	32M-01-17XBR_SPR16	10-JUN-16 10:50	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16	40mL Vial+HCl		**MS/MSD**

SJ4284-4	32M-01-18XBR_SPR16	10-JUN-16 12:40	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16	40mL Vial+HCl		

SJ4284-5	32M-DUP-1	10-JUN-16 00:00	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16	40mL Vial+HCl		

SJ4284-6	M-01-17XBR_SPR16MS	10-JUN-16 10:50	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16			**32M-01-17XBR_SPR16MS; MS charge only. Not a sample.**

SJ4284-7	M-01-17XBR_SPR16MSD	10-JUN-16 10:50	11-JUN-16			23-JUN-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	24-JUN-16			**32M-01-17XBR_SPR16MSD; MSD charge only. Not a sample.**

6/13/16

Login Number: SJ4284

Quote/Incoming:

Account: TASAV001 NoWeb

Test America Savannah

Project:

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed

Total Samples: *7* ***Total Analyses:*** *7*

06.13.16

CHAIN OF CUSTODY RECORD

KGS

360325-Boston

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	AOC 57
TESTAMERICA (LAB) PROJECT MANAGER	P O NUMBER	CONTRACT NO
Jerry Lanier		W912WJ-15-C-0002
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson	(508)366-7442	508-366-7445
CLIENT NAME	CLIENT EMAIL	
KOMAN Government Solutions, LLC	lekes@komangs.com	
CLIENT ADDRESS		
160 East Main Street,, Suite 2F, Westborough, MA 01581		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE: 1 of

STANDARD REPORT DELIVERY ◯
DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	REQUIRED ANALYSES: Total Metals (As, Fe, Mn) 250 ml Poly HNO3	REQUIRED ANALYSES: Dissolved Metals (As, Fe, Mn) 250 ml Poly HNO3 (Filtered)	REMARKS
				NUMBER OF CONTAINERS SUBMITTED						
6/9/16	1255	57M-95-03X_SPR16		x				1	1	MS/MSD ☆
6/9/16	1415	57M-96-11X_SPR16		x				1	1	
6/9/16	1510	57-AREA3-SW1_SPR16		x				1	1	
6/9/16	1140	57M-95-03X_H		X				1		Add trips, dups, ms/msd etc.
6/9/16	1155	57M-96-11X_H		X				1		
6/9/16	0000	DUP-1		X				1	1	

680-126310 Chain of Custody

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	6/10/16			6-10-16	1541			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	6-10-16	1410						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS:
	6/11/16	12:00	YES ◯ NO YES ◯		680-126310	2.8/3.1

CHAIN OF CUSTODY RECORD

KGS

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

360325-Boston

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Fort Devens, Devens Mass	1024-003	ACC32/43A

TESTAMERICA (LAB) PROJECT MANAGER	P O NUMBER	CONTRACT NO
Jerry Lanier		W912WJ-10-D-0003

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Anderson/Laurie Ekes	(508) 366-7442	508-366-7445

CLIENT NAME	CLIENT EMAIL
KOMAN Government Solutions, LLC	lekes@komangs.com

CLIENT ADDRESS
160 East Main Street,, Suite 2F, Westborough, MA 01581

COMPANY CONTRACTING THIS WORK (if applicable).

PAGE 1 of

STANDARD REPORT DELIVERY ○ DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT

MATRIX TYPE / REQUIRED ANALYSES

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	Dissolved Metals (SW6020 for As, SW6010 for Mn) 1-250ml Poly Filtr	VOCs (8260B) 3-40ml VOA vials	VPH (MassDEP) 3-40ml VOA vials	Dissolved Metals 6020 + 6010 (Lab Filter)				REMARKS
								HNO3	HCl	HCl	None				
6/10/16	1145	32M-01-13XBR_SPR16		X				1	3	3					
6/10/16	1050	32M-01-14XOB_SPR16		X				1	3	3					
6/10/16	1050	32M-01-17XBR_SPR16		X				1	3	3					MS/MSD
6/10/16	1240	32M-01-18XBR_SPR16		X				1	3	3					
6/10/16	0000	32M-DUP-1		X				1	3	3					Add trips, dups, ms/msd etc.
—	—	Trip Blank							3						
6/10/16	1345	32M-01-17XBR—H		X					2		1				

MAIN E-VPH VIALS

The Rest To Savannah

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	6/10/16		[signature] 6-16	6-10-16	1800			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	6-10-16	1410						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO	LABORATORY REMARKS
[signature]	6/11/16	10:06	YES ○ NO ○ YES ○ NO ○		680-126316	2.8/3.1

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-126310-1

Login Number: 126310
List Number: 1
Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	N/A	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 57 & AOC 32/43A

TestAmerica Job ID: 680-126310-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-130852-1
Client Project/Site: Fort Devens / DCL Landfill

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
11/2/2016 5:18:06 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-130852-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Fort Devens / DCL Landfill

Report Number: 680-130852-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 10/14/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.9º C, 1.5º C, 2.3º C, 3.1º C and 3.9º C.

PESTICIDES AND PCBS
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for Pesticides and PCBs in accordance with EPA SW-846 Method 8081B_8082A. The samples were prepared on 10/17/2016 and 10/19/2016 and analyzed on 10/18/2016, 10/19/2016 and 10/21/2016.

Surrogate recovery was outside acceptance limits for the following matrix spike/matrix spike duplicate (MS/MSD) samples: LFM-99-06A-RP (680-130852-3[MS]) and LFM-99-06A-RP (680-130852-3[MSD]). The parent sample's surrogate recovery was within limits. The MS/MSD sample has been qualified and reported.

The continuing calibration verification (CCV) associated with batch 680-453899 recovered above the upper control limit for 4,4'-DDD, 4,4'-DDT, Endrin and Methoxychlor. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: DUP-1 (680-130852-4) and (CCVIS 680-453899/3).

The closing continuing calibration verification (CCV) standard associated with batch 680-454108 failed to meet acceptance limits for Endrin and Methoxychlor. The associated samples were re-analyzed following a successful CCV and produced similar results, indicating that the sample matrix is adversely affecting the instrument and causing the failures.

Several analytes failed the recovery criteria low for the MS/MSD of sample LFM-99-06A-RPMS (680-130852-3) in batch 680-453705.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/20/2016 and analyzed on 10/21/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for Metals in accordance with EPA SW-846 Method 6020. The samples were prepared on 10/20/2016 and analyzed on

Job ID: 680-130852-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

10/21/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 10/18/2016 and analyzed on 10/19/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 10/18/2016.

The method blank for analytical batch 280-347182 contained alkalinity above half the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank. batch 347182

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL DISSOLVED SOLIDS
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on 10/19/2016 and 10/20/2016.

Constant weight was not achieved after 4 drying cycles for the following sample: LFM-99-06A-RP (680-130852-3). TDS Batch 347402

The sample duplicate (DUP) precision for analytical batch 280-347402 was outside control limits. Sample non-homogeneity is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 10/21/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHEMICAL OXYGEN DEMAND
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for chemical oxygen demand in accordance with EPA Method 410.4. The samples were analyzed on 10/24/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CYANIDE
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 10/25/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

9056 ANIONS
Samples LFM-99-05A (680-130852-1), LFM-99-02B (680-130852-2), LFM-99-06A-RP (680-130852-3) and DUP-1 (680-130852-4) were analyzed for 9056 Anions in accordance with SW 846 9056. The samples were analyzed on 10/22/2016 and 10/24/2016.

The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 680-454374 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Chloride in the MS/MSD was

Job ID: 680-130852-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

above the instrument calibration range. The data have been reported and qualified.

Samples LFM-99-05A (680-130852-1)[10X], LFM-99-02B (680-130852-2)[10X], LFM-99-06A-RP (680-130852-3)[25X] and DUP-1 (680-130852-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Landfill

TestAmerica Job ID: 680-130852-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-130852-1	LFM-99-05A	Water	10/12/16 11:20	10/14/16 09:40
680-130852-2	LFM-99-02B	Water	10/12/16 14:25	10/14/16 09:40
680-130852-3	LFM-99-06A-RP	Water	10/13/16 08:50	10/14/16 09:40
680-130852-4	DUP-1	Water	10/13/16 11:00	10/14/16 09:40

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Landfill

TestAmerica Job ID: 680-130852-1

Method	Method Description	Protocol	Laboratory
8081B 8082A	Organochlorine Pesticides & PCBs (GC)	SW846	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
410.4	COD	MCAWW	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL SAV
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
MA EPH	MADEP EPH (Extractable Petroleum Hydroca	NONE	
MA VPH	MADEP VPH Volatile Petroleum Hydrocarbon	NONE	

Protocol References:

EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
NONE = NONE
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
Q	One or more quality control criteria failed.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
D	The reported value is from a dilution.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

General Chemistry

Qualifier	Qualifier Description
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Landfill

TestAmerica Job ID: 680-130852-1

Client Sample ID: LFM-99-05A
Date Collected: 10/12/16 11:20
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-1
Matrix: Water

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.019	U	0.053	0.019	0.0077	ug/L		10/18/16 18:35	1
alpha-BHC	0.011	U	0.053	0.011	0.0036	ug/L		10/18/16 18:35	1
beta-BHC	0.019	U	0.053	0.019	0.0097	ug/L		10/18/16 18:35	1
Chlordane (technical)	0.32	U	0.53	0.32	0.10	ug/L		10/18/16 18:35	1
4,4'-DDD	0.011	U	0.053	0.011	0.0067	ug/L		10/18/16 18:35	1
4,4'-DDE	0.011	U	0.053	0.011	0.0054	ug/L		10/18/16 18:35	1
4,4'-DDT	0.019	U	0.053	0.019	0.0075	ug/L		10/18/16 18:35	1
delta-BHC	0.019	U	0.053	0.019	0.0080	ug/L		10/18/16 18:35	1
Dieldrin	0.011	U	0.053	0.011	0.0040	ug/L		10/18/16 18:35	1
Endosulfan I	0.011	U	0.053	0.011	0.0037	ug/L		10/18/16 18:35	1
Endosulfan II	0.011	U	0.053	0.011	0.0045	ug/L		10/18/16 18:35	1
Endosulfan sulfate	0.011	U	0.053	0.011	0.0054	ug/L		10/18/16 18:35	1
Endrin	0.011	U	0.053	0.011	0.0056	ug/L		10/18/16 18:35	1
Endrin aldehyde	0.011	U	0.053	0.011	0.0065	ug/L		10/18/16 18:35	1
Endrin ketone	0.011	U	0.053	0.011	0.0049	ug/L		10/18/16 18:35	1
gamma-BHC (Lindane)	0.011	U	0.053	0.011	0.0038	ug/L		10/18/16 18:35	1
Heptachlor	0.019	U	0.053	0.019	0.0076	ug/L		10/18/16 18:35	1
Heptachlor epoxide	0.011	U	0.053	0.011	0.0039	ug/L		10/18/16 18:35	1
Methoxychlor	0.019	U	0.053	0.019	0.010	ug/L		10/18/16 18:35	1
Toxaphene	0.85	U	5.3	0.85	0.43	ug/L		10/18/16 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*56*		*14 - 130*	*10/17/16 14:33*	*10/18/16 18:35*	*1*
Tetrachloro-m-xylene	*56*		*44 - 124*	*10/17/16 14:33*	*10/18/16 18:35*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	**260**	**D**	5.0	5.0	2.0	mg/L		10/24/16 14:05	10
Sulfate	**23**	**M**	1.0	1.0	0.40	mg/L		10/22/16 14:26	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Barium	**21**		10	5.0	1.7	ug/L		10/21/16 16:34	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/21/16 16:34	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/21/16 16:34	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/21/16 16:34	1
Iron	**94**		50	50	17	ug/L		10/21/16 16:34	1
Lead	10	U	10	10	3.9	ug/L		10/21/16 16:34	1
Manganese	**5.1**	**J**	10	3.0	1.0	ug/L		10/21/16 16:34	1
Selenium	20	U	20	20	9.9	ug/L		10/21/16 16:34	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/21/16 16:34	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/21/16 19:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.080	ug/L		10/19/16 13:25	1

Client Sample ID: LFM-99-05A

Lab Sample ID: 680-130852-1

Date Collected: 10/12/16 11:20

Matrix: Water

Date Received: 10/14/16 09:40

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**3.8**		0.10	0.050	0.019	mg/L		10/21/16 17:05	1
Chemical Oxygen Demand	10	U	20	10	4.1	mg/L		10/24/16 11:31	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		10/25/16 11:48	1
Alkalinity	**87**	**B**	5.0	3.2	1.1	mg/L		10/18/16 18:19	1
Total Dissolved Solids (TDS)	**560**		10	10	4.7	mg/L		10/19/16 10:25	1

Client Sample ID: LFM-99-02B

Lab Sample ID: 680-130852-2

Date Collected: 10/12/16 14:25

Matrix: Water

Date Received: 10/14/16 09:40

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.019	U	0.052	0.019	0.0074	ug/L		10/21/16 01:53	1
alpha-BHC	0.010	U	0.052	0.010	0.0035	ug/L		10/21/16 01:53	1
beta-BHC	0.019	U	0.052	0.019	0.0094	ug/L		10/21/16 01:53	1
Chlordane (technical)	0.31	U	0.52	0.31	0.098	ug/L		10/21/16 01:53	1
4,4'-DDD	0.010	U	0.052	0.010	0.0065	ug/L		10/21/16 01:53	1
4,4'-DDE	0.010	U	0.052	0.010	0.0053	ug/L		10/21/16 01:53	1
4,4'-DDT	0.019	U	0.052	0.019	0.0072	ug/L		10/21/16 01:53	1
delta-BHC	0.019	U	0.052	0.019	0.0078	ug/L		10/21/16 01:53	1
Dieldrin	0.010	U	0.052	0.010	0.0039	ug/L		10/21/16 01:53	1
Endosulfan I	0.010	U	0.052	0.010	0.0036	ug/L		10/21/16 01:53	1
Endosulfan II	0.010	U	0.052	0.010	0.0043	ug/L		10/21/16 01:53	1
Endosulfan sulfate	0.010	U	0.052	0.010	0.0053	ug/L		10/21/16 01:53	1
Endrin	0.010	U Q	0.052	0.010	0.0055	ug/L		10/21/16 01:53	1
Endrin aldehyde	0.010	U	0.052	0.010	0.0063	ug/L		10/21/16 01:53	1
Endrin ketone	0.010	U	0.052	0.010	0.0048	ug/L		10/21/16 01:53	1
gamma-BHC (Lindane)	0.010	U	0.052	0.010	0.0037	ug/L		10/21/16 01:53	1
Heptachlor	0.019	U	0.052	0.019	0.0073	ug/L		10/21/16 01:53	1
Heptachlor epoxide	0.010	U	0.052	0.010	0.0038	ug/L		10/21/16 01:53	1
Methoxychlor	0.019	U Q	0.052	0.019	0.010	ug/L		10/21/16 01:53	1
Toxaphene	0.83	U	5.2	0.83	0.41	ug/L		10/21/16 01:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*14 - 130*	*10/19/16 15:18*	*10/21/16 01:53*	*1*
Tetrachloro-m-xylene	*55*		*44 - 124*	*10/19/16 15:18*	*10/21/16 01:53*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	**360**	**D**	5.0	5.0	2.0	mg/L		10/24/16 14:22	10
Sulfate	**25**	**M**	1.0	1.0	0.40	mg/L		10/22/16 15:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Barium	**15**		10	5.0	1.7	ug/L		10/21/16 16:50	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/21/16 16:50	1
Chromium	**6.0**	**J**	10	4.0	1.6	ug/L		10/21/16 16:50	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/21/16 16:50	1
Iron	**27**	**J**	50	50	17	ug/L		10/21/16 16:50	1
Lead	10	U	10	10	3.9	ug/L		10/21/16 16:50	1

Client Sample ID: LFM-99-02B

Date Collected: 10/12/16 14:25
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	**2.0**	**J**	10	3.0	1.0	ug/L		10/21/16 16:50	1
Selenium	20	U	20	20	9.9	ug/L		10/21/16 16:50	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/21/16 16:50	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/21/16 19:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.080	ug/L		10/19/16 13:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.81**		0.10	0.050	0.019	mg/L		10/21/16 17:07	1
Chemical Oxygen Demand	**5.0**	**J**	20	10	4.1	mg/L		10/24/16 11:31	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		10/25/16 11:49	1
Alkalinity	**110**	**B**	5.0	3.2	1.1	mg/L		10/18/16 18:25	1
Total Dissolved Solids (TDS)	**730**		10	10	4.7	mg/L		10/19/16 10:25	1

Client Sample ID: LFM-99-06A-RP

Date Collected: 10/13/16 08:50
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-3

Matrix: Water

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U J	0.051	0.018	0.0073	ug/L		10/18/16 19:06	1
alpha-BHC	0.010	U J	0.051	0.010	0.0035	ug/L		10/18/16 19:06	1
beta-BHC	0.018	U	0.051	0.018	0.0092	ug/L		10/18/16 19:06	1
Chlordane (technical)	0.30	U	0.51	0.30	0.096	ug/L		10/18/16 19:06	1
4,4'-DDD	0.010	U	0.051	0.010	0.0064	ug/L		10/18/16 19:06	1
4,4'-DDE	0.010	U J	0.051	0.010	0.0052	ug/L		10/18/16 19:06	1
4,4'-DDT	0.018	U	0.051	0.018	0.0071	ug/L		10/18/16 19:06	1
delta-BHC	0.018	U	0.051	0.018	0.0076	ug/L		10/18/16 19:06	1
Dieldrin	0.010	U J	0.051	0.010	0.0039	ug/L		10/18/16 19:06	1
Endosulfan I	0.010	U J	0.051	0.010	0.0036	ug/L		10/18/16 19:06	1
Endosulfan II	0.010	U	0.051	0.010	0.0043	ug/L		10/18/16 19:06	1
Endosulfan sulfate	0.010	U	0.051	0.010	0.0052	ug/L		10/18/16 19:06	1
Endrin	0.010	U J	0.051	0.010	0.0054	ug/L		10/18/16 19:06	1
Endrin aldehyde	0.010	U	0.051	0.010	0.0062	ug/L		10/18/16 19:06	1
Endrin ketone	0.010	U	0.051	0.010	0.0047	ug/L		10/18/16 19:06	1
gamma-BHC (Lindane)	0.010	U J	0.051	0.010	0.0037	ug/L		10/18/16 19:06	1
Heptachlor	0.018	U J	0.051	0.018	0.0072	ug/L		10/18/16 19:06	1
Heptachlor epoxide	0.010	U J	0.051	0.010	0.0038	ug/L		10/18/16 19:06	1
Methoxychlor	0.018	U	0.051	0.018	0.010	ug/L		10/18/16 19:06	1
Toxaphene	0.81	U	5.1	0.81	0.41	ug/L		10/18/16 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*67*		*14 - 130*	*10/17/16 14:33*	*10/18/16 19:06*	*1*
Tetrachloro-m-xylene	*57*		*44 - 124*	*10/17/16 14:33*	*10/18/16 19:06*	*1*

Client Sample ID: LFM-99-06A-RP

Lab Sample ID: 680-130852-3
Date Collected: 10/13/16 08:50
Matrix: Water
Date Received: 10/14/16 09:40

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	**300**	**D**	13	13	5.0	mg/L		10/24/16 12:20	25
Sulfate	**31**	**M**	1.0	1.0	0.40	mg/L		10/22/16 15:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Barium	**5.0**	**J**	10	5.0	1.7	ug/L		10/21/16 16:55	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/21/16 16:55	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/21/16 16:55	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/21/16 16:55	1
Iron	50	U	50	50	17	ug/L		10/21/16 16:55	1
Lead	10	U	10	10	3.9	ug/L		10/21/16 16:55	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/21/16 16:55	1
Selenium	20	U	20	20	9.9	ug/L		10/21/16 16:55	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/21/16 16:55	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U J	3.0	3.0	1.5	ug/L		10/21/16 20:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.080	ug/L		10/19/16 13:34	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**1.1**		0.10	0.050	0.019	mg/L		10/21/16 17:11	1
Chemical Oxygen Demand	10	U	20	10	4.1	mg/L		10/24/16 11:31	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		10/25/16 11:51	1
Alkalinity	**120**	**B**	5.0	3.2	1.1	mg/L		10/18/16 18:30	1
Total Dissolved Solids (TDS)	**690**		10	10	4.7	mg/L		10/20/16 11:24	1

Client Sample ID: DUP-1

Lab Sample ID: 680-130852-4
Date Collected: 10/13/16 11:00
Matrix: Water
Date Received: 10/14/16 09:40

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U	0.051	0.018	0.0073	ug/L		10/19/16 16:50	1
alpha-BHC	0.010	U	0.051	0.010	0.0034	ug/L		10/19/16 16:50	1
beta-BHC	0.018	U	0.051	0.018	0.0092	ug/L		10/19/16 16:50	1
Chlordane (technical)	0.30	U	0.51	0.30	0.096	ug/L		10/19/16 16:50	1
4,4'-DDD	0.010	U Q	0.051	0.010	0.0064	ug/L		10/19/16 16:50	1
4,4'-DDE	0.010	U	0.051	0.010	0.0052	ug/L		10/19/16 16:50	1
4,4'-DDT	0.018	U Q	0.051	0.018	0.0071	ug/L		10/19/16 16:50	1
delta-BHC	0.018	U	0.051	0.018	0.0076	ug/L		10/19/16 16:50	1
Dieldrin	0.010	U	0.051	0.010	0.0039	ug/L		10/19/16 16:50	1
Endosulfan I	0.010	U	0.051	0.010	0.0035	ug/L		10/19/16 16:50	1
Endosulfan II	0.010	U	0.051	0.010	0.0043	ug/L		10/19/16 16:50	1
Endosulfan sulfate	0.010	U	0.051	0.010	0.0052	ug/L		10/19/16 16:50	1
Endrin	0.010	U Q	0.051	0.010	0.0054	ug/L		10/19/16 16:50	1
Endrin aldehyde	0.010	U	0.051	0.010	0.0062	ug/L		10/19/16 16:50	1

Client Sample ID: DUP-1

Date Collected: 10/13/16 11:00
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-4

Matrix: Water

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endrin ketone	0.010	U	0.051	0.010	0.0047	ug/L		10/19/16 16:50	1
gamma-BHC (Lindane)	0.010	U	0.051	0.010	0.0036	ug/L		10/19/16 16:50	1
Heptachlor	0.018	U	0.051	0.018	0.0072	ug/L		10/19/16 16:50	1
Heptachlor epoxide	0.010	U	0.051	0.010	0.0037	ug/L		10/19/16 16:50	1
Methoxychlor	0.018	U Q	0.051	0.018	0.0099	ug/L		10/19/16 16:50	1
Toxaphene	0.81	U	5.1	0.81	0.41	ug/L		10/19/16 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*62*		*14 - 130*	*10/17/16 14:33*	*10/19/16 16:50*	*1*
Tetrachloro-m-xylene	*62*		*44 - 124*	*10/17/16 14:33*	*10/19/16 16:50*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	**300**	**D**	5.0	5.0	2.0	mg/L		10/24/16 14:40	10
Sulfate	**31**	**M**	1.0	1.0	0.40	mg/L		10/22/16 17:55	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Barium	**4.5**	**J**	10	5.0	1.7	ug/L		10/21/16 17:21	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/21/16 17:21	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/21/16 17:21	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/21/16 17:21	1
Iron	50	U	50	50	17	ug/L		10/21/16 17:21	1
Lead	10	U	10	10	3.9	ug/L		10/21/16 17:21	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/21/16 17:21	1
Selenium	20	U	20	20	9.9	ug/L		10/21/16 17:21	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/21/16 17:21	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/21/16 20:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.080	ug/L		10/19/16 13:48	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**1.1**		0.10	0.050	0.019	mg/L		10/21/16 17:09	1
Chemical Oxygen Demand	**5.4**	**J**	20	10	4.1	mg/L		10/24/16 11:31	1
Cyanide, Total	0.0050	U Q	0.010	0.0050	0.0025	mg/L		10/25/16 11:56	1
Alkalinity	**120**	**B**	5.0	3.2	1.1	mg/L		10/18/16 18:35	1
Total Dissolved Solids (TDS)	**660**		10	10	4.7	mg/L		10/20/16 11:24	1

Surrogate Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Landfill

TestAmerica Job ID: 680-130852-1

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCB1 (14-130)	TCX1 (44-124)								
680-130852-1	LFM-99-05A	56	56								
680-130852-2	LFM-99-02B	55	55								
680-130852-3	LFM-99-06A-RP	67	57								
680-130852-3 MS	LFM-99-06A-RP	54	36 Q								
680-130852-3 MSD	LFM-99-06A-RP	60	39 Q								
680-130852-4	DUP-1	62	62								
LCS 680-453474/16-A	Lab Control Sample	59	62								
LCS 680-453838/7-A	Lab Control Sample	47	55								
MB 680-453474/15-A	Method Blank	65	61								
MB 680-453838/6-A	Method Blank	48	59								

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Lab Sample ID: MB 680-453474/15-A
Matrix: Water
Analysis Batch: 453705

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 453474

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U	0.050	0.018	0.0072	ug/L		10/18/16 17:02	1
alpha-BHC	0.010	U	0.050	0.010	0.0034	ug/L		10/18/16 17:02	1
beta-BHC	0.018	U	0.050	0.018	0.0091	ug/L		10/18/16 17:02	1
Chlordane (technical)	0.30	U	0.50	0.30	0.095	ug/L		10/18/16 17:02	1
4,4'-DDD	0.010	U	0.050	0.010	0.0063	ug/L		10/18/16 17:02	1
4,4'-DDE	0.010	U	0.050	0.010	0.0051	ug/L		10/18/16 17:02	1
4,4'-DDT	0.018	U	0.050	0.018	0.0070	ug/L		10/18/16 17:02	1
delta-BHC	0.018	U	0.050	0.018	0.0075	ug/L		10/18/16 17:02	1
Dieldrin	0.010	U	0.050	0.010	0.0038	ug/L		10/18/16 17:02	1
Endosulfan I	0.010	U	0.050	0.010	0.0035	ug/L		10/18/16 17:02	1
Endosulfan II	0.010	U	0.050	0.010	0.0042	ug/L		10/18/16 17:02	1
Endosulfan sulfate	0.010	U	0.050	0.010	0.0051	ug/L		10/18/16 17:02	1
Endrin	0.010	U	0.050	0.010	0.0053	ug/L		10/18/16 17:02	1
Endrin aldehyde	0.010	U	0.050	0.010	0.0061	ug/L		10/18/16 17:02	1
Endrin ketone	0.010	U	0.050	0.010	0.0046	ug/L		10/18/16 17:02	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	0.0036	ug/L		10/18/16 17:02	1
Heptachlor	0.018	U	0.050	0.018	0.0071	ug/L		10/18/16 17:02	1
Heptachlor epoxide	0.010	U	0.050	0.010	0.0037	ug/L		10/18/16 17:02	1
Methoxychlor	0.018	U	0.050	0.018	0.0098	ug/L		10/18/16 17:02	1
Toxaphene	0.80	U	5.0	0.80	0.40	ug/L		10/18/16 17:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*14 - 130*	*10/17/16 14:33*	*10/18/16 17:02*	*1*
Tetrachloro-m-xylene	*61*		*44 - 124*	*10/17/16 14:33*	*10/18/16 17:02*	*1*

Lab Sample ID: LCS 680-453474/16-A
Matrix: Water
Analysis Batch: 453705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 453474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.100	0.0641		ug/L		64	45 - 134
alpha-BHC	0.100	0.0778		ug/L		78	54 - 138
beta-BHC	0.100	0.0845		ug/L		85	56 - 136
4,4'-DDD	0.100	0.0634		ug/L		63	56 - 143
4,4'-DDE	0.100	0.0664		ug/L		66	57 - 135
4,4'-DDT	0.100	0.0754		ug/L		75	51 - 143
delta-BHC	0.100	0.0773		ug/L		77	52 - 142
Dieldrin	0.100	0.0802		ug/L		80	60 - 136
Endosulfan I	0.100	0.0706		ug/L		71	62 - 126
Endosulfan II	0.100	0.0803		ug/L		80	52 - 135
Endosulfan sulfate	0.100	0.0861		ug/L		86	62 - 133
Endrin	0.100	0.0701		ug/L		70	60 - 138
Endrin aldehyde	0.100	0.0813		ug/L		81	51 - 132
Endrin ketone	0.100	0.0816		ug/L		82	58 - 134
gamma-BHC (Lindane)	0.100	0.0747		ug/L		75	59 - 134
Heptachlor	0.100	0.0652		ug/L		65	54 - 130
Heptachlor epoxide	0.100	0.0775		ug/L		77	61 - 133
Methoxychlor	0.100	0.0830		ug/L		83	54 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	59		14 - 130
Tetrachloro-m-xylene	62		44 - 124

Lab Sample ID: 680-130852-3 MS
Matrix: Water
Analysis Batch: 453705

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 453474

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.018	U J	0.102	0.0270	J	ug/L		26	45 - 134
alpha-BHC	0.010	U J	0.102	0.0468	J	ug/L		46	54 - 138
beta-BHC	0.018	U	0.102	0.0604		ug/L		59	56 - 136
4,4'-DDD	0.010	U	0.102	0.0482	J	ug/L		47	56 - 143
4,4'-DDE	0.010	U J	0.102	0.0423	J	ug/L		41	57 - 135
4,4'-DDT	0.018	U	0.102	0.0670		ug/L		66	51 - 143
delta-BHC	0.018	U	0.102	0.0530		ug/L		52	52 - 142
Dieldrin	0.010	U J	0.102	0.0557	J	ug/L		54	60 - 136
Endosulfan I	0.010	U J	0.102	0.0477	J	ug/L		47	62 - 126
Endosulfan II	0.010	U	0.102	0.0592		ug/L		58	52 - 135
Endosulfan sulfate	0.010	U	0.102	0.0692		ug/L		68	62 - 133
Endrin	0.010	U J	0.102	0.0527	J	ug/L		52	60 - 138
Endrin aldehyde	0.010	U	0.102	0.0666		ug/L		65	51 - 132
Endrin ketone	0.010	U	0.102	0.0671		ug/L		66	58 - 134
gamma-BHC (Lindane)	0.010	U J	0.102	0.0464	J	ug/L		45	59 - 134
Heptachlor	0.018	U J	0.102	0.0315	J	ug/L		31	54 - 130
Heptachlor epoxide	0.010	U J	0.102	0.0516	J	ug/L		51	61 - 133
Methoxychlor	0.018	U	0.102	0.0706		ug/L		69	54 - 145

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl	54		14 - 130
Tetrachloro-m-xylene	36	Q	44 - 124

Lab Sample ID: 680-130852-3 MSD
Matrix: Water
Analysis Batch: 453705

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 453474

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.018	U J	0.102	0.0284	J	ug/L		28	45 - 134	5	30
alpha-BHC	0.010	U J	0.102	0.0500	J	ug/L		49	54 - 138	7	30
beta-BHC	0.018	U	0.102	0.0656		ug/L		64	56 - 136	8	30
4,4'-DDD	0.010	U	0.102	0.0528	J	ug/L		52	56 - 143	9	30
4,4'-DDE	0.010	U J	0.102	0.0466	J	ug/L		46	57 - 135	10	30
4,4'-DDT	0.018	U	0.102	0.0762		ug/L		74	51 - 143	13	30
delta-BHC	0.018	U	0.102	0.0587		ug/L		57	52 - 142	10	30
Dieldrin	0.010	U J	0.102	0.0581	J	ug/L		57	60 - 136	4	30
Endosulfan I	0.010	U J	0.102	0.0492	J	ug/L		48	62 - 126	3	30
Endosulfan II	0.010	U	0.102	0.0626		ug/L		61	52 - 135	6	30
Endosulfan sulfate	0.010	U	0.102	0.0739		ug/L		72	62 - 133	7	30
Endrin	0.010	U J	0.102	0.0573	J	ug/L		56	60 - 138	8	30
Endrin aldehyde	0.010	U	0.102	0.0714		ug/L		70	51 - 132	7	30
Endrin ketone	0.010	U	0.102	0.0720		ug/L		70	58 - 134	7	30
gamma-BHC (Lindane)	0.010	U J	0.102	0.0497	J	ug/L		49	59 - 134	7	30
Heptachlor	0.018	U J	0.102	0.0334	J	ug/L		33	54 - 130	6	30
Heptachlor epoxide	0.010	U J	0.102	0.0548	J	ug/L		54	61 - 133	6	30

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Lab Sample ID: 680-130852-3 MSD
Matrix: Water
Analysis Batch: 453705

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 453474

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methoxychlor	0.018	U	0.102	0.0763		ug/L		75	54 - 145	8	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*60*		*14 - 130*
Tetrachloro-m-xylene	*39*	*Q*	*44 - 124*

Lab Sample ID: MB 680-453838/6-A
Matrix: Water
Analysis Batch: 454108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 453838

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U	0.050	0.018	0.0072	ug/L		10/20/16 20:58	1
alpha-BHC	0.010	U	0.050	0.010	0.0034	ug/L		10/20/16 20:58	1
beta-BHC	0.018	U	0.050	0.018	0.0091	ug/L		10/20/16 20:58	1
Chlordane (technical)	0.30	U	0.50	0.30	0.095	ug/L		10/20/16 20:58	1
4,4'-DDD	0.010	U	0.050	0.010	0.0063	ug/L		10/20/16 20:58	1
4,4'-DDE	0.010	U	0.050	0.010	0.0051	ug/L		10/20/16 20:58	1
4,4'-DDT	0.018	U	0.050	0.018	0.0070	ug/L		10/20/16 20:58	1
delta-BHC	0.018	U	0.050	0.018	0.0075	ug/L		10/20/16 20:58	1
Dieldrin	0.010	U	0.050	0.010	0.0038	ug/L		10/20/16 20:58	1
Endosulfan I	0.010	U	0.050	0.010	0.0035	ug/L		10/20/16 20:58	1
Endosulfan II	0.010	U	0.050	0.010	0.0042	ug/L		10/20/16 20:58	1
Endosulfan sulfate	0.010	U	0.050	0.010	0.0051	ug/L		10/20/16 20:58	1
Endrin	0.010	U	0.050	0.010	0.0053	ug/L		10/20/16 20:58	1
Endrin aldehyde	0.010	U	0.050	0.010	0.0061	ug/L		10/20/16 20:58	1
Endrin ketone	0.010	U	0.050	0.010	0.0046	ug/L		10/20/16 20:58	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	0.0036	ug/L		10/20/16 20:58	1
Heptachlor	0.018	U	0.050	0.018	0.0071	ug/L		10/20/16 20:58	1
Heptachlor epoxide	0.010	U	0.050	0.010	0.0037	ug/L		10/20/16 20:58	1
Methoxychlor	0.018	U	0.050	0.018	0.0098	ug/L		10/20/16 20:58	1
Toxaphene	0.80	U	5.0	0.80	0.40	ug/L		10/20/16 20:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*48*		*14 - 130*	*10/19/16 15:18*	*10/20/16 20:58*	*1*
Tetrachloro-m-xylene	*59*		*44 - 124*	*10/19/16 15:18*	*10/20/16 20:58*	*1*

Lab Sample ID: LCS 680-453838/7-A
Matrix: Water
Analysis Batch: 454108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 453838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.100	0.0658		ug/L		66	45 - 134
alpha-BHC	0.100	0.0758		ug/L		76	54 - 138
beta-BHC	0.100	0.0820		ug/L		82	56 - 136
4,4'-DDD	0.100	0.0730		ug/L		73	56 - 143
4,4'-DDE	0.100	0.0780		ug/L		78	57 - 135
4,4'-DDT	0.100	0.0820		ug/L		82	51 - 143
delta-BHC	0.100	0.0845		ug/L		85	52 - 142

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Lab Sample ID: LCS 680-453838/7-A
Matrix: Water
Analysis Batch: 454108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 453838

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Dieldrin			0.100	0.0811		ug/L		81	60 - 136		
Endosulfan I			0.100	0.0755		ug/L		75	62 - 126		
Endosulfan II			0.100	0.0831		ug/L		83	52 - 135		
Endosulfan sulfate			0.100	0.0853		ug/L		85	62 - 133		
Endrin			0.100	0.0654		ug/L		65	60 - 138		
Endrin aldehyde			0.100	0.0874		ug/L		87	51 - 132		
Endrin ketone			0.100	0.0884		ug/L		88	58 - 134		
gamma-BHC (Lindane)			0.100	0.0728		ug/L		73	59 - 134		
Heptachlor			0.100	0.0650		ug/L		65	54 - 130		
Heptachlor epoxide			0.100	0.0795		ug/L		79	61 - 133		
Methoxychlor			0.100	0.0802		ug/L		80	54 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*47*		*14 - 130*
Tetrachloro-m-xylene	*55*		*44 - 124*

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-454374/2
Matrix: Water
Analysis Batch: 454374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	0.50	U	0.50	0.50	0.20	mg/L		10/22/16 09:14	1
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/22/16 09:14	1

Lab Sample ID: LCS 680-454374/3
Matrix: Water
Analysis Batch: 454374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			10.0	10.1		mg/L		101	90 - 110		
Sulfate			10.0	10.0		mg/L		100	90 - 110		

Lab Sample ID: LCSD 680-454374/4
Matrix: Water
Analysis Batch: 454374

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			10.0	10.1		mg/L		101	90 - 110	0	15
Sulfate			10.0	10.1		mg/L		101	90 - 110	1	15

Lab Sample ID: 680-130852-3 MS
Matrix: Water
Analysis Batch: 454374

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	31	M	10.0	40.6	M	mg/L		99	80 - 120		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 680-130852-3 MSD
Matrix: Water
Analysis Batch: 454374

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	31	M	10.0	40.7	M	mg/L		100	80 - 120	0	15

Lab Sample ID: MB 680-454530/2
Matrix: Water
Analysis Batch: 454530

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	0.50	U	0.50	0.50	0.20	mg/L		10/24/16 10:00	1

Lab Sample ID: LCS 680-454530/3
Matrix: Water
Analysis Batch: 454530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 680-454530/4
Matrix: Water
Analysis Batch: 454530

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.1		mg/L		101	90 - 110	0	15

Lab Sample ID: 680-130852-3 MS
Matrix: Water
Analysis Batch: 454530

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	300	D	250	557	D	mg/L		104	80 - 120

Lab Sample ID: 680-130852-3 MSD
Matrix: Water
Analysis Batch: 454530

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	300	D	250	558	D	mg/L		105	80 - 120	0	15

Lab Sample ID: 680-130852-3 DU
Matrix: Water
Analysis Batch: 454530

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	300	D	298	D	mg/L		0.5	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-454041/1-A
Matrix: Water
Analysis Batch: 454382

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454041

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Barium	5.0	U	10	5.0	1.7	ug/L		10/21/16 16:24	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/21/16 16:24	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/21/16 16:24	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/21/16 16:24	1
Iron	50	U	50	50	17	ug/L		10/21/16 16:24	1
Lead	10	U	10	10	3.9	ug/L		10/21/16 16:24	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/21/16 16:24	1
Selenium	20	U	20	20	9.9	ug/L		10/21/16 16:24	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/21/16 16:24	1

Lab Sample ID: LCS 680-454041/2-A
Matrix: Water
Analysis Batch: 454382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454041

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	100	96.9		ug/L		97	88 - 113
Cadmium	50.0	50.5		ug/L		101	88 - 113
Chromium	100	101		ug/L		101	90 - 113
Copper	100	99.1		ug/L		99	86 - 114
Iron	5000	4820		ug/L		96	87 - 115
Lead	500	488		ug/L		98	86 - 113
Manganese	500	525		ug/L		105	90 - 114
Selenium	100	97.9		ug/L		98	83 - 114
Silver	50.0	48.7		ug/L		97	84 - 115

Lab Sample ID: 680-130852-3 MS
Matrix: Water
Analysis Batch: 454382

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 454041

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	5.0	J	100	102		ug/L		97	88 - 113
Cadmium	3.0	U	50.0	50.1		ug/L		100	88 - 113
Chromium	4.0	U	100	102		ug/L		102	90 - 113
Copper	5.0	U	100	102		ug/L		102	86 - 114
Iron	50	U	5000	4810		ug/L		96	87 - 115
Lead	10	U	500	480		ug/L		96	86 - 113
Manganese	3.0	U	500	522		ug/L		104	90 - 114
Selenium	20	U	100	103		ug/L		103	83 - 114
Silver	1.5	U	50.0	51.4		ug/L		103	84 - 115

Lab Sample ID: 680-130852-3 MSD
Matrix: Water
Analysis Batch: 454382

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 454041

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	5.0	J	100	103		ug/L		98	88 - 113	1	20
Cadmium	3.0	U	50.0	50.7		ug/L		101	88 - 113	1	20
Chromium	4.0	U	100	102		ug/L		102	90 - 113	0	20
Copper	5.0	U	100	103		ug/L		103	86 - 114	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-130852-3 MSD — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454382 — **Prep Batch: 454041**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	50	U	5000	4860		ug/L		97	87 - 115	1	20
Lead	10	U	500	485		ug/L		97	86 - 113	1	20
Manganese	3.0	U	500	527		ug/L		105	90 - 114	1	20
Selenium	20	U	100	101		ug/L		101	83 - 114	1	20
Silver	1.5	U	50.0	51.6		ug/L		103	84 - 115	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-454038/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454476 — **Prep Batch: 454038**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/21/16 19:38	1

Lab Sample ID: LCS 680-454038/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454476 — **Prep Batch: 454038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	103		ug/L		103	84 - 116

Lab Sample ID: 680-130852-3 MS — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454476 — **Prep Batch: 454038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	3.0	U J	100	105		ug/L		105	84 - 116

Lab Sample ID: 680-130852-3 MSD — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454476 — **Prep Batch: 454038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	3.0	U J	100	100		ug/L		100	84 - 116	5	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-453682/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454013 — **Prep Batch: 453682**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hg	0.20	U	0.20	0.20	0.080	ug/L		10/19/16 13:08	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 680-453682/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454013 — **Prep Batch: 453682**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	2.50	2.48		ug/L		99	80 - 124

Lab Sample ID: 680-130852-3 MS — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454013 — **Prep Batch: 453682**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.20	U	1.00	0.992		ug/L		99	80 - 124

Lab Sample ID: 680-130852-3 MSD — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454013 — **Prep Batch: 453682**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.20	U	1.00	1.08		ug/L		108	80 - 124	8	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-347649/23 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347649

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/21/16 16:33	1

Lab Sample ID: LCS 280-347649/22 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	5.00	5.23		mg/L		105	90 - 110

Lab Sample ID: MRL 280-347649/21 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347649

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	0.100	0.0840	J	mg/L		84	50 - 150

Lab Sample ID: 680-130852-3 MS — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347649

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	1.1		4.00	5.05		mg/L		99	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-130852-3 MSD — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347649

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate/Nitrite-N	1.1		4.00	5.10		mg/L		101	90 - 110	1	10

Method: 410.4 - COD

Lab Sample ID: MB 280-347863/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347863

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	20	10	4.1	mg/L		10/24/16 11:31	1

Lab Sample ID: LCS 280-347863/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347863

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	100	91.3		mg/L		91	90 - 110

Lab Sample ID: LCSD 280-347863/4 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347863

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	100	93.2		mg/L		93	90 - 110	2	11

Lab Sample ID: 680-130852-3 MS — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347863

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	10	U	50.0	49.9		mg/L		100	90 - 110

Lab Sample ID: 680-130852-3 MSD — **Client Sample ID: LFM-99-06A-RP**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347863

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	10	U	50.0	47.3		mg/L		95	90 - 110	5	11

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 680-454624/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 454717 — **Prep Batch: 454624**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		10/25/16 11:23	1

Method: 9012B - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: LCS 680-454624/2-A
Matrix: Water
Analysis Batch: 454717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454624

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0501	0.0494		mg/L		99	83 - 116

Lab Sample ID: 680-130852-3 MS
Matrix: Water
Analysis Batch: 454717

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 454624

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0050	U	0.0501	0.0502		mg/L		100	83 - 116

Lab Sample ID: 680-130852-3 MSD
Matrix: Water
Analysis Batch: 454717

Client Sample ID: LFM-99-06A-RP
Prep Type: Total/NA
Prep Batch: 454624

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.0050	U	0.0501	0.0494		mg/L		99	83 - 116	2	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-347182/5
Matrix: Water
Analysis Batch: 347182

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	2.57	J	5.0	3.2	1.1	mg/L		10/18/16 16:37	1

Lab Sample ID: LCS 280-347182/4
Matrix: Water
Analysis Batch: 347182

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	197		mg/L		98	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-347215/1
Matrix: Water
Analysis Batch: 347215

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	10	U	10	10	4.7	mg/L		10/19/16 10:25	1

Lab Sample ID: LCS 280-347215/2
Matrix: Water
Analysis Batch: 347215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	489		mg/L		98	86 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 280-347402/1
Matrix: Water
Analysis Batch: 347402

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	10	U	10	10	4.7	mg/L		10/20/16 11:24	1

Lab Sample ID: LCS 280-347402/2
Matrix: Water
Analysis Batch: 347402

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	494		mg/L		99	86 - 110

GC Semi VOA

Prep Batch: 453474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	3520C	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	3520C	
680-130852-4	DUP-1	Total/NA	Water	3520C	
MB 680-453474/15-A	Method Blank	Total/NA	Water	3520C	
LCS 680-453474/16-A	Lab Control Sample	Total/NA	Water	3520C	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	3520C	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	3520C	

Analysis Batch: 453705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	8081B 8082A	453474
680-130852-3	LFM-99-06A-RP	Total/NA	Water	8081B 8082A	453474
MB 680-453474/15-A	Method Blank	Total/NA	Water	8081B 8082A	453474
LCS 680-453474/16-A	Lab Control Sample	Total/NA	Water	8081B 8082A	453474
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	8081B 8082A	453474
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	8081B 8082A	453474

Prep Batch: 453838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-2	LFM-99-02B	Total/NA	Water	3520C	
MB 680-453838/6-A	Method Blank	Total/NA	Water	3520C	
LCS 680-453838/7-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 453899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-4	DUP-1	Total/NA	Water	8081B 8082A	453474

Analysis Batch: 454108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-2	LFM-99-02B	Total/NA	Water	8081B 8082A	453838
MB 680-453838/6-A	Method Blank	Total/NA	Water	8081B 8082A	453838
LCS 680-453838/7-A	Lab Control Sample	Total/NA	Water	8081B 8082A	453838

HPLC/IC

Analysis Batch: 454374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	9056A	
680-130852-2	LFM-99-02B	Total/NA	Water	9056A	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	9056A	
680-130852-4	DUP-1	Total/NA	Water	9056A	
MB 680-454374/2	Method Blank	Total/NA	Water	9056A	
LCS 680-454374/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-454374/4	Lab Control Sample Dup	Total/NA	Water	9056A	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	9056A	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	9056A	

Analysis Batch: 454530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	9056A	

HPLC/IC (Continued)

Analysis Batch: 454530 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-2	LFM-99-02B	Total/NA	Water	9056A	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	9056A	
680-130852-4	DUP-1	Total/NA	Water	9056A	
MB 680-454530/2	Method Blank	Total/NA	Water	9056A	
LCS 680-454530/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-454530/4	Lab Control Sample Dup	Total/NA	Water	9056A	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	9056A	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	9056A	
680-130852-3 DU	LFM-99-06A-RP	Total/NA	Water	9056A	

Metals

Prep Batch: 453682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	7470A	
680-130852-2	LFM-99-02B	Total/NA	Water	7470A	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	7470A	
680-130852-4	DUP-1	Total/NA	Water	7470A	
MB 680-453682/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-453682/2-A	Lab Control Sample	Total/NA	Water	7470A	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	7470A	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	7470A	

Analysis Batch: 454013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	7470A	453682
680-130852-2	LFM-99-02B	Total/NA	Water	7470A	453682
680-130852-3	LFM-99-06A-RP	Total/NA	Water	7470A	453682
680-130852-4	DUP-1	Total/NA	Water	7470A	453682
MB 680-453682/1-A	Method Blank	Total/NA	Water	7470A	453682
LCS 680-453682/2-A	Lab Control Sample	Total/NA	Water	7470A	453682
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	7470A	453682
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	7470A	453682

Prep Batch: 454038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	3010A	
680-130852-2	LFM-99-02B	Total/NA	Water	3010A	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	3010A	
680-130852-4	DUP-1	Total/NA	Water	3010A	
MB 680-454038/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-454038/2-A	Lab Control Sample	Total/NA	Water	3010A	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	3010A	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	3010A	

Prep Batch: 454041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	3010A	
680-130852-2	LFM-99-02B	Total/NA	Water	3010A	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 454041 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-4	DUP-1	Total/NA	Water	3010A	
MB 680-454041/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-454041/2-A	Lab Control Sample	Total/NA	Water	3010A	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	3010A	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	3010A	

Analysis Batch: 454382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	6010C	454041
680-130852-2	LFM-99-02B	Total/NA	Water	6010C	454041
680-130852-3	LFM-99-06A-RP	Total/NA	Water	6010C	454041
680-130852-4	DUP-1	Total/NA	Water	6010C	454041
MB 680-454041/1-A	Method Blank	Total/NA	Water	6010C	454041
LCS 680-454041/2-A	Lab Control Sample	Total/NA	Water	6010C	454041
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	6010C	454041
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	6010C	454041

Analysis Batch: 454476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	6020A	454038
680-130852-2	LFM-99-02B	Total/NA	Water	6020A	454038
680-130852-3	LFM-99-06A-RP	Total/NA	Water	6020A	454038
680-130852-4	DUP-1	Total/NA	Water	6020A	454038
MB 680-454038/1-A	Method Blank	Total/NA	Water	6020A	454038
LCS 680-454038/2-A	Lab Control Sample	Total/NA	Water	6020A	454038
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	6020A	454038
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	6020A	454038

General Chemistry

Analysis Batch: 347182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	SM 2320B	
680-130852-2	LFM-99-02B	Total/NA	Water	SM 2320B	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	SM 2320B	
680-130852-4	DUP-1	Total/NA	Water	SM 2320B	
MB 280-347182/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-347182/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 347215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	SM 2540C	
680-130852-2	LFM-99-02B	Total/NA	Water	SM 2540C	
MB 280-347215/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-347215/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 347402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-3	LFM-99-06A-RP	Total/NA	Water	SM 2540C	
680-130852-4	DUP-1	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 347402 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-347402/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-347402/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 347649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	353.2	
680-130852-2	LFM-99-02B	Total/NA	Water	353.2	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	353.2	
680-130852-4	DUP-1	Total/NA	Water	353.2	
MB 280-347649/23	Method Blank	Total/NA	Water	353.2	
LCS 280-347649/22	Lab Control Sample	Total/NA	Water	353.2	
MRL 280-347649/21	Lab Control Sample	Total/NA	Water	353.2	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	353.2	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	353.2	

Analysis Batch: 347863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	410.4	
680-130852-2	LFM-99-02B	Total/NA	Water	410.4	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	410.4	
680-130852-4	DUP-1	Total/NA	Water	410.4	
MB 280-347863/5	Method Blank	Total/NA	Water	410.4	
LCS 280-347863/3	Lab Control Sample	Total/NA	Water	410.4	
LCSD 280-347863/4	Lab Control Sample Dup	Total/NA	Water	410.4	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	410.4	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	410.4	

Prep Batch: 454624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	9012B	
680-130852-2	LFM-99-02B	Total/NA	Water	9012B	
680-130852-3	LFM-99-06A-RP	Total/NA	Water	9012B	
680-130852-4	DUP-1	Total/NA	Water	9012B	
MB 680-454624/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-454624/2-A	Lab Control Sample	Total/NA	Water	9012B	
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	9012B	
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	9012B	

Analysis Batch: 454717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130852-1	LFM-99-05A	Total/NA	Water	9012B	454624
680-130852-2	LFM-99-02B	Total/NA	Water	9012B	454624
680-130852-3	LFM-99-06A-RP	Total/NA	Water	9012B	454624
680-130852-4	DUP-1	Total/NA	Water	9012B	454624
MB 680-454624/1-A	Method Blank	Total/NA	Water	9012B	454624
LCS 680-454624/2-A	Lab Control Sample	Total/NA	Water	9012B	454624
680-130852-3 MS	LFM-99-06A-RP	Total/NA	Water	9012B	454624
680-130852-3 MSD	LFM-99-06A-RP	Total/NA	Water	9012B	454624

Client Sample ID: LFM-99-05A

Date Collected: 10/12/16 11:20
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			938.8 mL	10 mL	453474	10/17/16 14:33	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1			453705	10/18/16 18:35	JCK	TAL SAV
	Instrument ID: CSGK									
Total/NA	Analysis	9056A		1	5 mL	5 mL	454374	10/22/16 14:26	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9056A		10	5 mL	5 mL	454530	10/24/16 14:05	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Prep	3010A			50 mL	50 mL	454041	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454382	10/21/16 16:34	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454038	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454476	10/21/16 19:56	BJB	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Prep	7470A			50 mL	50 mL	453682	10/18/16 10:14	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454013	10/19/16 13:25	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	347649	10/21/16 17:05	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	347863	10/24/16 11:31	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	454624	10/25/16 06:20	DAM	TAL SAV
Total/NA	Analysis	9012B		1			454717	10/25/16 11:48	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1			347182	10/18/16 18:19	CCJ	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	347215	10/19/16 10:25	JAP	TAL DEN
	Instrument ID: NOEQUIP									

Client Sample ID: LFM-99-02B

Date Collected: 10/12/16 14:25
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			967.1 mL	10 mL	453838	10/19/16 15:18	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1			454108	10/21/16 01:53	GEM	TAL SAV
	Instrument ID: CSGZ									
Total/NA	Analysis	9056A		1	5 mL	5 mL	454374	10/22/16 15:01	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9056A		10	5 mL	5 mL	454530	10/24/16 14:22	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Prep	3010A			50 mL	50 mL	454041	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454382	10/21/16 16:50	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454038	10/20/16 09:51	AJR	TAL SAV

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Landfill

TestAmerica Job ID: 680-130852-1

Client Sample ID: LFM-99-02B

Date Collected: 10/12/16 14:25
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1			454476	10/21/16 19:58	BJB	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Prep	7470A			50 mL	50 mL	453682	10/18/16 10:14	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454013	10/19/16 13:30	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	347649	10/21/16 17:07	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	347863	10/24/16 11:31	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	454624	10/25/16 06:20	DAM	TAL SAV
Total/NA	Analysis	9012B		1			454717	10/25/16 11:49	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1			347182	10/18/16 18:25	CCJ	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	347215	10/19/16 10:25	JAP	TAL DEN
	Instrument ID: NOEQUIP									

Client Sample ID: LFM-99-06A-RP

Date Collected: 10/13/16 08:50
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			984.5 mL	10 mL	453474	10/17/16 14:33	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1			453705	10/18/16 19:06	JCK	TAL SAV
	Instrument ID: CSGK									
Total/NA	Analysis	9056A		1	5 mL	5 mL	454374	10/22/16 15:36	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9056A		25	5 mL	5 mL	454530	10/24/16 12:20	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Prep	3010A			50 mL	50 mL	454041	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454382	10/21/16 16:55	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454038	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454476	10/21/16 20:01	BJB	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Prep	7470A			50 mL	50 mL	453682	10/18/16 10:14	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454013	10/19/16 13:34	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	347649	10/21/16 17:11	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	347863	10/24/16 11:31	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	454624	10/25/16 06:20	DAM	TAL SAV

Client Sample ID: LFM-99-06A-RP

Date Collected: 10/13/16 08:50
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9012B		1			454717	10/25/16 11:51	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1			347182	10/18/16 18:30	CCJ	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	347402	10/20/16 11:24	JAP	TAL DEN
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-1

Date Collected: 10/13/16 11:00
Date Received: 10/14/16 09:40

Lab Sample ID: 680-130852-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			986.8 mL	10 mL	453474	10/17/16 14:33	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1			453899	10/19/16 16:50	JCK	TAL SAV
	Instrument ID: CSGZ									
Total/NA	Analysis	9056A		1	5 mL	5 mL	454374	10/22/16 17:55	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9056A		10	5 mL	5 mL	454530	10/24/16 14:40	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Prep	3010A			50 mL	50 mL	454041	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454382	10/21/16 17:21	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454038	10/20/16 09:51	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454476	10/21/16 20:13	BJB	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Prep	7470A			50 mL	50 mL	453682	10/18/16 10:14	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454013	10/19/16 13:48	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	353.2		1	100 mL	100 mL	347649	10/21/16 17:09	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	410.4		1	2 mL	2 mL	347863	10/24/16 11:31	CCJ	TAL DEN
	Instrument ID: WC_Genesys20									
Total/NA	Prep	9012B			50 mL	50 mL	454624	10/25/16 06:20	DAM	TAL SAV
Total/NA	Analysis	9012B		1			454717	10/25/16 11:56	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	SM 2320B		1			347182	10/18/16 18:35	CCJ	TAL DEN
	Instrument ID: WC_AT2									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	347402	10/20/16 11:24	JAP	TAL DEN
	Instrument ID: NOEQUIP									

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MassDEP Analytical Protocol Certification Form

Laboratory Name: Katahdin Analytical Services, LLC. Project #:

Project Location: RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
SJ8461-1, 2, 3, 4, 5

Matrices: √ Groundwater/Surface Water Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A √	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B √	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	(Yes) No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	(Yes) No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	(Yes) No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	(Yes) No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	(Yes) No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	(Yes) No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	(Yes) No[1]

***Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (No[1])
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	(Yes) No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Leslie Dimond **Position:** Q.A. Officer

Printed Name: Leslie Dimond **Date:** 10/26/2016

October 26, 2016

Mr. Jerry Lanier
Test America Savannah
5102 LaRoche Avenue
Savannah,GA 31404

RE: Katahdin Lab Number: SJ8461
Project ID: Fort Devens/DCL
Project Manager: Ms. Jennifer Obrin
Sample Receipt Date(s): October 14, 2016

Dear Mr. Lanier:

Please find enclosed the following information:

* Report of Analysis (Analytical and/or Field)
* Quality Control Data Summary
* Chain of Custody (COC)
* Login Report

A copy of the Chain of Custody is included in the paginated report. The original COC is attached as an addendum to this report.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. The results contained in this report relate only to the submitted samples. This cover letter is an integral part of the ROA.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in an attached technical narrative or in the Report of Analysis.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Please go to http://www.katahdinlab.com/cert.html for copies of Katahdin Analytical Services Inc. current certificates and analyte lists.

Sincerely,
KATAHDIN ANALYTICAL SERVICES

Jessie Dimond

Authorized Signature

10/26/2016

Date

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TEST AMERICA SAVANNAH
FORT DEVENS/DCL
SJ8461

Sample Receipt

The following samples were received on October 14, 2016 and were logged in under Katahdin Analytical Services work order number SJ8461 for a hardcopy due date of October 26, 2016.

KATAHDIN Sample No.	TEST AMERICA SAVANNAH Sample Identification
SJ8461-1	LFM-99-05A
SJ8461-2	LFM-99-02B
SJ8461-3	LFM-99-06A-RP
SJ8461-4	DUP-01
SJ8461-5	TRIP BLANK

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SJ8461 were analyzed in accordance with Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MADEP, May 2004, Revision 1.1, and/or Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MADEP, May 2004, Revision 1.1, and/or for the specific methods listed below or on the Report of Analysis.

MA-VPH Analysis

All samples were manually integrated for the surrogate 2,5-dibromotoluene on the PID and FID. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The opening calibration verification standard (CV) had a high response for the surrogate 2,5-dibromotoluene on the FID, which resulted in a %D that was above the method acceptance limit of 25%.

MA-EPH Analysis

There were no protocol deviations or observations noted by the organics laboratory for this analysis.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
10.26.16

Leslie Dimond
Quality Assurance Officer

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-1
Client ID: LFM-99-05A
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: CJJ2080.D

Sample Date: 12-OCT-16
Received Date: 14-OCT-16
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	110	ug/L	1	100	110	54.	81.
C9-C18 Aliphatics	U	110	ug/L	1	100	110	54.	81.
C19-C36 Aliphatics	U	110	ug/L	1	100	110	54.	81.
C11-C22 Aromatics	U	110	ug/L	1	100	110	54.	81.
Naphthalene		3.2	ug/L	1	2	2.2	0.97	1.6
2-Methylnaphthalene	U	2.2	ug/L	1	2	2.2	0.86	1.6
Phenanthrene	U	2.2	ug/L	1	2	2.2	0.97	1.6
Acenaphthylene	U	2.2	ug/L	1	2	2.2	0.86	1.6
Acenaphthene	U	2.2	ug/L	1	2	2.2	1.9	2.0
Anthracene	U	2.2	ug/L	1	2	2.2	1.5	1.6
Benzo(a)anthracene	U	2.2	ug/L	1	2	2.2	1.5	1.6
Benzo(a)pyrene	U	2.2	ug/L	1	2	2.2	1.4	1.6
Benzo(b)fluoranthene	U	2.2	ug/L	1	2	2.2	0.86	1.6
Benzo(g,h,i)perylene	U	2.2	ug/L	1	2	2.2	1.4	1.6
Benzo(k)fluoranthene	U	2.2	ug/L	1	2	2.2	1.1	1.6
Chrysene	U	2.2	ug/L	1	2	2.2	0.97	1.6
Dibenzo(a,h)anthracene	U	2.2	ug/L	1	2	2.2	1.3	1.6
Fluoranthene	U	2.2	ug/L	1	2	2.2	0.86	1.6
Fluorene	U	2.2	ug/L	1	2	2.2	0.97	1.6
Indeno(1,2,3-cd)pyrene	U	2.2	ug/L	1	2	2.2	1.5	1.6
Pyrene	U	2.2	ug/L	1	2	2.2	1.2	1.6
5-Alpha Androstane		66.4	%					
o-Terphenyl		70.4	%					
2-Fluorobiphenyl		78.4	%					
2-Bromonaphthalene		77.1	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-2
Client ID: LFM-99-02B
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: CJJ2081.D

Sample Date: 12-OCT-16
Received Date: 14-OCT-16
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	110	ug/L	1	100	110	57.	85.
C9-C18 Aliphatics	U	110	ug/L	1	100	110	57.	85.
C19-C36 Aliphatics	U	110	ug/L	1	100	110	57.	85.
C11-C22 Aromatics	U	110	ug/L	1	100	110	57.	85.
Naphthalene	U	2.3	ug/L	1	2	2.3	1.0	1.7
2-Methylnaphthalene	U	2.3	ug/L	1	2	2.3	0.91	1.7
Phenanthrene	U	2.3	ug/L	1	2	2.3	1.0	1.7
Acenaphthylene	U	2.3	ug/L	1	2	2.3	0.91	1.7
Acenaphthene	U	2.3	ug/L	1	2	2.3	2.0	2.2
Anthracene	U	2.3	ug/L	1	2	2.3	1.6	1.7
Benzo(a)anthracene	U	2.3	ug/L	1	2	2.3	1.6	1.7
Benzo(a)pyrene	U	2.3	ug/L	1	2	2.3	1.5	1.7
Benzo(b)fluoranthene	U	2.3	ug/L	1	2	2.3	0.91	1.7
Benzo(g,h,i)perylene	U	2.3	ug/L	1	2	2.3	1.5	1.7
Benzo(k)fluoranthene	U	2.3	ug/L	1	2	2.3	1.1	1.7
Chrysene	U	2.3	ug/L	1	2	2.3	1.0	1.7
Dibenzo(a,h)anthracene	U	2.3	ug/L	1	2	2.3	1.4	1.7
Fluoranthene	U	2.3	ug/L	1	2	2.3	0.91	1.7
Fluorene	U	2.3	ug/L	1	2	2.3	1.0	1.7
Indeno(1,2,3-cd)pyrene	U	2.3	ug/L	1	2	2.3	1.6	1.7
Pyrene	U	2.3	ug/L	1	2	2.3	1.2	1.7
5-Alpha Androstane		60.1	%					
o-Terphenyl		70.5	%					
2-Fluorobiphenyl		79.5	%					
2-Bromonaphthalene		79.1	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-3
Client ID: LFM-99-06A-RP
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: CJJ2082.D

Sample Date: 13-OCT-16
Received Date: 14-OCT-16
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	100	ug/L	1	100	100	51.	76.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	51.	76.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	51.	76.
C11-C22 Aromatics	U	100	ug/L	1	100	100	51.	76.
Naphthalene	U	2.0	ug/L	1	2	2.0	0.92	1.5
2-Methylnaphthalene	U	2.0	ug/L	1	2	2.0	0.82	1.5
Phenanthrene	U	2.0	ug/L	1	2	2.0	0.92	1.5
Acenaphthylene	U	2.0	ug/L	1	2	2.0	0.82	1.5
Acenaphthene	U	2.0	ug/L	1	2	2.0	1.8	1.9
Anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)pyrene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(b)fluoranthene	U	2.0	ug/L	1	2	2.0	0.82	1.5
Benzo(g,h,i)perylene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(k)fluoranthene	U	2.0	ug/L	1	2	2.0	1.0	1.5
Chrysene	U	2.0	ug/L	1	2	2.0	0.92	1.5
Dibenzo(a,h)anthracene	U	2.0	ug/L	1	2	2.0	1.2	1.5
Fluoranthene	U	2.0	ug/L	1	2	2.0	0.82	1.5
Fluorene	U	2.0	ug/L	1	2	2.0	0.92	1.5
Indeno(1,2,3-cd)pyrene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Pyrene	U	2.0	ug/L	1	2	2.0	1.1	1.5
5-Alpha Androstane		51.5	%					
o-Terphenyl		59.9	%					
2-Fluorobiphenyl		69.8	%					
2-Bromonaphthalene		69.6	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-4
Client ID: DUP-01
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: CJJ2083.D

Sample Date: 13-OCT-16
Received Date: 14-OCT-16
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	100	ug/L	1	100	100	53.	79.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	53.	79.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	53.	79.
C11-C22 Aromatics	U	100	ug/L	1	100	100	53.	79.
Naphthalene	U	2.1	ug/L	1	2	2.1	0.95	1.6
2-Methylnaphthalene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Phenanthrene	U	2.1	ug/L	1	2	2.1	0.95	1.6
Acenaphthylene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Acenaphthene	U	2.1	ug/L	1	2	2.1	1.9	2.0
Anthracene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Benzo(a)anthracene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Benzo(a)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(b)fluoranthene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Benzo(g,h,i)perylene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(k)fluoranthene	U	2.1	ug/L	1	2	2.1	1.0	1.6
Chrysene	U	2.1	ug/L	1	2	2.1	0.95	1.6
Dibenzo(a,h)anthracene	U	2.1	ug/L	1	2	2.1	1.3	1.6
Fluoranthene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Fluorene	U	2.1	ug/L	1	2	2.1	0.95	1.6
Indeno(1,2,3-cd)pyrene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Pyrene	U	2.1	ug/L	1	2	2.1	1.2	1.6
5-Alpha Androstane		64.0	%					
o-Terphenyl		57.3	%					
2-Fluorobiphenyl		69.5	%					
2-Bromonaphthalene		68.5	%					

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL
Lab File ID : CJJ1075.D
Instrument ID : GC12

SDG : SJ8461
Lab Sample ID : WG192784-1
Date Analyzed : 18-OCT-16
Time Analyzed : 13:40
Date Extracted : 17-OCT-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG192784-2	CJJ1076.D	10/18/16	14:25
Laboratory Control S	WG192784-3	CJJ1077.D	10/18/16	15:11
Matrix Spike	WG192784-4	CJJ1078.D	10/18/16	15:56
Matrix Spike Duplica	WG192784-5	CJJ1079.D	10/18/16	16:42
LFM-99-05A	SJ8461-1	CJJ1080.D	10/18/16	17:28
LFM-99-02B	SJ8461-2	CJJ1081.D	10/18/16	18:13
LFM-99-06A-RP	SJ8461-3	CJJ1082.D	10/18/16	18:59
DUP-01	SJ8461-4	CJJ1083.D	10/18/16	19:44

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL
Lab File ID : CJJ1075A.D
Instrument ID : GC12

SDG : SJ8461
Lab Sample ID : WG192784-1
Date Analyzed : 18-OCT-16
Time Analyzed : 13:40
Date Extracted : 17-OCT-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG192784-2	CJJ1076A.I	10/18/16	14:25
Laboratory Control S	WG192784-3	CJJ1077A.I	10/18/16	15:11
Matrix Spike	WG192784-4	CJJ1078A.I	10/18/16	15:56
Matrix Spike Duplica	WG192784-5	CJJ1079A.I	10/18/16	16:42
LFM-99-05A	SJ8461-1	CJJ1080A.I	10/18/16	17:28
LFM-99-02B	SJ8461-2	CJJ1081A.I	10/18/16	18:13
LFM-99-06A-RP	SJ8461-3	CJJ1082A.I	10/18/16	18:59
DUP-01	SJ8461-4	CJJ1083A.I	10/18/16	19:44

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL
Lab File ID : CJJ2075.D
Instrument ID : GC12

SDG : SJ8461
Lab Sample ID : WG192784-1
Date Analyzed : 18-OCT-16
Time Analyzed : 13:40
Date Extracted : 17-OCT-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG192784-2	CJJ2076.D	10/18/16	14:25
Laboratory Control S	WG192784-3	CJJ2077.D	10/18/16	15:11
Matrix Spike	WG192784-4	CJJ2078.D	10/18/16	15:56
Matrix Spike Duplica	WG192784-5	CJJ2079.D	10/18/16	16:42
LFM-99-05A	SJ8461-1	CJJ2080.D	10/18/16	17:28
LFM-99-02B	SJ8461-2	CJJ2081.D	10/18/16	18:13
LFM-99-06A-RP	SJ8461-3	CJJ2082.D	10/18/16	18:59
DUP-01	SJ8461-4	CJJ2083.D	10/18/16	19:44

Report of Analytical Results

Client:
Lab ID: WG192784-1
Client ID: Method Blank Sample
Project:
SDG: SJ8461
Lab File ID: CJJ2075.D

Sample Date:
Received Date:
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	100	ug/L	1	100	100	50.	75.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	50.	75.
C11-C22 Aromatics	U	100	ug/L	1	100	100	50.	75.
Naphthalene	U	2.0	ug/L	1	2	2.0	0.90	1.5
2-Methylnaphthalene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Phenanthrene	U	2.0	ug/L	1	2	2.0	0.90	1.5
Acenaphthylene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Acenaphthene	U	2.0	ug/L	1	2	2.0	1.8	1.9
Anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)anthracene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Benzo(a)pyrene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(b)fluoranthene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Benzo(g,h,i)perylene	U	2.0	ug/L	1	2	2.0	1.3	1.5
Benzo(k)fluoranthene	U	2.0	ug/L	1	2	2.0	1.0	1.5
Chrysene	U	2.0	ug/L	1	2	2.0	0.90	1.5
Dibenzo(a,h)anthracene	U	2.0	ug/L	1	2	2.0	1.2	1.5
Fluoranthene	U	2.0	ug/L	1	2	2.0	0.80	1.5
Fluorene	U	2.0	ug/L	1	2	2.0	0.90	1.5
Indeno(1,2,3-cd)pyrene	U	2.0	ug/L	1	2	2.0	1.4	1.5
Pyrene	U	2.0	ug/L	1	2	2.0	1.1	1.5
5-Alpha Androstane		62.4	%					
o-Terphenyl		64.4	%					
2-Fluorobiphenyl		72.9	%					
2-Bromonaphthalene		67.9	%					

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LCS/LCSD Recovery Report

LCS ID: WG192784-2
LCSD ID: WG192784-3
Project:
SDG: SJ8461
Report Date: 24-OCT-16
LCS File ID: CJJ2076.D

Received Date:
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784
LCSD File ID: CJJ1077A.d

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Unadjusted C11-C22 Aromatics	1530	1200	78.4	1060	69.3	ug/L	12	25	40-140
C9-C18 Aliphatics	540.	365.	67.6	394.	73.0	ug/L	8	25	40-140
C19-C36 Aliphatics	720.	609.	84.6	633.	87.9	ug/L	4	25	40-140
Naphthalene	90.0	58.6	65.1	54.6	60.7	ug/L	7	25	40-140
2-Methylnaphthalene	90.0	58.9	65.4	51.2	56.9	ug/L	14	25	40-140
Phenanthrene	90.0	65.3	72.6	57.2	63.6	ug/L	13	25	40-140
Acenaphthylene	90.0	58.9	65.4	54.6	60.7	ug/L	8	25	40-140
Acenaphthene	90.0	61.2	68.0	56.8	63.1	ug/L	7	25	40-140
Anthracene	90.0	71.6	79.6	62.4	69.3	ug/L	14	25	40-140
Benzo(a)anthracene	90.0	75.3	83.7	65.5	72.8	ug/L	14	25	40-140
Benzo(a)pyrene	90.0	75.7	84.1	65.5	72.8	ug/L	14	25	40-140
Benzo(b)fluoranthene	90.0	71.4	79.3	64.0	71.1	ug/L	11	25	40-140
Benzo(g,h,i)perylene	90.0	77.4	86.0	67.6	75.1	ug/L	14	25	40-140
Benzo(k)fluoranthene	90.0	79.8	88.7	66.6	74.0	ug/L	18	25	40-140
Chrysene	90.0	76.4	84.9	66.4	73.8	ug/L	14	25	40-140
Dibenzo(a,h)anthracene	90.0	81.5	90.6	69.5	77.2	ug/L	16	25	40-140
Fluoranthene	90.0	74.0	82.2	63.3	70.3	ug/L	16	25	40-140
Fluorene	90.0	60.7	67.4	55.0	61.1	ug/L	10	25	40-140
Indeno(1,2,3-cd)pyrene	90.0	72.7	80.8	64.9	72.1	ug/L	11	25	40-140
Pyrene	90.0	73.9	82.1	63.6	70.7	ug/L	15	25	40-140
5-Alpha Androstane			68.7		77.0				40-140
o-Terphenyl			76.3		66.2				40-140
2-Fluorobiphenyl			83.7		68.4				40-140
2-Bromonaphthalene			79.1		67.3				40-140

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MS/MSD Recovery Report

MS ID: WG192784-4
MSD ID: WG192784-5
Sample ID: SJ8461-3
Client ID: LFM-99-06A-RP
Project:
SDG: SJ8461
MS File ID: CJJ2078.D

Received Date:
Extract Date: 17-OCT-16
Extracted By: WAS
Extraction Method: SW846 3510
Lab Prep Batch: WG192784
Report Date: 24-OCT-16
MSD File ID: CJJ1079A.d

Analysis Date: 18-OCT-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Unadjusted C11-C22 Aromatics	1660	1640	ug/L	U100	1260	1200	75.8	72.9	5	25	40-140
C9-C18 Aliphatics	587.	581.	ug/L	U100	420	411	71.6	70.8	2	25	40-140
C19-C36 Aliphatics	783.	774.	ug/L	U100	673	703	86.0	90.8	4	25	40-140
Naphthalene	97.8	96.8	ug/L	U2.0	65.4	60.2	66.8	62.2	8	25	40-140
2-Methylnaphthalene	97.8	96.8	ug/L	U2.0	65.2	60.9	66.6	62.9	7	25	40-140
Phenanthrene	97.8	96.8	ug/L	U2.0	69.1	66.2	70.6	68.4	4	25	40-140
Acenaphthylene	97.8	96.8	ug/L	U2.0	65.1	61.4	66.5	63.4	6	25	40-140
Acenaphthene	97.8	96.8	ug/L	U2.0	67.9	64.3	69.4	66.4	5	25	40-140
Anthracene	97.8	96.8	ug/L	U2.0	74.3	71	76.0	73.4	4	25	40-140
Benzo(a)anthracene	97.8	96.8	ug/L	U2.0	77.1	72.5	78.8	74.9	6	25	40-140
Benzo(a)pyrene	97.8	96.8	ug/L	U2.0	78	73.3	79.7	75.7	6	25	40-140
Benzo(b)fluoranthene	97.8	96.8	ug/L	U2.0	74.8	73.4	76.5	75.8	2	25	40-140
Benzo(g,h,i)perylene	97.8	96.8	ug/L	U2.0	79.5	75.6	81.3	78.1	5	25	40-140
Benzo(k)fluoranthene	97.8	96.8	ug/L	U2.0	79.6	72	81.4	74.4	10	25	40-140
Chrysene	97.8	96.8	ug/L	U2.0	78.4	74.2	80.1	76.7	6	25	40-140
Dibenzo(a,h)anthracene	97.8	96.8	ug/L	U2.0	82.2	76.6	84.0	79.2	7	25	40-140
Fluoranthene	97.8	96.8	ug/L	U2.0	75.9	71.9	77.6	74.3	5	25	40-140
Fluorene	97.8	96.8	ug/L	U2.0	66.5	64.1	68.0	66.2	4	25	40-140
Indeno(1,2,3-cd)pyrene	97.8	96.8	ug/L	U2.0	76.2	73	77.9	75.4	4	25	40-140
Pyrene	97.8	96.8	ug/L	U2.0	76.2	72	77.9	74.4	6	25	40-140
5-Alpha Androstane							73.6	73.1			40-140
o-Terphenyl							70.6	67.0			40-140
2-Fluorobiphenyl							78.3	74.7			40-140
2-Bromonaphthalene							77.3	73.3			40-140

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-1
Client ID: LFM-99-05A
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: 2JJ10120.D

Sample Date: 12-OCT-16
Received Date: 14-OCT-16
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	J	1.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		104.	%				
2,5-Dibromotoluene (PID)		98.2	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-2
Client ID: LFM-99-02B
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: 2JJ10121.D

Sample Date: 12-OCT-16
Received Date: 14-OCT-16
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	J	0.40	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		107.	%				
2,5-Dibromotoluene (PID)		100.	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-3
Client ID: LFM-99-06A-RP
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: 2JJ10122.D

Sample Date: 13-OCT-16
Received Date: 14-OCT-16
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		95.0	%				
2,5-Dibromotoluene (PID)		91.5	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-4
Client ID: DUP-01
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: 2JJ10123.D

Sample Date: 13-OCT-16
Received Date: 14-OCT-16
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	J	0.41	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		106.	%				
2,5-Dibromotoluene (PID)		98.0	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8461-5
Client ID: TRIP BLANK
Project: Fort Devens/DCL
SDG: SJ8461
Lab File ID: 2JJ10124.D

Sample Date: 13-OCT-16
Received Date: 14-OCT-16
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		102.	%				
2,5-Dibromotoluene (PID)		99.6	%				

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL
Lab File ID : 2JJ10115.D
Instrument ID : GC02

SDG : SJ8461
Lab Sample ID : WG192618-1RA2
Date Analyzed : 14-OCT-16
Time Analyzed : 16:03
Date Extracted : 14-OCT-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG192618-2	2JJ10108.D	10/14/16	09:24
Laboratory Control S	WG192618-3	2JJ10109.D	10/14/16	10:05
LFM-99-05A	SJ8461-1	2JJ10120.D	10/14/16	20:07
LFM-99-02B	SJ8461-2	2JJ10121.D	10/14/16	20:49
LFM-99-06A-RP	SJ8461-3	2JJ10122.D	10/14/16	21:30
DUP-01	SJ8461-4	2JJ10123.D	10/14/16	22:11
TRIP BLANK	SJ8461-5	2JJ10124.D	10/14/16	22:53
Matrix Spike	WG192618-4	2JJ10125.D	10/14/16	23:34
Matrix Spike Duplica	WG192618-5	2JJ10126.D	10/15/16	00:17

Report of Analytical Results

Client:
Lab ID: WG192618-1RA2
Client ID: Method Blank Sample
Project:
SDG: SJ8461
Lab File ID: 2JJ10115.D

Sample Date:
Received Date:
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		129.	%				
2,5-Dibromotoluene (PID)		115.	%				

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG192618-2
LCSD ID: WG192618-3
Project:
SDG: SJ8461
Report Date: 21-OCT-16
LCS File ID: 2JJ10108.D

Received Date:
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618
LCSD File ID: 2JJ10109.D

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
C5-C8 Aliphatics	300.	350.	117.	334.	111.	ug/L	5	25	70-130
C9-C12 Aliphatics	200.	218.	109.	211.	106.	ug/L	3	25	70-130
C9-C10 Aromatics	100.	106.	106.	104.	104.	ug/L	2	25	70-130
Benzene	100.	95.7	95.7	95.9	95.9	ug/L	0	25	70-130
Ethylbenzene	100.	94.8	94.8	95.1	95.1	ug/L	0	25	70-130
Methyl tert-butylether	100.	104.	104.	101.	101.	ug/L	3	25	70-130
Naphthalene	100.	110.	110.	99.3	99.3	ug/L	10	25	70-130
Toluene	100.	96.7	96.7	96.7	96.7	ug/L	0	25	70-130
m+p-Xylenes	200.	185.	92.5	186.	93.0	ug/L	0	25	70-130
o-Xylene	100.	99.2	99.2	99.3	99.3	ug/L	0	25	70-130
2,5-Dibromotoluene (FID)			122.		96.2				70-130
2,5-Dibromotoluene (PID)			115.		92.8				70-130

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MS/MSD Recovery Report

MS ID: WG192618-4
MSD ID: WG192618-5
Sample ID: SJ8461-3
Client ID: LFM-99-06A-RP
Project:
SDG: SJ8461
MS File ID: 2JJ10125.D

Received Date:
Extract Date: 14-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192618
Report Date: 21-OCT-16
MSD File ID: 2JJ10126.D

Analysis Date: 14-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
C5-C8 Aliphatics	300.	300.	ug/L	U100	300	348	100.	116.	15	50	70-130
C9-C12 Aliphatics	200.	200.	ug/L	U100	176	196	88.0	98.0	11	50	70-130
C9-C10 Aromatics	100.	100.	ug/L	U100	92.8	103	92.8	103.	10	50	70-130
Benzene	100.	100.	ug/L	U3.0	90.7	101	90.7	101.	11	50	70-130
Ethylbenzene	100.	100.	ug/L	U5.0	88.4	98.5	88.4	98.5	11	50	70-130
Methyl tert-butylether	100.	100.	ug/L	U5.0	95.9	108	95.9	108.	12	50	70-130
Naphthalene	100.	100.	ug/L	U5.0	84.9	101	84.9	101.	17	50	70-130
Toluene	100.	100.	ug/L	U5.0	91.3	101	91.3	101.	10	50	70-130
m+p-Xylenes	200.	200.	ug/L	U10	173	192	86.5	96.0	10	50	70-130
o-Xylene	100.	100.	ug/L	U5.0	91.6	102	91.6	102.	11	50	70-130
2,5-Dibromotoluene (FID)							97.8	115.			70-130
2,5-Dibromotoluene (PID)							89.0	110.			70-130

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin Analytical Services, LLC. — Sample Receipt Condition Report

Client: TA - Westfield	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: Fedex
KAS Work Order#: SJ8461	KIMS Review By: JO	Received By: SO
SDG #:	Cooler: 1 of 2	Date/Time Rec.: 10-14-16 900

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): -0.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. — Sample Receipt Condition Report

Client: TA - Westfield	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: Fedex
KAS Work Order#: 558961	KIMS Review By: JO	Received By: SO
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 10-14-16 900

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?					
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.					Temp (°C): 1.9
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?					
Soil/Sediment: Received in airtight container?					
Received in methanol?					
Methanol covering soil?					
D.I. Water - Received within 48 hour HT?					
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?					
8. Proper sample containers and volume?					
9. Samples within hold time upon receipt?					
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2					
Sulfide - >9					
Cyanide – pH >12					

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

TestAmerica Westfield
501 Southampton Road
Westfield MA 01085
Phone: (413) 572-4000 Fax: (303) 467-7247

SJ8461

TestAmerica Boston
240 Bear Hill Road -- Suite 104
Waltham MA 02451
Phone: (781) 466-6900 Fax: (781) 466-6901

360325 Boston

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information:

Client Contact: Laurie Ekes
Company: Kenn Government Solutions, LLC
Address: 160 E. Main St, Suite 2F
City: Westborough
State and Zip: MA, 01581
Client's Phone:
Client's Contact Email: lekes@kennings.com
Client's Project Name/Number: Fort Devens / DCL
Sample Collection Site Name & Location:

Sample Collector's Name (Please Print Neatly): Kevin L. Anderson
Sample Collector's Phone:
Lab PM:
E-Mail:
Lab COC Barcode Label

COC No: 37072
Page: ___ of ___
Job #:

Due Date Requested:
Turnaround Time (TAT) Requested (business days):
Quote # or Project #:
PO #:
WO #:
PWS ID #:

Preservation Codes:
A - Hydrochloric Acid
B - Sodium Hydroxide
C - Zinc Acetate
D - Nitric Acid
E - Sodium Bisulfite
F - Methanol
H - Ascorbic Acid
J - Deionized Water
M - Hexane
N - No Preservative
P - Sodium Sulfate
Q - Sodium Sulfite
R - Sodium Thiosulfate
S - Sulfuric Acid
Z - other (specify)

Regulatory Programs:
MCP ☐ GW1/S1 ☐
RCP ☐ CT RSR ☐
DEP Form ☐ EDD Required ☐
eDEP Filing ☐ NPDES ☐

SUBCONTRACT POLICY: Unless you provide instructions to the contrary, or specify which sub-contract labs are or are not to be used, you agree in advance to permit TestAmerica to use certified, subcontract labs, without any additional notification made by us, as necessary to fulfill your work order.

Analysis Requested

Sample Identification	Sample Collection Date (MM/DD/YY)	Sample Collection Time (24 Hour Clock)	Sample Type: C=Comp G=Grab	Matrix Type **	VPH	EPH	Pesticides	Total Metals	TDS, Anions, Alkalinity	Cyanide (Total)	COD	PCBs	Nitrate / Nitrite	Total Number of Containers (enter total for each line)	Special Instructions & Notes:
LFM-99-05A	10/12/16	1120	G	GW	X	X	X	X	X	X	X	X	X		
LFM-99-02B	10/12/16	1425	G	GW	X	X	X	X	X	X	X	X	X		
LFM-99-06A-RP	10/13/16	850	G	GW	X	X	X	X	X	X	X	X	X		MS/MSD collected ☆
DUP-1	10/13/16	1100	G	GW	X	X	X	X	X	X	X	X	X		

Preservation Codes =>

Possible Hazard Identification (please check off each that may apply):
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal Requirements (A fee may be assessed if samples are retained longer than 1 month):
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

NOTE!! ALL SAMPLES MUST BE TRANSPORTED IN A COOLER, ON ICE !!

** Matrix Types: A=Air S=Solid/Soil W=Water O=Oil X=Waste (non-water) Z=Other: ___

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/13/16 1520	KGS	[signature]	10-13-16 1520	[illegible]
[signature]	10-13-16 1800		[signature]	10-14-16 / 08:50	KGS

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Revised 10/29/2014
TAL-8245-360R

WI-QA-010 rev 8

Katahdin Analytical Services SJ8926 page 0000026 of 0000029

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Oct. 14, 2016
03:28 PM

Login Number: SJ8461

Account: TASAV001
Test America Savannah

Project: TASAV-DEVENS

NoWeb

Quote/Incoming:

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL. "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-130852
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	-0.7, 1.9
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	GN
PM	:	JO
PROJECT NAME	:	Fort Devens/DCL
QC LEVEL	:	II
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8461-1	LFM-99-05A	12-OCT-16 11:20	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	26-OCT-16	1L N-Amber Glass		
Aqueous	S	MA-VPH	26-OCT-16	40mL Vial+HCl		

SJ8461-2	LFM-99-02B	12-OCT-16 14:25	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	26-OCT-16	1L N-Amber Glass		
Aqueous	S	MA-VPH	26-OCT-16	40mL Vial+HCl		

SJ8461-3	LFM-99-06A-RP	13-OCT-16 08:50	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	27-OCT-16	1L N-Amber Glass		MS/MSD
Aqueous	S	MA-VPH	27-OCT-16	40mL Vial+HCl		

SJ8461-4	DUP-01	13-OCT-16 11:00	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	27-OCT-16	1L N-Amber Glass		
Aqueous	S	MA-VPH	27-OCT-16	40mL Vial+HCl		

SJ8461-5	TRIP BLANK	13-OCT-16 00:00	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	27-OCT-16	40mL Vial+HCl		

SJ8461-6	LFM-99-06A-RPMS	13-OCT-16 08:50	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	27-OCT-16			MS charge, not a sample.
Aqueous	S	MA-VPH	27-OCT-16			

SJ8461-7	LFM-99-06A-RPMSD	13-OCT-16 08:50	14-OCT-16			26-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	27-OCT-16			MSD charge, not a sample.
Aqueous	S	MA-VPH	27-OCT-16			

10.14.16

Login Number: SJ8461

Account: TASAV001

Test America Savannah

Project: TASAV-DEVENS

Quote/Incoming:

NoWeb

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed

Total Samples: *7* ***Total Analyses:*** *13*

10.14.16

TestAmerica Westfield
501 Southampton Road
Westfield MA 01085
Phone: (413) 572-4000 Fax: (303) 467-7247

TestAmerica Boston
240 Bear Hill Road -- Suite 104
Waltham MA 02451
Phone: (781) 466-6900 Fax: (781) 466-6901

Chain of Custody Record

360325 Boston

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Client Information:	Sample Collector's Name (Please Print Neatly):	Lab PM:	Lab COC Barcode Label	COC No: 37072
Client Contact: Laurie Ekes	Sample Collector's Phone:	E-Mail:		Page: ____ of ____
Company: Kleinfelder Solutions, LLC				Job #:
Address: 160 E. Main St, Suite 2F	Due Date Requested:			
City: Westborough	Turnaround Time (TAT) Requested (business days):			
State and Zip: MA, 01581				
Client's Phone:	Quote # or Project #:			
Client's Contact Email: lekes@kleinfelder.com	PO #:			
Client's Project Name/Number: Fort Devens / DCL [illegible]	WO #:			
Sample Collection Site Name & Location:	PWS ID #:			

Analysis Requested

Preservation Codes:
A - Hydrochloric Acid; B - Sodium Hydroxide; C - Zinc Acetate; D - Nitric Acid; E - Sodium Bisulfite; F - Methanol; H - Ascorbic Acid; J - Deionized Water; M - Hexane; N - No Preservative; P - Sodium Sulfate; Q - Sodium Sulfite; R - Sodium Thiosulfate; S - Sulfuric Acid; Z - other (specify)

Regulatory Programs: MCP ☐ RCP ☐ DEP Form ☐ eDEP Filing ☐ GW1/S1 ☐ CT RSR ☐ EDD Required ☐ NPDES ☐

SUBCONTRACT POLICY: Unless you provide instructions to the contrary, or specify which sub-contract labs are or are not to be used, you agree in advance to permit Test America to use certified, subcontract labs, without any additional notification made by us, as necessary to fulfill your work order.

Sample Identification	Sample Collection Date (MM/DD/YY)	Sample Collection Time (24 Hour Clock)	Sample Type: C=Comp G=Grab	Matrix Type **	VPH	EPH	Pesticides	Total Metals	TDS, Anions, Alkalinity	Cyanide (Total)	COD	PCBs	Nitrate / Nitrite	Total Number of Containers (enter total for each line)	Special Instructions & Notes:
Preservation Codes =>														↓	
LFM-99-05A	10/12/16	1120	G	GW	X	X	X	X	X	X	X	X	X		
LFM-99-02B	10/12/16	1425	G	GW	X	X	X	X	X	X	X	X	X		
LFM-99-06A-RP	10/13/16	850	G	GW	X	X	X	X	X	X	X	X	X		MS/MSD collected ★
DUP-1	10/13/16	1100	G	GW	X	X	X	X	X	X	X	X	X		
															3.8/3.9 1.4/1.5
															3.0/3.1 0.8/0.9

680-130852 Chain of Custody

Possible Hazard Identification (please check off each that may apply): ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal Requirements (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

** **Matrix Types**: A=Air S=Solid/Soil W=Water O=Oil X=Waste (non-water) Z=Other: ____

► NOTE!! ALL SAMPLES MUST BE TRANSPORTED IN A COOLER, ON ICE !! ◄

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/13/16 1520	KLF	[signature]	10-13-16 1520	TA
Relinquished by: [signature]	Date/Time: 10-13-16 1820	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 10-14-16 9:40	Company TA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-130852-1

Login Number: 130852
List Number: 1
Creator: Ragnaldsen, Amy E

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-130852-1

Login Number: 130852
List Number: 2
Creator: Pottruff, Reed W

List Source: TestAmerica Denver
List Creation: 10/15/16 03:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Landfill

TestAmerica Job ID: 680-130852-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-130949-1
Client Project/Site: Fort Devens / AOC43G

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
11/1/2016 5:42:10 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-130949-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Fort Devens / AOC43G

Report Number: 680-130949-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 10/18/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.7 C.

METALS (ICP)
Samples AAFES-2 (680-130949-1), XGM-94-04X (680-130949-2), XGM-93-02X (680-130949-3), XGM-97-12X (680-130949-4), AAFES-7 (680-130949-5) and 43G-DUP1 (680-130949-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/25/2016 and analyzed on 10/26/2016.

Several analytes failed the recovery criteria low for the MS of sample XGM-94-04XMS (680-130949-2) in batch 680-455089. Potassium failed the recovery criteria high.

Several analytes failed the recovery criteria low for the MSD of sample XGM-94-04XMSD (680-130949-2) in batch 680-455089.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples AAFES-2 (680-130949-1)[10X], XGM-94-04X (680-130949-2)[10X], XGM-93-02X (680-130949-3)[10X], XGM-97-12X (680-130949-4)[10X], AAFES-7 (680-130949-5)[10X] and 43G-DUP1 (680-130949-6)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS
Samples AAFES-2 (680-130949-1), XGM-94-04X (680-130949-2), XGM-93-02X (680-130949-3), XGM-97-12X (680-130949-4), AAFES-7 (680-130949-5) and 43G-DUP1 (680-130949-6) were analyzed for Metals in accordance with EPA SW-846 Method 6020. The samples were prepared on 10/25/2016 and analyzed on 10/25/2016 and 10/27/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples AAFES-2 (680-130949-1), XGM-94-04X (680-130949-2), XGM-93-02X (680-130949-3), XGM-97-12X (680-130949-4), AAFES-7 (680-130949-5) and 43G-DUP1 (680-130949-6) were analyzed for mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared on 10/20/2016 and analyzed on 10/24/2016.

Job ID: 680-130949-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples AAFES-2 (680-130949-1), XGM-94-04X (680-130949-2), XGM-93-02X (680-130949-3), XGM-97-12X (680-130949-4) and 43G-DUP1 (680-130949-6) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 10/20/2016.

The method blank for analytical batches 280-347523, and 280-347524 contained alkalinity above half the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Subcontract Work
Method MA VPH: This method was subcontracted to Katahdin Analytical Services Inc. The subcontract laboratory certification is different from that of the facility issuing the final report.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-130949-1	AAFES-2	Water	10/14/16 10:10	10/18/16 10:10
680-130949-2	XGM-94-04X	Water	10/14/16 11:15	10/18/16 10:10
680-130949-3	XGM-93-02X	Water	10/17/16 10:25	10/18/16 10:10
680-130949-4	XGM-97-12X	Water	10/17/16 09:15	10/18/16 10:10
680-130949-5	AAFES-7	Water	10/17/16 11:40	10/18/16 10:10
680-130949-6	43G-DUP1	Water	10/17/16 10:00	10/18/16 10:10
680-130949-7	Trip Blank	Water	10/17/16 00:00	10/18/16 10:10

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL SAV
SM 2320B	Alkalinity	SM	TAL DEN
MA VPH	MADEP VPH Volatile Petroleum Hydrocarbon	NONE	

Protocol References:

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
D	The reported value is from a dilution.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: AAFES-2

Lab Sample ID: 680-130949-1

Date Collected: 10/14/16 10:10
Date Received: 10/18/16 10:10

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**53**	**J**	200	70	24	ug/L		10/26/16 06:14	1
Barium	**53**		10	5.0	1.7	ug/L		10/26/16 06:14	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 06:14	1
Calcium	**84000**		500	75	25	ug/L		10/26/16 06:14	1
Chromium	**1.6**	**J**	10	4.0	1.6	ug/L		10/26/16 06:14	1
Cobalt	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:14	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/26/16 06:14	1
Iron	**11000**		50	50	17	ug/L		10/26/16 06:14	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 06:14	1
Magnesium	**23000**		500	75	33	ug/L		10/26/16 06:14	1
Manganese	**2800**		10	3.0	1.0	ug/L		10/26/16 06:14	1
Nickel	**2.4**	**J**	40	5.0	2.1	ug/L		10/26/16 06:14	1
Potassium	**3100**		1000	50	17	ug/L		10/26/16 06:14	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 06:14	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 06:14	1
Sodium	**160000**	**D**	10000	10000	4800	ug/L		10/26/16 17:16	10
Vanadium	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:14	1
Zinc	20	U	20	20	7.0	ug/L		10/26/16 06:14	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 22:42	1
Arsenic	**16**		3.0	3.0	1.5	ug/L		10/27/16 02:23	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 22:42	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 02:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 11:32	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	**140**		5.0	3.2	1.1	mg/L		10/20/16 19:12	1

Client Sample ID: XGM-94-04X

Lab Sample ID: 680-130949-2

Date Collected: 10/14/16 11:15
Date Received: 10/18/16 10:10

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**670**	**J**	200	70	24	ug/L		10/26/16 06:18	1
Barium	**12**	**J**	10	5.0	1.7	ug/L		10/26/16 06:18	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 06:18	1
Calcium	**100000**	**J**	500	75	25	ug/L		10/26/16 06:18	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/26/16 06:18	1
Cobalt	**2.2**	**J**	10	3.0	1.0	ug/L		10/26/16 06:18	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/26/16 06:18	1
Iron	**1600**	**J**	50	50	17	ug/L		10/26/16 06:18	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 06:18	1
Magnesium	**20000**	**J**	500	75	33	ug/L		10/26/16 06:18	1

Client Sample ID: XGM-94-04X

Lab Sample ID: 680-130949-2

Date Collected: 10/14/16 11:15

Matrix: Water

Date Received: 10/18/16 10:10

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	1500	J	10	3.0	1.0	ug/L		10/26/16 06:18	1
Nickel	8.3	J	40	5.0	2.1	ug/L		10/26/16 06:18	1
Potassium	2800	J	1000	50	17	ug/L		10/26/16 06:18	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 06:18	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 06:18	1
Sodium	130000	J D	10000	10000	4800	ug/L		10/26/16 17:29	10
Vanadium	1.5	J	10	3.0	1.0	ug/L		10/26/16 06:18	1
Zinc	20	U	20	20	7.0	ug/L		10/26/16 06:18	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 22:48	1
Arsenic	4.3		3.0	3.0	1.5	ug/L		10/27/16 02:28	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 22:48	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 02:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 11:37	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	170		5.0	3.2	1.1	mg/L		10/20/16 19:17	1

Client Sample ID: XGM-93-02X

Lab Sample ID: 680-130949-3

Date Collected: 10/17/16 10:25

Matrix: Water

Date Received: 10/18/16 10:10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	36	J	200	70	24	ug/L		10/26/16 06:52	1
Barium	34		10	5.0	1.7	ug/L		10/26/16 06:52	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 06:52	1
Calcium	110000		500	75	25	ug/L		10/26/16 06:52	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/26/16 06:52	1
Cobalt	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:52	1
Copper	2.9	J	20	5.0	1.8	ug/L		10/26/16 06:52	1
Iron	6000		50	50	17	ug/L		10/26/16 06:52	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 06:52	1
Magnesium	19000		500	75	33	ug/L		10/26/16 06:52	1
Manganese	1400		10	3.0	1.0	ug/L		10/26/16 06:52	1
Nickel	2.4	J	40	5.0	2.1	ug/L		10/26/16 06:52	1
Potassium	4900		1000	50	17	ug/L		10/26/16 06:52	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 06:52	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 06:52	1
Sodium	210000	D	10000	10000	4800	ug/L		10/26/16 17:52	10
Vanadium	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:52	1
Zinc	15	J	20	20	7.0	ug/L		10/26/16 06:52	1

Client Sample ID: XGM-93-02X

Lab Sample ID: 680-130949-3
Date Collected: 10/17/16 10:25
Matrix: Water
Date Received: 10/18/16 10:10

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 23:30	1
Arsenic	**4.5**		3.0	3.0	1.5	ug/L		10/27/16 02:54	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 23:30	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 02:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 11:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	**160**	**B**	5.0	3.2	1.1	mg/L		10/20/16 21:48	1

Client Sample ID: XGM-97-12X

Lab Sample ID: 680-130949-4
Date Collected: 10/17/16 09:15
Matrix: Water
Date Received: 10/18/16 10:10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**46**	**J**	200	70	24	ug/L		10/26/16 06:56	1
Barium	**55**		10	5.0	1.7	ug/L		10/26/16 06:56	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 06:56	1
Calcium	**120000**		500	75	25	ug/L		10/26/16 06:56	1
Chromium	**2.7**	**J**	10	4.0	1.6	ug/L		10/26/16 06:56	1
Cobalt	**7.2**	**J**	10	3.0	1.0	ug/L		10/26/16 06:56	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/26/16 06:56	1
Iron	**25000**		50	50	17	ug/L		10/26/16 06:56	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 06:56	1
Magnesium	**16000**		500	75	33	ug/L		10/26/16 06:56	1
Manganese	**1700**		10	3.0	1.0	ug/L		10/26/16 06:56	1
Nickel	**15**	**J**	40	5.0	2.1	ug/L		10/26/16 06:56	1
Potassium	**6200**		1000	50	17	ug/L		10/26/16 06:56	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 06:56	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 06:56	1
Sodium	**250000**	**D**	10000	10000	4800	ug/L		10/26/16 17:57	10
Vanadium	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:56	1
Zinc	**37**		20	20	7.0	ug/L		10/26/16 06:56	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 23:37	1
Arsenic	**21**		3.0	3.0	1.5	ug/L		10/27/16 02:59	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 23:37	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 02:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 11:55	1

Client Sample ID: XGM-97-12X

Lab Sample ID: 680-130949-4
Date Collected: 10/17/16 09:15
Matrix: Water
Date Received: 10/18/16 10:10

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	**140**		5.0	3.2	1.1	mg/L		10/20/16 19:26	1

Client Sample ID: AAFES-7

Lab Sample ID: 680-130949-5
Date Collected: 10/17/16 11:40
Matrix: Water
Date Received: 10/18/16 10:10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**40**	**J**	200	70	24	ug/L		10/26/16 07:01	1
Barium	**15**		10	5.0	1.7	ug/L		10/26/16 07:01	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 07:01	1
Calcium	**62000**		500	75	25	ug/L		10/26/16 07:01	1
Chromium	**8.1**	**J**	10	4.0	1.6	ug/L		10/26/16 07:01	1
Cobalt	3.0	U	10	3.0	1.0	ug/L		10/26/16 07:01	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/26/16 07:01	1
Iron	**180**		50	50	17	ug/L		10/26/16 07:01	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 07:01	1
Magnesium	**7900**		500	75	33	ug/L		10/26/16 07:01	1
Manganese	**510**		10	3.0	1.0	ug/L		10/26/16 07:01	1
Nickel	**10**	**J**	40	5.0	2.1	ug/L		10/26/16 07:01	1
Potassium	**3800**		1000	50	17	ug/L		10/26/16 07:01	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 07:01	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 07:01	1
Sodium	**240000**	**D**	10000	10000	4800	ug/L		10/26/16 18:01	10
Vanadium	3.0	U	10	3.0	1.0	ug/L		10/26/16 07:01	1
Zinc	20	U	20	20	7.0	ug/L		10/26/16 07:01	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 23:43	1
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/27/16 03:15	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 23:43	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 03:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 12:08	1

Client Sample ID: 43G-DUP1

Lab Sample ID: 680-130949-6
Date Collected: 10/17/16 10:00
Matrix: Water
Date Received: 10/18/16 10:10

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	**230**		200	70	24	ug/L		10/26/16 07:06	1
Barium	**54**		10	5.0	1.7	ug/L		10/26/16 07:06	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 07:06	1
Calcium	**110000**		500	75	25	ug/L		10/26/16 07:06	1
Chromium	**2.7**	**J**	10	4.0	1.6	ug/L		10/26/16 07:06	1
Cobalt	**7.6**	**J**	10	3.0	1.0	ug/L		10/26/16 07:06	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Client Sample ID: 43G-DUP1
Date Collected: 10/17/16 10:00
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-6
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Copper	5.0	U	20	5.0	1.8	ug/L		10/26/16 07:06	1
Iron	**25000**		50	50	17	ug/L		10/26/16 07:06	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 07:06	1
Magnesium	**16000**		500	75	33	ug/L		10/26/16 07:06	1
Manganese	**1600**		10	3.0	1.0	ug/L		10/26/16 07:06	1
Nickel	**16**	**J**	40	5.0	2.1	ug/L		10/26/16 07:06	1
Potassium	**5900**		1000	50	17	ug/L		10/26/16 07:06	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 07:06	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 07:06	1
Sodium	**240000**	**D**	10000	10000	4800	ug/L		10/26/16 18:06	10
Vanadium	3.0	U	10	3.0	1.0	ug/L		10/26/16 07:06	1
Zinc	**39**		20	20	7.0	ug/L		10/26/16 07:06	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 23:49	1
Arsenic	**22**		3.0	3.0	1.5	ug/L		10/27/16 03:20	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 23:49	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 03:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 12:13	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	**150**		5.0	3.2	1.1	mg/L		10/20/16 19:21	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-454671/1-A
Matrix: Water
Analysis Batch: 454914

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454671

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	200	70	24	ug/L		10/26/16 06:04	1
Barium	5.0	U	10	5.0	1.7	ug/L		10/26/16 06:04	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		10/26/16 06:04	1
Calcium	75	U	500	75	25	ug/L		10/26/16 06:04	1
Chromium	4.0	U	10	4.0	1.6	ug/L		10/26/16 06:04	1
Cobalt	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:04	1
Copper	5.0	U	20	5.0	1.8	ug/L		10/26/16 06:04	1
Iron	50	U	50	50	17	ug/L		10/26/16 06:04	1
Lead	10	U	10	10	3.9	ug/L		10/26/16 06:04	1
Magnesium	75	U	500	75	33	ug/L		10/26/16 06:04	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:04	1
Nickel	5.0	U	40	5.0	2.1	ug/L		10/26/16 06:04	1
Potassium	50	U	1000	50	17	ug/L		10/26/16 06:04	1
Selenium	20	U	20	20	9.9	ug/L		10/26/16 06:04	1
Silver	1.5	U	10	1.5	0.60	ug/L		10/26/16 06:04	1
Sodium	1000	U	1000	1000	480	ug/L		10/26/16 06:04	1
Vanadium	3.0	U	10	3.0	1.0	ug/L		10/26/16 06:04	1
Zinc	20	U	20	20	7.0	ug/L		10/26/16 06:04	1

Lab Sample ID: LCS 680-454671/2-A
Matrix: Water
Analysis Batch: 454914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5000	4590		ug/L		92	86 - 115
Barium	100	95.3		ug/L		95	88 - 113
Cadmium	50.0	47.7		ug/L		95	88 - 113
Calcium	5000	4720		ug/L		94	87 - 113
Chromium	100	97.5		ug/L		97	90 - 113
Cobalt	50.0	49.3		ug/L		99	89 - 114
Copper	100	94.9		ug/L		95	86 - 114
Iron	5000	4630		ug/L		93	87 - 115
Lead	500	463		ug/L		93	86 - 113
Magnesium	5000	4490		ug/L		90	85 - 113
Manganese	500	504		ug/L		101	90 - 114
Nickel	100	93.0		ug/L		93	88 - 113
Potassium	5000	4840		ug/L		97	86 - 114
Selenium	100	93.9		ug/L		94	83 - 114
Silver	50.0	48.1		ug/L		96	84 - 115
Sodium	5000	4350		ug/L		87	87 - 115
Vanadium	100	96.4		ug/L		96	90 - 111
Zinc	100	96.1		ug/L		96	87 - 115

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-130949-2 MS
Matrix: Water
Analysis Batch: 454914

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	670	J	5000	4940	J	ug/L		85	86 - 115
Barium	12	J	100	101		ug/L		89	88 - 113
Cadmium	3.0	U	50.0	48.9		ug/L		98	88 - 113
Calcium	100000	J	5000	103000	4	ug/L		21	87 - 113
Chromium	4.0	U	100	101		ug/L		101	90 - 113
Cobalt	2.2	J	50.0	51.7		ug/L		99	89 - 114
Copper	5.0	U	100	99.8		ug/L		100	86 - 114
Iron	1600	J	5000	5660	J	ug/L		81	87 - 115
Lead	10	U	500	474		ug/L		95	86 - 113
Magnesium	20000	J	5000	23300	J	ug/L		68	85 - 113
Manganese	1500	J	500	1950	J	ug/L		85	90 - 114
Nickel	8.3	J	100	104		ug/L		95	88 - 113
Potassium	2800	J	5000	8660	J	ug/L		118	86 - 114
Selenium	20	U	100	97.0		ug/L		97	83 - 114
Silver	1.5	U	50.0	50.2		ug/L		100	84 - 115
Vanadium	1.5	J	100	100		ug/L		99	90 - 111
Zinc	20	U	100	99.5		ug/L		100	87 - 115

Lab Sample ID: 680-130949-2 MS
Matrix: Water
Analysis Batch: 455089

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	130000	J D	5000	131000	4 D	ug/L		2	87 - 115

Lab Sample ID: 680-130949-2 MSD
Matrix: Water
Analysis Batch: 454914

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454671

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	670	J	5000	4770	J	ug/L		82	86 - 115	3	20
Barium	12	J	100	97.1	J	ug/L		85	88 - 113	4	20
Cadmium	3.0	U	50.0	47.4		ug/L		95	88 - 113	3	20
Calcium	100000	J	5000	99600	4	ug/L		-39	87 - 113	3	20
Chromium	4.0	U	100	97.6		ug/L		98	90 - 113	3	20
Cobalt	2.2	J	50.0	50.7		ug/L		97	89 - 114	2	20
Copper	5.0	U	100	96.4		ug/L		96	86 - 114	3	20
Iron	1600	J	5000	5490	J	ug/L		77	87 - 115	3	20
Lead	10	U	500	457		ug/L		91	86 - 113	4	20
Magnesium	20000	J	5000	22800	J	ug/L		58	85 - 113	2	20
Manganese	1500	J	500	1910	J	ug/L		78	90 - 114	2	20
Nickel	8.3	J	100	99.8		ug/L		91	88 - 113	4	20
Potassium	2800	J	5000	8360		ug/L		112	86 - 114	4	20
Selenium	20	U	100	95.1		ug/L		95	83 - 114	2	20
Silver	1.5	U	50.0	49.0		ug/L		98	84 - 115	3	20
Vanadium	1.5	J	100	96.8		ug/L		95	90 - 111	4	20
Zinc	20	U	100	95.6		ug/L		96	87 - 115	4	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-130949-2 MSD
Matrix: Water
Analysis Batch: 455089

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454671

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	130000	J D	5000	130000	4 D	ug/L		-14	87 - 115	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-454668/1-A
Matrix: Water
Analysis Batch: 454943

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454668

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.5	U	5.0	1.5	0.50	ug/L		10/25/16 22:12	1
Beryllium	0.40	U	0.50	0.40	0.17	ug/L		10/25/16 22:12	1

Lab Sample ID: MB 680-454668/1-A
Matrix: Water
Analysis Batch: 455168

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454668

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/27/16 02:12	1
Thallium	1.0	U	1.0	1.0	0.49	ug/L		10/27/16 02:12	1

Lab Sample ID: LCS 680-454668/2-A
Matrix: Water
Analysis Batch: 454943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454668

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	50.0	54.3		ug/L		109	85 - 117
Beryllium	50.0	57.3		ug/L		115	83 - 121

Lab Sample ID: LCS 680-454668/2-A
Matrix: Water
Analysis Batch: 455168

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454668

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	100		ug/L		100	84 - 116
Thallium	40.0	44.9		ug/L		112	82 - 116

Lab Sample ID: 680-130949-2 MS
Matrix: Water
Analysis Batch: 454943

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.5	U	50.0	54.7		ug/L		109	85 - 117
Beryllium	0.40	U	50.0	58.1		ug/L		116	83 - 121

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 680-130949-2 MS
Matrix: Water
Analysis Batch: 455168

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	4.3		100	109		ug/L		104	84 - 116
Thallium	1.0	U	40.0	46.0		ug/L		115	82 - 116

Lab Sample ID: 680-130949-2 MSD
Matrix: Water
Analysis Batch: 454943

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454668

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	1.5	U	50.0	55.6		ug/L		111	85 - 117	2	20
Beryllium	0.40	U	50.0	59.1		ug/L		118	83 - 121	2	20

Lab Sample ID: 680-130949-2 MSD
Matrix: Water
Analysis Batch: 455168

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454668

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	4.3		100	106		ug/L		101	84 - 116	3	20
Thallium	1.0	U	40.0	44.2		ug/L		110	82 - 116	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-454132/13-A
Matrix: Water
Analysis Batch: 454632

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 454132

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		10/24/16 11:14	1

Lab Sample ID: LCS 680-454132/14-A
Matrix: Water
Analysis Batch: 454632

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 454132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.62		ug/L		105	80 - 124

Lab Sample ID: 680-130949-2 MS
Matrix: Water
Analysis Batch: 454632

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.20	U	1.00	1.13		ug/L		113	80 - 124

Lab Sample ID: 680-130949-2 MSD
Matrix: Water
Analysis Batch: 454632

Client Sample ID: XGM-94-04X
Prep Type: Total/NA
Prep Batch: 454132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	1.13		ug/L		113	80 - 124	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-347523/33
Matrix: Water
Analysis Batch: 347523

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	1.22	J	5.0	3.2	1.1	mg/L		10/20/16 17:39	1

Lab Sample ID: LCS 280-347523/31
Matrix: Water
Analysis Batch: 347523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	201		mg/L		101	90 - 110		

Lab Sample ID: LCSD 280-347523/32
Matrix: Water
Analysis Batch: 347523

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity			200	214		mg/L		107	90 - 110	6	10

Lab Sample ID: MB 280-347524/31
Matrix: Water
Analysis Batch: 347524

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	2.61	J	5.0	3.2	1.1	mg/L		10/20/16 19:41	1

Lab Sample ID: LCS 280-347524/30
Matrix: Water
Analysis Batch: 347524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	193		mg/L		96	90 - 110		

Metals

Prep Batch: 454132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	7470A	
680-130949-2	XGM-94-04X	Total/NA	Water	7470A	
680-130949-3	XGM-93-02X	Total/NA	Water	7470A	
680-130949-4	XGM-97-12X	Total/NA	Water	7470A	
680-130949-5	AAFES-7	Total/NA	Water	7470A	
680-130949-6	43G-DUP1	Total/NA	Water	7470A	
MB 680-454132/13-A	Method Blank	Total/NA	Water	7470A	
LCS 680-454132/14-A	Lab Control Sample	Total/NA	Water	7470A	
680-130949-2 MS	XGM-94-04X	Total/NA	Water	7470A	
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	7470A	

Analysis Batch: 454632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	7470A	454132
680-130949-2	XGM-94-04X	Total/NA	Water	7470A	454132
680-130949-3	XGM-93-02X	Total/NA	Water	7470A	454132
680-130949-4	XGM-97-12X	Total/NA	Water	7470A	454132
680-130949-5	AAFES-7	Total/NA	Water	7470A	454132
680-130949-6	43G-DUP1	Total/NA	Water	7470A	454132
MB 680-454132/13-A	Method Blank	Total/NA	Water	7470A	454132
LCS 680-454132/14-A	Lab Control Sample	Total/NA	Water	7470A	454132
680-130949-2 MS	XGM-94-04X	Total/NA	Water	7470A	454132
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	7470A	454132

Prep Batch: 454668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	3010A	
680-130949-2	XGM-94-04X	Total/NA	Water	3010A	
680-130949-3	XGM-93-02X	Total/NA	Water	3010A	
680-130949-4	XGM-97-12X	Total/NA	Water	3010A	
680-130949-5	AAFES-7	Total/NA	Water	3010A	
680-130949-6	43G-DUP1	Total/NA	Water	3010A	
MB 680-454668/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-454668/2-A	Lab Control Sample	Total/NA	Water	3010A	
680-130949-2 MS	XGM-94-04X	Total/NA	Water	3010A	
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	3010A	

Prep Batch: 454671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	3010A	
680-130949-2	XGM-94-04X	Total/NA	Water	3010A	
680-130949-3	XGM-93-02X	Total/NA	Water	3010A	
680-130949-4	XGM-97-12X	Total/NA	Water	3010A	
680-130949-5	AAFES-7	Total/NA	Water	3010A	
680-130949-6	43G-DUP1	Total/NA	Water	3010A	
MB 680-454671/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-454671/2-A	Lab Control Sample	Total/NA	Water	3010A	
680-130949-2 MS	XGM-94-04X	Total/NA	Water	3010A	
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	3010A	

Metals (Continued)

Analysis Batch: 454914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	6010C	454671
680-130949-2	XGM-94-04X	Total/NA	Water	6010C	454671
680-130949-3	XGM-93-02X	Total/NA	Water	6010C	454671
680-130949-4	XGM-97-12X	Total/NA	Water	6010C	454671
680-130949-5	AAFES-7	Total/NA	Water	6010C	454671
680-130949-6	43G-DUP1	Total/NA	Water	6010C	454671
MB 680-454671/1-A	Method Blank	Total/NA	Water	6010C	454671
LCS 680-454671/2-A	Lab Control Sample	Total/NA	Water	6010C	454671
680-130949-2 MS	XGM-94-04X	Total/NA	Water	6010C	454671
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	6010C	454671

Analysis Batch: 454943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	6020A	454668
680-130949-2	XGM-94-04X	Total/NA	Water	6020A	454668
680-130949-3	XGM-93-02X	Total/NA	Water	6020A	454668
680-130949-4	XGM-97-12X	Total/NA	Water	6020A	454668
680-130949-5	AAFES-7	Total/NA	Water	6020A	454668
680-130949-6	43G-DUP1	Total/NA	Water	6020A	454668
MB 680-454668/1-A	Method Blank	Total/NA	Water	6020A	454668
LCS 680-454668/2-A	Lab Control Sample	Total/NA	Water	6020A	454668
680-130949-2 MS	XGM-94-04X	Total/NA	Water	6020A	454668
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	6020A	454668

Analysis Batch: 455089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	6010C	454671
680-130949-2	XGM-94-04X	Total/NA	Water	6010C	454671
680-130949-3	XGM-93-02X	Total/NA	Water	6010C	454671
680-130949-4	XGM-97-12X	Total/NA	Water	6010C	454671
680-130949-5	AAFES-7	Total/NA	Water	6010C	454671
680-130949-6	43G-DUP1	Total/NA	Water	6010C	454671
680-130949-2 MS	XGM-94-04X	Total/NA	Water	6010C	454671
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	6010C	454671

Analysis Batch: 455168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	6020A	454668
680-130949-2	XGM-94-04X	Total/NA	Water	6020A	454668
680-130949-3	XGM-93-02X	Total/NA	Water	6020A	454668
680-130949-4	XGM-97-12X	Total/NA	Water	6020A	454668
680-130949-5	AAFES-7	Total/NA	Water	6020A	454668
680-130949-6	43G-DUP1	Total/NA	Water	6020A	454668
MB 680-454668/1-A	Method Blank	Total/NA	Water	6020A	454668
LCS 680-454668/2-A	Lab Control Sample	Total/NA	Water	6020A	454668
680-130949-2 MS	XGM-94-04X	Total/NA	Water	6020A	454668
680-130949-2 MSD	XGM-94-04X	Total/NA	Water	6020A	454668

General Chemistry

Analysis Batch: 347523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-1	AAFES-2	Total/NA	Water	SM 2320B	
680-130949-2	XGM-94-04X	Total/NA	Water	SM 2320B	
680-130949-4	XGM-97-12X	Total/NA	Water	SM 2320B	
680-130949-6	43G-DUP1	Total/NA	Water	SM 2320B	
MB 280-347523/33	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-347523/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-347523/32	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 347524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130949-3	XGM-93-02X	Total/NA	Water	SM 2320B	
MB 280-347524/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-347524/30	Lab Control Sample	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Client Sample ID: AAFES-2

Date Collected: 10/14/16 10:10
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454914	10/26/16 06:14	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		10			455089	10/26/16 17:16	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454943	10/25/16 22:42	BJB	TAL SAV
	Instrument ID: ICPMSB									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			455168	10/27/16 02:23	BJB	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	454132	10/20/16 15:01	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454632	10/24/16 11:32	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	SM 2320B		1			347523	10/20/16 19:12	CCJ	TAL DEN
	Instrument ID: WC-AT3									

Client Sample ID: XGM-94-04X

Date Collected: 10/14/16 11:15
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454914	10/26/16 06:18	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		10			455089	10/26/16 17:29	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454943	10/25/16 22:48	BJB	TAL SAV
	Instrument ID: ICPMSB									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			455168	10/27/16 02:28	BJB	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	454132	10/20/16 15:01	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454632	10/24/16 11:37	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	SM 2320B		1			347523	10/20/16 19:17	CCJ	TAL DEN
	Instrument ID: WC-AT3									

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Client Sample ID: XGM-93-02X

Date Collected: 10/17/16 10:25
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454914	10/26/16 06:52	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		10			455089	10/26/16 17:52	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454943	10/25/16 23:30	BJB	TAL SAV
	Instrument ID: ICPMSB									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			455168	10/27/16 02:54	BJB	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	454132	10/20/16 15:01	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454632	10/24/16 11:50	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	SM 2320B		1			347524	10/20/16 21:48	CCJ	TAL DEN
	Instrument ID: WC_AT2									

Client Sample ID: XGM-97-12X

Date Collected: 10/17/16 09:15
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454914	10/26/16 06:56	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		10			455089	10/26/16 17:57	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454943	10/25/16 23:37	BJB	TAL SAV
	Instrument ID: ICPMSB									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			455168	10/27/16 02:59	BJB	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	454132	10/20/16 15:01	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454632	10/24/16 11:55	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	SM 2320B		1			347523	10/20/16 19:26	CCJ	TAL DEN
	Instrument ID: WC-AT3									

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Client Sample ID: AAFES-7

Date Collected: 10/17/16 11:40
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454914	10/26/16 07:01	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		10			455089	10/26/16 18:01	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454943	10/25/16 23:43	BJB	TAL SAV
	Instrument ID: ICPMSB									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			455168	10/27/16 03:15	BJB	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	454132	10/20/16 15:01	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454632	10/24/16 12:08	JKL	TAL SAV
	Instrument ID: LEEMAN2									

Client Sample ID: 43G-DUP1

Date Collected: 10/17/16 10:00
Date Received: 10/18/16 10:10

Lab Sample ID: 680-130949-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		1			454914	10/26/16 07:06	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	50 mL	454671	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6010C		10			455089	10/26/16 18:06	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			454943	10/25/16 23:49	BJB	TAL SAV
	Instrument ID: ICPMSB									
Total/NA	Prep	3010A			50 mL	250 mL	454668	10/25/16 09:59	AJR	TAL SAV
Total/NA	Analysis	6020A		1			455168	10/27/16 03:20	BJB	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Prep	7470A			50 mL	50 mL	454132	10/20/16 15:01	JKL	TAL SAV
Total/NA	Analysis	7470A		1			454632	10/24/16 12:13	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Analysis	SM 2320B		1			347523	10/20/16 19:21	CCJ	TAL DEN
	Instrument ID: WC-AT3									

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MassDEP Analytical Protocol Certification Form

Laboratory Name: Katahdin Analytical Services, LLC. Project #:

Project Location: RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
SJ8563-1, 2, 3, 4, 5, 6

Matrices: Groundwater/Surface Water √ Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A √	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	(Yes) No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	(Yes) No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	(Yes) No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	(Yes) No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	(Yes) No (Yes) No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	(Yes) No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	(Yes) No[1]

***Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (No[1])
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	(Yes) No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Leslie Dimond **Position:** Q.A. Officer

Printed Name: Leslie Dimond **Date:** 10/24/2016

October 24, 2016

Mr. Jerry Lanier
Test America Savannah
5102 LaRoche Avenue
Savannah,GA 31404

RE: Katahdin Lab Number: SJ8563
Project ID: Devens Fall 2016 LTM
Project Manager: Ms. Jennifer Obrin
Sample Receipt Date(s): October 18, 2016

Dear Mr. Lanier:

Please find enclosed the following information:

* Report of Analysis (Analytical and/or Field)
* Quality Control Data Summary
* Chain of Custody (COC)
* Login Report

A copy of the Chain of Custody is included in the paginated report. The original COC is attached as an addendum to this report.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. The results contained in this report relate only to the submitted samples. This cover letter is an integral part of the ROA.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in an attached technical narrative or in the Report of Analysis.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Please go to http://www.katahdinlab.com/cert.html for copies of Katahdin Analytical Services Inc. current certificates and analyte lists.

Sincerely,
KATAHDIN ANALYTICAL SERVICES

Jessie Dimond

Authorized Signature

10/24/2016

Date

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TEST AMERICA SAVANNAH
DEVENS FALL 2016 LTM
SJ8563

Sample Receipt

The following samples were received on October 18, 2016 and were logged in under Katahdin Analytical Services work order number SJ8563 for a hardcopy due date of October 24, 2016.

KATAHDIN Sample No.	TEST AMERICA SAVANNAH Sample Identification
SJ8563-1	AAFES-2
SJ8563-2	XGM-94-04X
SJ8563-3	XGM-93-02X
SJ8563-4	XGM-97-12X
SJ8563-5	43G-DUP1
SJ8563-6	TRIP BLANK

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SJ8563 were analyzed in accordance with Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MADEP, May 2004, Revision 1.1, and/or for the specific methods listed below or on the Report of Analysis.

MA-VPH Analysis

The closing calibration verification standard (CV) had low responses for the surrogate 2,5-dibromotoluene on the PID and FID, which resulted in %D's that were below the method acceptance limit of 25%. The low responses are likely due to interference from samples that were analyzed preceding the CV.

The MS and MSD WG192928-4 and 5 had high recoveries for the C9-C10 aromatic range and the C9-C12 aliphatic range that were outside of the method acceptance limits. Since the associated LCS and LCSD were acceptable, the samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
10.28.16

Leslie Dimond
Quality Assurance Officer

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-1
Client ID: AAFES-2
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10139.D

Sample Date: 14-OCT-16
Received Date: 18-OCT-16
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics		850	ug/L	1	100	100	50.
C9-C12 Aliphatics		430	ug/L	1	100	100	50.
C9-C10 Aromatics	E	880	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene		22	ug/L	1	5	5.0	0.42
Methyl tert-butylether	J	4.8	ug/L	1	5	5.0	0.31
Naphthalene		16	ug/L	1	5	5.0	1.6
Toluene	J	0.44	ug/L	1	5	5.0	0.34
m+p-Xylenes		11	ug/L	1	10	10.	0.92
o-Xylene	J	1.9	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		128.	%				
2,5-Dibromotoluene (PID)		119.	%				

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-1DL
Client ID: AAFES-2
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10157.D

Sample Date: 14-OCT-16
Received Date: 18-OCT-16
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	J	450	ug/L	5	100	500	250
C9-C12 Aliphatics	U	500	ug/L	5	100	500	250
C9-C10 Aromatics		730	ug/L	5	100	500	250
Benzene	U	15	ug/L	5	3	15.	1.6
Ethylbenzene	J	16	ug/L	5	5	25.	2.1
Methyl tert-butylether	U	25	ug/L	5	5	25.	1.6
Naphthalene	J	12	ug/L	5	5	25.	8.0
Toluene	U	25	ug/L	5	5	25.	1.7
m+p-Xylenes	J	9.2	ug/L	5	10	50.	4.6
o-Xylene	U	25	ug/L	5	5	25.	2.4
2,5-Dibromotoluene (FID)		83.3	%				
2,5-Dibromotoluene (PID)		80.6	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-2
Client ID: XGM-94-04X
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10140.D

Sample Date: 14-OCT-16
Received Date: 18-OCT-16
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics		480	ug/L	1	100	100	50.
C9-C12 Aliphatics		120	ug/L	1	100	100	50.
C9-C10 Aromatics	E	350	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene		22	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	J	4.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	J	3.6	ug/L	1	10	10.	0.92
o-Xylene	J	1.7	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		85.2	%				
2,5-Dibromotoluene (PID)		74.8	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-2DL
Client ID: XGM-94-04X
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10158.D

Sample Date: 14-OCT-16
Received Date: 18-OCT-16
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	J	180	ug/L	2	100	200	100
C9-C12 Aliphatics	U	200	ug/L	2	100	200	100
C9-C10 Aromatics		320	ug/L	2	100	200	100
Benzene	U	6.0	ug/L	2	3	6.0	0.62
Ethylbenzene		17	ug/L	2	5	10.	0.84
Methyl tert-butylether	U	10	ug/L	2	5	10.	0.62
Naphthalene	J	3.9	ug/L	2	5	10.	3.2
Toluene	U	10	ug/L	2	5	10.	0.68
m+p-Xylenes	J	3.5	ug/L	2	10	20.	1.8
o-Xylene	J	1.2	ug/L	2	5	10.	0.94
2,5-Dibromotoluene (FID)		95.7	%				
2,5-Dibromotoluene (PID)		90.6	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-3
Client ID: XGM-93-02X
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10141.D

Sample Date: 17-OCT-16
Received Date: 18-OCT-16
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	J	94	ug/L	1	100	100	50.
C9-C12 Aliphatics	J	56	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	J	2.7	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		109.	%				
2,5-Dibromotoluene (PID)		94.7	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-4
Client ID: XGM-97-12X
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10142.D

Sample Date: 17-OCT-16
Received Date: 18-OCT-16
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics		420	ug/L	1	100	100	50.
C9-C12 Aliphatics		230	ug/L	1	100	100	50.
C9-C10 Aromatics	E	400	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene		23	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	J	2.6	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		99.4	%				
2,5-Dibromotoluene (PID)		88.1	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-4DL
Client ID: XGM-97-12X
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10159.D

Sample Date: 17-OCT-16
Received Date: 18-OCT-16
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	J	170	ug/L	2	100	200	100
C9-C12 Aliphatics	J	110	ug/L	2	100	200	100
C9-C10 Aromatics		340	ug/L	2	100	200	100
Benzene	U	6.0	ug/L	2	3	6.0	0.62
Ethylbenzene		18	ug/L	2	5	10.	0.84
Methyl tert-butylether	U	10	ug/L	2	5	10.	0.62
Naphthalene	U	10	ug/L	2	5	10.	3.2
Toluene	U	10	ug/L	2	5	10.	0.68
m+p-Xylenes	U	20	ug/L	2	10	20.	1.8
o-Xylene	U	10	ug/L	2	5	10.	0.94
2,5-Dibromotoluene (FID)		98.0	%				
2,5-Dibromotoluene (PID)		92.9	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-5
Client ID: 43G-DUP1
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10143.D

Sample Date: 17-OCT-16
Received Date: 18-OCT-16
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 24-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics		420	ug/L	1	100	100	50.
C9-C12 Aliphatics		220	ug/L	1	100	100	50.
C9-C10 Aromatics	E	400	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene		23	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	J	2.6	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		100.	%				
2,5-Dibromotoluene (PID)		88.2	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-5DL
Client ID: 43G-DUP1
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10160.D

Sample Date: 17-OCT-16
Received Date: 18-OCT-16
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics		250	ug/L	2	100	200	100
C9-C12 Aliphatics	J	120	ug/L	2	100	200	100
C9-C10 Aromatics		370	ug/L	2	100	200	100
Benzene	U	6.0	ug/L	2	3	6.0	0.62
Ethylbenzene		21	ug/L	2	5	10.	0.84
Methyl tert-butylether	U	10	ug/L	2	5	10.	0.62
Naphthalene	U	10	ug/L	2	5	10.	3.2
Toluene	U	10	ug/L	2	5	10.	0.68
m+p-Xylenes	U	20	ug/L	2	10	20.	1.8
o-Xylene	U	10	ug/L	2	5	10.	0.94
2,5-Dibromotoluene (FID)		88.6	%				
2,5-Dibromotoluene (PID)		88.5	%				

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8563-6
Client ID: TRIP BLANK
Project: Devens Fall 2016 LTM
SDG: SJ8563
Lab File ID: 2JJ10144.D

Sample Date: 17-OCT-16
Received Date: 18-OCT-16
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		118.	%				
2,5-Dibromotoluene (PID)		105.	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Devens Fall 2016 LTM
Lab File ID : 2JJ10138.D
Instrument ID : GC02

SDG : SJ8563
Lab Sample ID : WG192858-1RA
Date Analyzed : 18-OCT-16
Time Analyzed : 13:03
Date Extracted : 18-OCT-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG192858-2	2JJ10136.D	10/18/16	11:25
Laboratory Control S	WG192858-3	2JJ10137.D	10/18/16	12:07
AAFES-2	SJ8563-1	2JJ10139.D	10/18/16	16:04
XGM-94-04X	SJ8563-2	2JJ10140.D	10/18/16	16:45
XGM-93-02X	SJ8563-3	2JJ10141.D	10/18/16	17:27
XGM-97-12X	SJ8563-4	2JJ10142.D	10/18/16	18:08
43G-DUP1	SJ8563-5	2JJ10143.D	10/18/16	18:50
TRIP BLANK	SJ8563-6	2JJ10144.D	10/18/16	19:32

Report of Analytical Results

Client:
Lab ID: WG192858-1RA
Client ID: Method Blank Sample
Project:
SDG: SJ8563
Lab File ID: 2JJ10138.D

Sample Date:
Received Date:
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		124.	%				
2,5-Dibromotoluene (PID)		111.	%				

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LCS/LCSD Recovery Report

LCS ID: WG192858-2
LCSD ID: WG192858-3
Project:
SDG: SJ8563
Report Date: 21-OCT-16
LCS File ID: 2JJ10136.D

Received Date:
Extract Date: 18-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192858
LCSD File ID: 2JJ10137.D

Analysis Date: 18-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
C5-C8 Aliphatics	300.	331.	110.	337.	112.	ug/L	2	25	70-130
C9-C12 Aliphatics	200.	212.	106.	213.	106.	ug/L	0	25	70-130
C9-C10 Aromatics	100.	99.5	99.5	99.6	99.6	ug/L	0	25	70-130
Benzene	100.	92.3	92.3	93.7	93.7	ug/L	2	25	70-130
Ethylbenzene	100.	91.9	91.9	91.5	91.5	ug/L	0	25	70-130
Methyl tert-butylether	100.	101.	101.	102.	102.	ug/L	1	25	70-130
Naphthalene	100.	98.0	98.0	92.9	92.9	ug/L	5	25	70-130
Toluene	100.	93.9	93.9	94.1	94.1	ug/L	0	25	70-130
m+p-Xylenes	200.	181.	90.5	179.	89.5	ug/L	1	25	70-130
o-Xylene	100.	95.8	95.8	95.4	95.4	ug/L	0	25	70-130
2,5-Dibromotoluene (FID)			100.		94.8				70-130
2,5-Dibromotoluene (PID)			89.2		85.7				70-130

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Devens Fall 2016 LTM
Lab File ID : 2JJ10154.D
Instrument ID : GC02

SDG : SJ8563
Lab Sample ID : WG192928-1RA
Date Analyzed : 19-OCT-16
Time Analyzed : 12:00
Date Extracted : 19-OCT-16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG192928-2	2JJ10152.D	10/19/16	10:20
Laboratory Control S	WG192928-3	2JJ10153.D	10/19/16	11:01
AAFES-2	SJ8563-1DL	2JJ10157.D	10/19/16	17:53
XGM-94-04X	SJ8563-2DL	2JJ10158.D	10/19/16	18:34
XGM-97-12X	SJ8563-4DL	2JJ10159.D	10/19/16	19:15
43G-DUP1	SJ8563-5DL	2JJ10160.D	10/19/16	19:55
Matrix Spike	WG192928-4	2JJ10161.D	10/19/16	20:37
Matrix Spike Duplica	WG192928-5	2JJ10162.D	10/19/16	21:19

Report of Analytical Results

Client:
Lab ID: WG192928-1RA
Client ID: Method Blank Sample
Project:
SDG: SJ8563
Lab File ID: 2JJ10154.D

Sample Date:
Received Date:
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 21-OCT-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
C5-C8 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C12 Aliphatics	U	100	ug/L	1	100	100	50.
C9-C10 Aromatics	U	100	ug/L	1	100	100	50.
Benzene	U	3.0	ug/L	1	3	3.0	0.31
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.42
Methyl tert-butylether	U	5.0	ug/L	1	5	5.0	0.31
Naphthalene	U	5.0	ug/L	1	5	5.0	1.6
Toluene	U	5.0	ug/L	1	5	5.0	0.34
m+p-Xylenes	U	10	ug/L	1	10	10.	0.92
o-Xylene	U	5.0	ug/L	1	5	5.0	0.47
2,5-Dibromotoluene (FID)		123.	%				
2,5-Dibromotoluene (PID)		110.	%				

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LCS/LCSD Recovery Report

LCS ID: WG192928-2
LCSD ID: WG192928-3
Project:
SDG: SJ8563
Report Date: 21-OCT-16
LCS File ID: 2JJ10152.D

Received Date:
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928
LCSD File ID: 2JJ10153.D

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
C5-C8 Aliphatics	300.	310.	103.	316.	105.	ug/L	2	25	70-130
C9-C12 Aliphatics	200.	200.	100.	204.	102.	ug/L	2	25	70-130
C9-C10 Aromatics	100.	99.0	99.0	99.7	99.7	ug/L	1	25	70-130
Benzene	100.	89.5	89.5	91.3	91.3	ug/L	2	25	70-130
Ethylbenzene	100.	86.0	86.0	89.5	89.5	ug/L	4	25	70-130
Methyl tert-butylether	100.	100.	100.	99.5	99.5	ug/L	0	25	70-130
Naphthalene	100.	94.0	94.0	101.	101.	ug/L	7	25	70-130
Toluene	100.	88.3	88.3	91.4	91.4	ug/L	3	25	70-130
m+p-Xylenes	200.	169.	84.5	176.	88.0	ug/L	4	25	70-130
o-Xylene	100.	91.2	91.2	93.5	93.5	ug/L	2	25	70-130
2,5-Dibromotoluene (FID)			110.		115.				70-130
2,5-Dibromotoluene (PID)			101.		102.				70-130

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MS/MSD Recovery Report

MS ID: WG192928-4
MSD ID: WG192928-5
Sample ID: SJ8563-2
Client ID: XGM-94-04X
Project:
SDG: SJ8563
MS File ID: 2JJ10161.D

Received Date:
Extract Date: 19-OCT-16
Extracted By: JHR
Extraction Method: MA-VPH
Lab Prep Batch: WG192928
Report Date: 21-OCT-16
MSD File ID: 2JJ10162.D

Analysis Date: 19-OCT-16
Analyst: JHR
Analysis Method: MA DEP VPH 04-1.1
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
C5-C8 Aliphatics	600.	600.	ug/L	J180	803	805	104.	105.	0	50	70-130
C9-C12 Aliphatics	400.	400.	ug/L	U200	765	740	191.*	185.*	3	50	70-130
C9-C10 Aromatics	200.	200.	ug/L	320	606	582	143.*	131.*	4	50	70-130
Benzene	200.	200.	ug/L	U6.0	186	185	93.0	92.5	0	50	70-130
Ethylbenzene	200.	200.	ug/L	17	198	199	90.4	90.8	0	50	70-130
Methyl tert-butylether	200.	200.	ug/L	U10	196	197	98.0	98.5	0	50	70-130
Naphthalene	200.	200.	ug/L	J3.9	179	178	87.5	87.0	0	50	70-130
Toluene	200.	200.	ug/L	U10	187	189	93.5	94.5	1	50	70-130
m+p-Xylenes	400.	400.	ug/L	J3.5	361	362	89.4	89.6	0	50	70-130
o-Xylene	200.	200.	ug/L	J1.2	192	193	95.4	95.9	0	50	70-130
2,5-Dibromotoluene (FID)							79.4	78.1			70-130
2,5-Dibromotoluene (PID)							78.8	76.1			70-130

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Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin Analytical Services, LLC. — Sample Receipt Condition Report

Client: Test America	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: SO	Delivered By: FedEx
KAS Work Order#: SJ8563-	KIMS Review By:	Received By: GV
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 10-18-16/09:15

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.		✓			Temp (°C): 1.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

360325-Boston

SJ8563

360325-Boston

COC / Workorder #

Devens - AOC43G

Chain of Custody Record

Page: 1 of: 1

Company	KOMAN GS, LLC
Address:	160 East Main Street, Suite 2F Westborough, MA
Phone:	508-366-7442 Fax: 508-366-7445
Sampled by [Print Name(s)]/Affilliation	
Sampler(s) Signature(s)	

Preservatives (see codes): H | N | I

Analyses Requested

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	VPH/MADEP 3-40-ml VOA vials (HCl)	Total Metals*-SW6010/6020/7470 1-250ml poly (HNO3)	Alkalinity/SM2320B 1-250-ml poly	Remarks	Lab. No.
	AAFES-2	10/17/16	1010	P	GW	5	X	X	X		
	XGM-94-04X	10/14/16	1115	P	GW	15	X	X	X	MS/SD MSD	
	XGM-93-02X	10/17/16	1025	P	GW	5	X	X	X		
	XGM-97-12X	10/17/16	915	P	GW	5	X	X	X		
	AAFES-7	10/17/16	1140	P	GW	1		X			
	43G-DUP1	10/17/16	1000	P	GW	5	X	X	X		
	Trip Blank			O	O	2	X				

Laboratory: Test America - Savannah
Address:
Contact: Jerry Lanier
Regulatory Facility No.
Project Name: Devens Fall 2016 LTM
Sampling QAP No.:
Approval Date:
TAT
Other:

Metals - To Savannah
VOC Vials To Katahdin
Alkalinity To Denver

Shipping Details: courier pick up

Total Number of Containers: 0

Item No.	Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
		10/17/16	1935		10/18/16	1435
		10/17/16	15:32		10/18/16	0805

Date Out: Via:
Returned: Via:
Additional Comments:
* = Full TAL (As, Be, Sb NS Tl by 6020) ; TAL by 6010 plus Hg

email logins and results to:
lekes@komangs.com
eanderson@komangs.com

Lab Comments
Seal #
Preserve Where Applicable
On ICE
Temperature _____C

- NJ Reduced
- NJ Full
- Full CLP
- Disk Deliverable
- Other (Specify)

NJ Data Deliverable Info
- Commercial "A"
- Commercial "B"
- State Forms

MATRIX CODES: A = Ai GW = Groundwat SE = Sediment SP = Soil SW = Surface Water W = Water (Blanks) O = Other
PRESERVATIVE CODES H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol O = Other
COLLECTION METHOD C = Composite G=Grab P= Pumping O = Other

Katahdin Analytical Services SJ8563 page 00000023 of 00000026

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Oct. 19, 2016
06:38 AM

Login Number: SJ8563

Account: TASAV001
Test America Savannah

Project: TASAV-DEVENS

NoWeb

Quote/Incoming:

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL. "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-130852
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	1.0
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	SO
PM	:	JO
PROJECT NAME	:	Devens Fall 2016 LTM
QC LEVEL	:	II
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8563-1	AAFES-2	14-OCT-16 10:10	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	28-OCT-16	40mL Vial+HCl		

SJ8563-2	XGM-94-04X	14-OCT-16 11:15	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	28-OCT-16	40mL Vial+HCl		**MS/MSD**

SJ8563-3	XGM-93-02X	17-OCT-16 10:25	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	31-OCT-16	40mL Vial+HCl		

SJ8563-4	XGM-97-12X	17-OCT-16 09:15	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	31-OCT-16	40mL Vial+HCl		

SJ8563-5	43G-DUP1	17-OCT-16 10:00	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	31-OCT-16	40mL Vial+HCl		

SJ8563-6	TRIP BLANK	17-OCT-16 10:00	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	31-OCT-16	40mL Vial+HCl		

SJ8563-7	XGM-94-04XMS	14-OCT-16 11:15	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	28-OCT-16			**MS Charge only. Not a sample.**

10.19.16

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Oct. 19, 2016
06:38 AM

Login Number: SJ8563

Quote/Incoming:

Account: TASAV001 NoWeb
Test America Savannah

Project: TASAV-DEVENS

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8563-8	XGM-94-04XMSD	14-OCT-16 11:15	18-OCT-16			30-OCT-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-VPH	28-OCT-16			MSD Charge only. Not a sample.

Total Samples: *8* ***Total Analyses:*** *8*

10.19.16

360325-Boston

COC / Workorder #

Devens - AOC43G

Chain of Custody Record

Page: 1 of: 1

| | | |

360325-Boston

360325-Boston

COC / Workorder #

Devens - AOC43G

Chain of Custody Record

Page: 1 of: 1

Company	KOMAN GS, LLC		
Address:	160 East Main Street, Suite 2F Westborough, MA		
Phone:	508-366-7442	Fax:	508-366-7445

Sampled by [Print Name(s)]/Affilliation

Sampler(s) Signature(s)

Preservatives (see codes): H | N | I

Analyses Requested

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	VPH/MADEP 3-40-ml VOA vials (HCl)	Total Metals*-SW6010/6020/7470 1-250ml poly (HNO3)	Alkalinity/SM2320B 1-250-ml poly	Remarks	Lab. No.
	AAFES-2	10/14/16	1010	P	GW	5	X	X	X		
	XGM-94-04X	10/14/16	1115	P	GW	15	X	X	X	MS/SD MSD	
	XGM-93-02X	10/17/16	1025	P	GW	5	X	X	X		
	XGM-97-12X	10/17/16	915	P	GW	5	X	X	X		
	AAFES-7	10/17/16	1140	P	GW	1		X			
	43G-DUP1	10/17/16	1000	P	GW	5	X	X	X		
	Trip Blank	—	—	O	O	2	X				

680-130949 Chain of Custody

Metals - To Savannah

VOA Vials To Katahdin

Alkalinity To Denver

Laboratory:	Test America - Savannah		
Address:			
Contact:	Jerry Lanier		
Regulatory Facility No.			
Project Name:	Devens Fall 2016 LTM		
Sampling QAP No.:			
Approval Date:			
TAT			
Other:			

Shipping Details: courier pick up | 0 ← Total Number of Containers

Date Out: Via:

Returned: Via:

Additional Comments:
* = Full TAL (As, Be, Sb NS Tl by 6020) ; TAL by 6010 plus Hg

Item No.	Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
	[illegible]	10/17/16	1435	[illegible]	10/17/16	1435
	[illegible]	10/17/16	15:36	[illegible]	10/18/16	0955

email logins and results to:

lekes@komangs.com

eanderson@komangs.com

Lab Comments

Seal # _____

Preserve Where Applicable ☐

On ICE ☐

Temperature _____ C

☐ NJ Reduced
☐ NJ Full
☐ Full CLP
☐ Disk Deliverable
☐ Other (Specify)

NJ Data Deliverable Info

☐ Commercial "A"
☐ Commercial "B"
☐ State Forms

MATRIX CODES: A = Ai GW = Groundwat SE = Sediment SP = Soil SW = Surface Water W = Water (Blanks) O = Other

PRESERVATIVE CODES H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol O = Other

COLLECTION METHOD C = Composite G=Grab P= Pumping O = Other

1.0+0.0 IR#5 Transfered by Dw 10/18/16

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-130949-1

Login Number: 130949
List Number: 1
Creator: Ragnaldsen, Amy E

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-130949-1

Login Number: 130949
List Number: 2
Creator: White, Denise E

List Source: TestAmerica Denver
List Creation: 10/18/16 06:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	BLANK
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC43G

TestAmerica Job ID: 680-130949-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-131340-1
Client Project/Site: Fort Devens / AOC 69W
Revision: 1

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
12/2/2016 11:47:43 AM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-131340-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Fort Devens / AOC 69W

Report Number: 680-131340-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 10/27/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.4 C.

The final report was revised to correct an error in the metals reported data for sample ZWM-99-22X (680-131340-5).

METALS (ICP)
Samples 69W-94-13 (680-131340-1), 69W-94-14 (680-131340-2), ZWM-95-15X (680-131340-3), ZWM-95-18X (680-131340-4), ZWM-99-22X (680-131340-5), ZWM-99-23X (680-131340-6), ZWM-99-24X (680-131340-7), ZWM-01-25X (680-131340-8), 69WP-08-01 (680-131340-9), 69WP-13-01 (680-131340-10) and 69W-DUP-1 (680-131340-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/28/2016 and 11/02/2016 and analyzed on 10/31/2016 and 11/07/2016.

The interference check standard solution (ICSA) associated with the following samples showed results elements at a level greater than the limit of detection (LOD). It is believed that the solution contains trace impurities of this element / these elements and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution. (ICSA 680-455800/19)

The interference check standard solution (ICSA) associated with batch 680-456318 had results for one or more elements at a level greater than 2 times the limit of detection (LOD). The initial ICSA result(s) was >2X LOD for Chromium. The vendor acknowledges that these elements are trace impurities in the ICSA standard. These results are not indicative of a matrix interference.

Iron and Manganese failed the recovery criteria high for the MS/MSD of sample ZWM-99-22X (680-131340-5) in batch 680-455769.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP-MS)
Samples 69W-94-13 (680-131340-1), 69W-94-14 (680-131340-2), ZWM-95-15X (680-131340-3), ZWM-95-18X (680-131340-4), ZWM-99-22X (680-131340-5), ZWM-99-23X (680-131340-6), ZWM-99-24X (680-131340-7), ZWM-01-25X (680-131340-8), 69WP-08-01 (680-131340-9) and 69W-DUP-1 (680-131340-11) were analyzed for Metals (ICP-MS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/28/2016 and 11/02/2016 and analyzed on 10/31/2016 and 11/04/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Subcontract Work
Method MA EPH: This method was subcontracted to Katahdin Analytical Services Inc. The subcontract laboratory certification is different

Job ID: 680-131340-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

from that of the facility issuing the final report.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-131340-1	69W-94-13	Water	10/25/16 16:05	10/27/16 09:09
680-131340-2	69W-94-14	Water	10/25/16 13:55	10/27/16 09:09
680-131340-3	ZWM-95-15X	Water	10/25/16 14:40	10/27/16 09:09
680-131340-4	ZWM-95-18X	Water	10/26/16 09:30	10/27/16 09:09
680-131340-5	ZWM-99-22X	Water	10/25/16 17:00	10/27/16 09:09
680-131340-6	ZWM-99-23X	Water	10/25/16 11:45	10/27/16 09:09
680-131340-7	ZWM-99-24X	Water	10/25/16 15:20	10/27/16 09:09
680-131340-8	ZWM-01-25X	Water	10/25/16 12:35	10/27/16 09:09
680-131340-9	69WP-08-01	Water	10/26/16 08:40	10/27/16 09:09
680-131340-10	69WP-13-01	Water	10/26/16 07:50	10/27/16 09:09
680-131340-11	69W-DUP-1	Water	10/25/16 17:30	10/27/16 09:09

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
MA EPH	MADEP EPH (Extractable Petroleum Hydroca	NONE	

Protocol References:

NONE = NONE

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Client Sample ID: 69W-94-13 — Lab Sample ID: 680-131340-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	11000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	2600		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	76		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

Client Sample ID: 69W-94-14 — Lab Sample ID: 680-131340-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	87		50	50	17	ug/L	1		6010C	Dissolved
Manganese	27		10	3.0	1.0	ug/L	1		6010C	Dissolved

Client Sample ID: ZWM-95-15X — Lab Sample ID: 680-131340-3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	180		50	50	17	ug/L	1		6010C	Dissolved
Manganese	17		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	3.7		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

Client Sample ID: ZWM-95-18X — Lab Sample ID: 680-131340-4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	12		10	3.0	1.0	ug/L	1		6010C	Dissolved

Client Sample ID: ZWM-99-22X — Lab Sample ID: 680-131340-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	18000	J	50	50	17	ug/L	1		6010C	Dissolved
Manganese	960		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	150		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

Client Sample ID: ZWM-99-23X — Lab Sample ID: 680-131340-6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	1500		50	50	17	ug/L	1		6010C	Dissolved
Manganese	590		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	7.7		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

Client Sample ID: ZWM-99-24X — Lab Sample ID: 680-131340-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	41	J	50	50	17	ug/L	1		6010C	Dissolved
Manganese	2.9	J	10	3.0	1.0	ug/L	1		6010C	Dissolved

Client Sample ID: ZWM-01-25X — Lab Sample ID: 680-131340-8

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	78		10	3.0	1.0	ug/L	1		6010C	Dissolved

Client Sample ID: 69WP-08-01 — Lab Sample ID: 680-131340-9

This Detection Summary does not include radiochemical test results.

Client Sample ID: 69WP-08-01 (Continued) — Lab Sample ID: 680-131340-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	7100		50	50	17	ug/L	1		6010C	Dissolved
Manganese	79		10	3.0	1.0	ug/L	1		6010C	Dissolved

Client Sample ID: 69WP-13-01 — Lab Sample ID: 680-131340-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	140		10	3.0	1.0	ug/L	1		6010C	Dissolved

Client Sample ID: 69W-DUP-1 — Lab Sample ID: 680-131340-11

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Iron	18000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	980		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	140		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: 69W-94-13

Lab Sample ID: 680-131340-1

Date Collected: 10/25/16 16:05

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**11000**		50	50	17	ug/L		10/31/16 18:41	1
Manganese	**2600**		10	3.0	1.0	ug/L		10/31/16 18:41	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**76**		3.0	3.0	1.5	ug/L		10/31/16 20:04	1

Client Sample ID: 69W-94-14

Lab Sample ID: 680-131340-2

Date Collected: 10/25/16 13:55

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**87**		50	50	17	ug/L		10/31/16 18:47	1
Manganese	**27**		10	3.0	1.0	ug/L		10/31/16 18:47	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/31/16 20:09	1

Client Sample ID: ZWM-95-15X

Lab Sample ID: 680-131340-3

Date Collected: 10/25/16 14:40

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**180**		50	50	17	ug/L		10/31/16 18:52	1
Manganese	**17**		10	3.0	1.0	ug/L		10/31/16 18:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**3.7**		3.0	3.0	1.5	ug/L		10/31/16 20:14	1

Client Sample ID: ZWM-95-18X

Lab Sample ID: 680-131340-4

Date Collected: 10/26/16 09:30

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/31/16 18:58	1
Manganese	**12**		10	3.0	1.0	ug/L		10/31/16 18:58	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/31/16 20:20	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Client Sample ID: ZWM-99-22X

Lab Sample ID: 680-131340-5

Date Collected: 10/25/16 17:00

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	18000	J	50	50	17	ug/L		12/01/16 12:26	1
Manganese	960		10	3.0	1.0	ug/L		12/01/16 12:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	150		3.0	3.0	1.5	ug/L		10/31/16 20:25	1

Client Sample ID: ZWM-99-23X

Lab Sample ID: 680-131340-6

Date Collected: 10/25/16 11:45

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	1500		50	50	17	ug/L		10/31/16 19:41	1
Manganese	590		10	3.0	1.0	ug/L		10/31/16 19:41	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	7.7		3.0	3.0	1.5	ug/L		10/31/16 21:01	1

Client Sample ID: ZWM-99-24X

Lab Sample ID: 680-131340-7

Date Collected: 10/25/16 15:20

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	41	J	50	50	17	ug/L		10/31/16 19:47	1
Manganese	2.9	J	10	3.0	1.0	ug/L		10/31/16 19:47	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/31/16 21:07	1

Client Sample ID: ZWM-01-25X

Lab Sample ID: 680-131340-8

Date Collected: 10/25/16 12:35

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/31/16 19:52	1
Manganese	78		10	3.0	1.0	ug/L		10/31/16 19:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/31/16 21:12	1

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Client Sample ID: 69WP-08-01

Lab Sample ID: 680-131340-9

Date Collected: 10/26/16 08:40

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	7100		50	50	17	ug/L		10/31/16 19:57	1
Manganese	79		10	3.0	1.0	ug/L		10/31/16 19:57	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/31/16 21:17	1

Client Sample ID: 69WP-13-01

Lab Sample ID: 680-131340-10

Date Collected: 10/26/16 07:50

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Manganese	140		10	3.0	1.0	ug/L		10/31/16 20:03	1

Client Sample ID: 69W-DUP-1

Lab Sample ID: 680-131340-11

Date Collected: 10/25/16 17:30

Matrix: Water

Date Received: 10/27/16 09:09

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	18000		50	50	17	ug/L		11/07/16 14:52	1
Manganese	980		10	3.0	1.0	ug/L		11/07/16 14:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	140		3.0	3.0	1.5	ug/L		11/04/16 03:41	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-455375/1-A
Matrix: Water
Analysis Batch: 455769

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 455375

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/31/16 18:25	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/31/16 18:25	1

Lab Sample ID: LCS 680-455375/2-A
Matrix: Water
Analysis Batch: 455769

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 455375

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4620		ug/L		92	87 - 115
Manganese	500	496		ug/L		99	90 - 114

Lab Sample ID: MB 680-455904/1-A
Matrix: Water
Analysis Batch: 456793

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 455904

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		11/07/16 14:42	1
Manganese	3.0	U	10	3.0	1.0	ug/L		11/07/16 14:42	1

Lab Sample ID: LCS 680-455904/2-A
Matrix: Water
Analysis Batch: 456793

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 455904

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4930		ug/L		99	87 - 115
Manganese	500	504		ug/L		101	90 - 114

Lab Sample ID: 680-131340-5 MS
Matrix: Water
Analysis Batch: 459842

Client Sample ID: ZWM-99-22X
Prep Type: Dissolved
Prep Batch: 455375

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	18000	J	5000	22600		ug/L		88	87 - 115
Manganese	960		500	1430		ug/L		93	90 - 114

Lab Sample ID: 680-131340-5 MSD
Matrix: Water
Analysis Batch: 459842

Client Sample ID: ZWM-99-22X
Prep Type: Dissolved
Prep Batch: 455375

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	18000	J	5000	22500	J	ug/L		86	87 - 115	0	20
Manganese	960		500	1420		ug/L		91	90 - 114	1	20

Lab Sample ID: 680-131340-11 MS
Matrix: Water
Analysis Batch: 456793

Client Sample ID: 69W-DUP-1
Prep Type: Dissolved
Prep Batch: 455904

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	18000		5000	23200		ug/L		96	87 - 115

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-131340-11 MS
Matrix: Water
Analysis Batch: 456793

Client Sample ID: 69W-DUP-1
Prep Type: Dissolved
Prep Batch: 455904

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	980		500	1460		ug/L		96	90 - 114

Lab Sample ID: 680-131340-11 MSD
Matrix: Water
Analysis Batch: 456793

Client Sample ID: 69W-DUP-1
Prep Type: Dissolved
Prep Batch: 455904

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	18000		5000	23500		ug/L		102	87 - 115	1	20
Manganese	980		500	1460		ug/L		97	90 - 114	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-455372/1-A
Matrix: Water
Analysis Batch: 455800

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 455372

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/31/16 18:56	1

Lab Sample ID: LCS 680-455372/2-A
Matrix: Water
Analysis Batch: 455800

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 455372

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	84 - 116

Lab Sample ID: MB 680-455902/1-A
Matrix: Water
Analysis Batch: 456318

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 455902

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		11/04/16 03:31	1

Lab Sample ID: LCS 680-455902/2-A
Matrix: Water
Analysis Batch: 456318

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 455902

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	95.8		ug/L		96	84 - 116

Lab Sample ID: 680-131340-5 MS
Matrix: Water
Analysis Batch: 455800

Client Sample ID: ZWM-99-22X
Prep Type: Dissolved
Prep Batch: 455372

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	150		100	247		ug/L		100	84 - 116

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 680-131340-5 MSD — **Client Sample ID: ZWM-99-22X**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 455800 — **Prep Batch: 455372**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	150		100	248		ug/L		102	84 - 116	1	20

Lab Sample ID: 680-131340-11 MS — **Client Sample ID: 69W-DUP-1**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 456318 — **Prep Batch: 455902**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	140		100	244		ug/L		100	84 - 116

Lab Sample ID: 680-131340-11 MSD — **Client Sample ID: 69W-DUP-1**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 456318 — **Prep Batch: 455902**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	140		100	239		ug/L		94	84 - 116	2	20

Metals

Prep Batch: 455372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-1	69W-94-13	Dissolved	Water	3005A	
680-131340-2	69W-94-14	Dissolved	Water	3005A	
680-131340-3	ZWM-95-15X	Dissolved	Water	3005A	
680-131340-4	ZWM-95-18X	Dissolved	Water	3005A	
680-131340-5	ZWM-99-22X	Dissolved	Water	3005A	
680-131340-6	ZWM-99-23X	Dissolved	Water	3005A	
680-131340-7	ZWM-99-24X	Dissolved	Water	3005A	
680-131340-8	ZWM-01-25X	Dissolved	Water	3005A	
680-131340-9	69WP-08-01	Dissolved	Water	3005A	
MB 680-455372/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-455372/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-131340-5 MS	ZWM-99-22X	Dissolved	Water	3005A	
680-131340-5 MSD	ZWM-99-22X	Dissolved	Water	3005A	

Prep Batch: 455375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-1	69W-94-13	Dissolved	Water	3005A	
680-131340-2	69W-94-14	Dissolved	Water	3005A	
680-131340-3	ZWM-95-15X	Dissolved	Water	3005A	
680-131340-4	ZWM-95-18X	Dissolved	Water	3005A	
680-131340-5	ZWM-99-22X	Dissolved	Water	3005A	
680-131340-6	ZWM-99-23X	Dissolved	Water	3005A	
680-131340-7	ZWM-99-24X	Dissolved	Water	3005A	
680-131340-8	ZWM-01-25X	Dissolved	Water	3005A	
680-131340-9	69WP-08-01	Dissolved	Water	3005A	
680-131340-10	69WP-13-01	Dissolved	Water	3005A	
MB 680-455375/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-455375/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-131340-5 MS	ZWM-99-22X	Dissolved	Water	3005A	
680-131340-5 MSD	ZWM-99-22X	Dissolved	Water	3005A	

Analysis Batch: 455769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-1	69W-94-13	Dissolved	Water	6010C	455375
680-131340-2	69W-94-14	Dissolved	Water	6010C	455375
680-131340-3	ZWM-95-15X	Dissolved	Water	6010C	455375
680-131340-4	ZWM-95-18X	Dissolved	Water	6010C	455375
680-131340-6	ZWM-99-23X	Dissolved	Water	6010C	455375
680-131340-7	ZWM-99-24X	Dissolved	Water	6010C	455375
680-131340-8	ZWM-01-25X	Dissolved	Water	6010C	455375
680-131340-9	69WP-08-01	Dissolved	Water	6010C	455375
680-131340-10	69WP-13-01	Dissolved	Water	6010C	455375
MB 680-455375/1-A	Method Blank	Total Recoverable	Water	6010C	455375
LCS 680-455375/2-A	Lab Control Sample	Total Recoverable	Water	6010C	455375

Analysis Batch: 455800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-1	69W-94-13	Dissolved	Water	6020A	455372
680-131340-2	69W-94-14	Dissolved	Water	6020A	455372
680-131340-3	ZWM-95-15X	Dissolved	Water	6020A	455372
680-131340-4	ZWM-95-18X	Dissolved	Water	6020A	455372

Metals (Continued)

Analysis Batch: 455800 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-5	ZWM-99-22X	Dissolved	Water	6020A	455372
680-131340-6	ZWM-99-23X	Dissolved	Water	6020A	455372
680-131340-7	ZWM-99-24X	Dissolved	Water	6020A	455372
680-131340-8	ZWM-01-25X	Dissolved	Water	6020A	455372
680-131340-9	69WP-08-01	Dissolved	Water	6020A	455372
MB 680-455372/1-A	Method Blank	Total Recoverable	Water	6020A	455372
LCS 680-455372/2-A	Lab Control Sample	Total Recoverable	Water	6020A	455372
680-131340-5 MS	ZWM-99-22X	Dissolved	Water	6020A	455372
680-131340-5 MSD	ZWM-99-22X	Dissolved	Water	6020A	455372

Prep Batch: 455902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-11	69W-DUP-1	Dissolved	Water	3005A	
MB 680-455902/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-455902/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-131340-11 MS	69W-DUP-1	Dissolved	Water	3005A	
680-131340-11 MSD	69W-DUP-1	Dissolved	Water	3005A	

Prep Batch: 455904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-11	69W-DUP-1	Dissolved	Water	3005A	
MB 680-455904/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-455904/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-131340-11 MS	69W-DUP-1	Dissolved	Water	3005A	
680-131340-11 MSD	69W-DUP-1	Dissolved	Water	3005A	

Analysis Batch: 456318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-11	69W-DUP-1	Dissolved	Water	6020A	455902
MB 680-455902/1-A	Method Blank	Total Recoverable	Water	6020A	455902
LCS 680-455902/2-A	Lab Control Sample	Total Recoverable	Water	6020A	455902
680-131340-11 MS	69W-DUP-1	Dissolved	Water	6020A	455902
680-131340-11 MSD	69W-DUP-1	Dissolved	Water	6020A	455902

Analysis Batch: 456793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-11	69W-DUP-1	Dissolved	Water	6010C	455904
MB 680-455904/1-A	Method Blank	Total Recoverable	Water	6010C	455904
LCS 680-455904/2-A	Lab Control Sample	Total Recoverable	Water	6010C	455904
680-131340-11 MS	69W-DUP-1	Dissolved	Water	6010C	455904
680-131340-11 MSD	69W-DUP-1	Dissolved	Water	6010C	455904

Analysis Batch: 459842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-131340-5	ZWM-99-22X	Dissolved	Water	6010C	455375
680-131340-5 MS	ZWM-99-22X	Dissolved	Water	6010C	455375
680-131340-5 MSD	ZWM-99-22X	Dissolved	Water	6010C	455375

Client Sample ID: 69W-94-13

Lab Sample ID: 680-131340-1

Date Collected: 10/25/16 16:05

Matrix: Water

Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 18:41	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 20:04	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 69W-94-14

Lab Sample ID: 680-131340-2

Date Collected: 10/25/16 13:55

Matrix: Water

Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 18:47	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 20:09	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: ZWM-95-15X

Lab Sample ID: 680-131340-3

Date Collected: 10/25/16 14:40

Matrix: Water

Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 18:52	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 20:14	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: ZWM-95-18X

Lab Sample ID: 680-131340-4

Date Collected: 10/26/16 09:30

Matrix: Water

Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 18:58	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 20:20	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Client Sample ID: ZWM-99-22X

Lab Sample ID: 680-131340-5

Date Collected: 10/25/16 17:00
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			459842	12/01/16 12:26	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 20:25	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: ZWM-99-23X

Lab Sample ID: 680-131340-6

Date Collected: 10/25/16 11:45
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 19:41	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 21:01	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: ZWM-99-24X

Lab Sample ID: 680-131340-7

Date Collected: 10/25/16 15:20
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 19:47	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 21:07	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: ZWM-01-25X

Lab Sample ID: 680-131340-8

Date Collected: 10/25/16 12:35
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 19:52	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 21:12	BWR	TAL SAV
	Instrument ID: ICPMSC									

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Client Sample ID: 69WP-08-01

Lab Sample ID: 680-131340-9

Date Collected: 10/26/16 08:40
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 19:57	BCB	TAL SAV
	Instrument ID: ICPF									
Dissolved	Prep	3005A			50 mL	250 mL	455372	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6020A		1			455800	10/31/16 21:17	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: 69WP-13-01

Lab Sample ID: 680-131340-10

Date Collected: 10/26/16 07:50
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455375	10/28/16 14:20	AJR	TAL SAV
Dissolved	Analysis	6010C		1			455769	10/31/16 20:03	BCB	TAL SAV
	Instrument ID: ICPF									

Client Sample ID: 69W-DUP-1

Lab Sample ID: 680-131340-11

Date Collected: 10/25/16 17:30
Matrix: Water
Date Received: 10/27/16 09:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	455904	11/02/16 09:41	AJR	TAL SAV
Dissolved	Analysis	6010C		1			456793	11/07/16 14:52	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	455902	11/02/16 09:41	AJR	TAL SAV
Dissolved	Analysis	6020A		1			456318	11/04/16 03:41	BJB	TAL SAV
	Instrument ID: ICPMSC									

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MassDEP Analytical Protocol Certification Form

Laboratory Name: Katahdin Analytical Services, LLC. Project #:

Project Location: RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
SJ8936-1, 2, 3, 4, 5, 6, 7, 8, 9

Matrices: √ Groundwater/Surface Water Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B √	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	X Yes No X Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes No[1]

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes X No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	X Yes No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Leslie Dimond **Position:** Q.A. Officer

Printed Name: Leslie Dimond **Date:** 11/09/2016

TEST AMERICA SAVANNAH
FORT DEVENS/DCL
SJ8936

KATAHDIN ANALYTICAL SERVICES, LLC
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

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SAMPLE DATA PACKAGE

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TEST AMERICA SAVANNAH
FORT DEVENS/DCL
SJ8936

Sample Receipt

The following samples were received on October 27, 2016 and were logged in under Katahdin Analytical Services work order number SJ8936 for a hardcopy due date of November 08, 2016.

KATAHDIN Sample No.	TEST AMERICA SAVANNAH Sample Identification
SJ8936-1	69W-94-13
SJ8936-2	69W-94-14
SJ8936-3	ZWM-95-15X
SJ8936-4	ZWM-95-18X
SJ8936-5	ZWM-99-22X
SJ8936-6	ZWM-99-23X
SJ8936-7	ZWM-99-24X
SJ8936-8	ZWM-01-25X
SJ8936-9	69W-DUP-01

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SJ8936 were analyzed in accordance with Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MADEP, May 2004, Revision 1.1, and/or for the specific methods listed below or on the Report of Analysis.

MA-EPH Analysis

Samples SJ8936-1, 3, 3RE, 4, 5, 6, and 9 were manually integrated for the target analytes naphthalene, fluorene, the extraction surrogates o-terphenyl and 5-alpha androstane, the C11-C22 aromatic range, the C19-C36 aliphatic range and the fractionation surrogates 2-bromonaphthalene and/or 2-fluorobiphenyl. The specific reasons for the manual integrations are indicated on the

raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SJ8936-3 had low recoveries for the extraction surrogates o-terphenyl and 5-alpha androstane that were outside of the method acceptance limits. The sample was reextracted within hold time and had a low recovery for 5-alpha androstane. The results from both extractions are reported.

Positive results, based on the GC-FID analysis, for polynuclear aromatic hydrocarbons (PAH) were confirmed by GC/MS for PAH analysis according to SW-846 method 8270 in the SIM mode. The reported results are from the initial GC-FID analysis.

All of the closing continuing calibration standards met the method allowance of four or less compounds that exhibited percent differences greater than 25% but less than 40%.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.09.16

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC. Sample Receipt Condition Report

Client: TA - SAV	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: Fedex
KAS Work Order#: 517936	KIMS Review By:	Received By: JO
SDG #:	Cooler: 1 of 2	Date/Time Rec.: 10-27-16 900

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. **Sample Receipt Condition Report**

Client: TA-SAV	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: Fedex
KAS Work Order#: SJ8936	KIMS Review By: JO	Received By: JO
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 10-27-16 900

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

SJ89936

360325-Boston 360325-Boston

COC / Workorder#: Devens - AOC 69W

Chain of Custody Record

Page: 1 of: 1

Company:	KOMAN GS, LLC
Address:	160 East Main Street, Suite 2F Westborough, MA
Phone: 508-366-7442	Fax: 508-366-7445
Sampled by [Print Name(s)]/Affiliation	Kim Anderson KGS
Sampler(s) Signature(s)	

Laboratory: Test America - Savannah
Address:
Contact: Jerry Lanier
Regulatory Facility No.
Project Name: Devens Fall 2016 LTM
Sampling QAP No.:
Approval Date:
TAT
Other:

Preservatives (see codes): H | N

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	EPH/MADEP 2-1 liter amber glass (HCl)	Dissolved Metals*- SW6010/6020 1-250ml poly (HNO3)	Remarks	Lab. No.
	69W-94-13	10/25	1605	P	GW	3	X	X		
	69W-94-14	10/25	1355	P	GW	3	X	X		
	ZWM-95-15X	10/25	1440	P	GW	3	X	X		
	ZWM-95-18X	10/26	930	P	GW	3	X	X		
	ZWM-99-22X	10/25	1700	P	GW	3	X	X	MS/MSD	
	ZWM-99-23X	10/25	1145	P	GW	3	X	X		
	ZWM-99-24X	10/25	1520	P	GW	3	X	X		
	ZWM-01-25X	10/25	1235	P	GW	3	X	X		
	69WP-08-01	10/26	810	P	GW	1	--	X	Dissolved metals only	
	69WP-13-01	10/26	750	P	GW	1	--	X	Dissolved Mn only	
	69W-DUP-1	10/25	1730	P	GW	3	X	X		

EPH TO KATAHDIN

THE REST TO SAVANNAH

courier pick up — 0 ← Total Number of Containers

Shipping Details
Date Out: Via:
Returned: Via:

Additional Comments:
* = **Dissolved Metals** include: Fe, Mn (6010); As (6020)

Item No.	Relinquished by/Affiliation	Date	Time
		10/26/16	1035
RECEIVED		10-26-16	1430
Relinquished		10-26-16	1800
Rec'd		10-26-16	900

email logins and results to:
lekes@komangs.com
eanderson@komangs.com

Lab Comments
Seal #
Preserve Where Applicable
On ICE
Temperature _____ C

- NJ Reduced
- NJ Full
- Full CLP
- Disk Deliverable
- Other (Specify)

NJ Data Deliverable Info
- Commercial "A"
- Commercial "B"
- State Forms

MATRIX CODES: GW = Groundwat SE = Sediment SP = Soil SW = Surface Water O = Other
PRESERVATIVE CODES: H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol O = Other
COLLECTION METHOD COI C = Composite G=Grab P= Pumping O = Other

000007

12/2/2016

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Oct. 31, 2016
08:49 AM

Login Number: SJ8936

Account: TASAV001 NoWeb
Test America Savannah

Project: TASAV-DEVENS

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL. "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-130852
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	2.8
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	GN
PM	:	JO
PROJECT NAME	:	Fort Devens/DCL
QC LEVEL	:	IV
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-1	69W-94-13	25-OCT-16 16:05	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-2	69W-94-14	25-OCT-16 13:55	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-3	ZWM-95-15X	25-OCT-16 14:40	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-4	ZWM-95-18X	26-OCT-16 09:30	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	09-NOV-16	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-5	ZWM-99-22X	25-OCT-16 17:00	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		MS/MSD

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-6	ZWM-99-23X	25-OCT-16 11:45	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-7	ZWM-99-24X	25-OCT-16 15:20	27-OCT-16			08-NOV-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

10.31.16

000008

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Oct. 31, 2016
08:49 AM

Login Number: SJ8936

Quote/Incoming:

Account: TASAV001 NoWeb
Test America Savannah

Project: TASAV-DEVENS

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SJ8936-8	ZWM-01-25X	25-OCT-16 12:35	27-OCT-16			08-NOV-16	

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

SJ8936-9	69W-DUP-01	25-OCT-16 17:30	27-OCT-16			08-NOV-16	

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Aqueous	S	MA-EPH	08-NOV-16	1L N-Amber Glass		

Total Samples: *9* ***Total Analyses:*** *9*

10-31-16

0000009

SAMPLE DATA SUMMARY PACKAGE

1
2
3
4
5
6
7
8
9
10
11
12
13
14

1 2 3 4 5 6 7 8 9 10 11 12 13 14

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-1
Client ID: 69W-94-13
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2014.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 01-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics		410	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics		1100	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics		160	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics		410	ug/L	1	100	94.	47.	71.
Naphthalene	J	1.4	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	J	1.6	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		48.5	%					
o-Terphenyl		65.6	%					
2-Fluorobiphenyl		71.3	%					
2-Bromonaphthalene		69.7	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-2
Client ID: 69W-94-14
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2015.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 01-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	110	ug/L	1	100	110	56.	83.
C9-C18 Aliphatics	U	110	ug/L	1	100	110	56.	83.
C19-C36 Aliphatics	U	110	ug/L	1	100	110	56.	83.
C11-C22 Aromatics	U	110	ug/L	1	100	110	56.	83.
Naphthalene	U	2.2	ug/L	1	2	2.2	1.0	1.7
2-Methylnaphthalene	U	2.2	ug/L	1	2	2.2	0.89	1.7
Phenanthrene	U	2.2	ug/L	1	2	2.2	1.0	1.7
Acenaphthylene	U	2.2	ug/L	1	2	2.2	0.89	1.7
Acenaphthene	U	2.2	ug/L	1	2	2.2	2.0	2.1
Anthracene	U	2.2	ug/L	1	2	2.2	1.6	1.7
Benzo(a)anthracene	U	2.2	ug/L	1	2	2.2	1.6	1.7
Benzo(a)pyrene	U	2.2	ug/L	1	2	2.2	1.4	1.7
Benzo(b)fluoranthene	U	2.2	ug/L	1	2	2.2	0.89	1.7
Benzo(g,h,i)perylene	U	2.2	ug/L	1	2	2.2	1.4	1.7
Benzo(k)fluoranthene	U	2.2	ug/L	1	2	2.2	1.1	1.7
Chrysene	U	2.2	ug/L	1	2	2.2	1.0	1.7
Dibenzo(a,h)anthracene	U	2.2	ug/L	1	2	2.2	1.3	1.7
Fluoranthene	U	2.2	ug/L	1	2	2.2	0.89	1.7
Fluorene	U	2.2	ug/L	1	2	2.2	1.0	1.7
Indeno(1,2,3-cd)pyrene	U	2.2	ug/L	1	2	2.2	1.6	1.7
Pyrene	U	2.2	ug/L	1	2	2.2	1.2	1.7
5-Alpha Androstane		63.2	%					
o-Terphenyl		50.7	%					
2-Fluorobiphenyl		54.6	%					
2-Bromonaphthalene		55.0	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-3
Client ID: ZWM-95-15X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2016.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 01-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics		100	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics		220	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics		120	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics		100	ug/L	1	100	94.	47.	71.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane	*	35.0	%					
o-Terphenyl	*	39.1	%					
2-Fluorobiphenyl		59.8	%					
2-Bromonaphthalene		58.6	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-3RE
Client ID: ZWM-95-15X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2062.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 04-NOV-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG194143

Analysis Date: 09-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics		200	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics		120	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane	*	38.2	%					
o-Terphenyl		53.2	%					
2-Fluorobiphenyl		85.9	%					
2-Bromonaphthalene		85.7	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-4
Client ID: ZWM-95-18X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2017.D

Sample Date: 26-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 01-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics		240	ug/L	1	100	100	52.	78.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	52.	78.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	52.	78.
C11-C22 Aromatics		240	ug/L	1	100	100	52.	78.
Naphthalene	U	2.1	ug/L	1	2	2.1	0.94	1.6
2-Methylnaphthalene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Phenanthrene	U	2.1	ug/L	1	2	2.1	0.94	1.6
Acenaphthylene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Acenaphthene	U	2.1	ug/L	1	2	2.1	1.9	2.0
Anthracene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(a)anthracene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(a)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(b)fluoranthene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Benzo(g,h,i)perylene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(k)fluoranthene	U	2.1	ug/L	1	2	2.1	1.0	1.6
Chrysene	U	2.1	ug/L	1	2	2.1	0.94	1.6
Dibenzo(a,h)anthracene	U	2.1	ug/L	1	2	2.1	1.2	1.6
Fluoranthene	U	2.1	ug/L	1	2	2.1	0.83	1.6
Fluorene	U	2.1	ug/L	1	2	2.1	0.94	1.6
Indeno(1,2,3-cd)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Pyrene	U	2.1	ug/L	1	2	2.1	1.1	1.6
5-Alpha Androstane		54.5	%					
o-Terphenyl		64.2	%					
2-Fluorobiphenyl		69.1	%					
2-Bromonaphthalene		64.9	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-5
Client ID: ZWM-99-22X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2018.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 01-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics		210	ug/L	1	100	100	53.	79.
C9-C18 Aliphatics	U	100	ug/L	1	100	100	53.	79.
C19-C36 Aliphatics	U	100	ug/L	1	100	100	53.	79.
C11-C22 Aromatics		210	ug/L	1	100	100	53.	79.
Naphthalene	J	1.3	ug/L	1	2	2.1	0.95	1.6
2-Methylnaphthalene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Phenanthrene	U	2.1	ug/L	1	2	2.1	0.95	1.6
Acenaphthylene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Acenaphthene	U	2.1	ug/L	1	2	2.1	1.9	2.0
Anthracene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Benzo(a)anthracene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Benzo(a)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(b)fluoranthene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Benzo(g,h,i)perylene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(k)fluoranthene	U	2.1	ug/L	1	2	2.1	1.0	1.6
Chrysene	U	2.1	ug/L	1	2	2.1	0.95	1.6
Dibenzo(a,h)anthracene	U	2.1	ug/L	1	2	2.1	1.3	1.6
Fluoranthene	U	2.1	ug/L	1	2	2.1	0.84	1.6
Fluorene	J	1.4	ug/L	1	2	2.1	0.95	1.6
Indeno(1,2,3-cd)pyrene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Pyrene	U	2.1	ug/L	1	2	2.1	1.2	1.6
5-Alpha Androstane		58.4	%					
o-Terphenyl		64.0	%					
2-Fluorobiphenyl		67.8	%					
2-Bromonaphthalene		66.6	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-6
Client ID: ZWM-99-23X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2019.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 02-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics		110	ug/L	1	100	110	53.	80.
C9-C18 Aliphatics	U	110	ug/L	1	100	110	53.	80.
C19-C36 Aliphatics	U	110	ug/L	1	100	110	53.	80.
C11-C22 Aromatics		110	ug/L	1	100	110	53.	80.
Naphthalene	U	2.1	ug/L	1	2	2.1	0.96	1.6
2-Methylnaphthalene	U	2.1	ug/L	1	2	2.1	0.85	1.6
Phenanthrene	U	2.1	ug/L	1	2	2.1	0.96	1.6
Acenaphthylene	U	2.1	ug/L	1	2	2.1	0.85	1.6
Acenaphthene	U	2.1	ug/L	1	2	2.1	1.9	2.0
Anthracene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Benzo(a)anthracene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Benzo(a)pyrene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(b)fluoranthene	U	2.1	ug/L	1	2	2.1	0.85	1.6
Benzo(g,h,i)perylene	U	2.1	ug/L	1	2	2.1	1.4	1.6
Benzo(k)fluoranthene	U	2.1	ug/L	1	2	2.1	1.1	1.6
Chrysene	U	2.1	ug/L	1	2	2.1	0.96	1.6
Dibenzo(a,h)anthracene	U	2.1	ug/L	1	2	2.1	1.3	1.6
Fluoranthene	U	2.1	ug/L	1	2	2.1	0.85	1.6
Fluorene	U	2.1	ug/L	1	2	2.1	0.96	1.6
Indeno(1,2,3-cd)pyrene	U	2.1	ug/L	1	2	2.1	1.5	1.6
Pyrene	U	2.1	ug/L	1	2	2.1	1.2	1.6
5-Alpha Androstane		53.5	%					
o-Terphenyl		84.2	%					
2-Fluorobiphenyl		90.6	%					
2-Bromonaphthalene		91.1	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-7
Client ID: ZWM-99-24X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2020.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 02-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	J	52	ug/L	1	100	96.	48.	72.
C9-C18 Aliphatics	U	96	ug/L	1	100	96.	48.	72.
C19-C36 Aliphatics	U	96	ug/L	1	100	96.	48.	72.
C11-C22 Aromatics	J	52	ug/L	1	100	96.	48.	72.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.86	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.77	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.86	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.77	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.77	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.96	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.86	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.77	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.86	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		49.9	%					
o-Terphenyl		69.7	%					
2-Fluorobiphenyl		79.9	%					
2-Bromonaphthalene		80.1	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-8
Client ID: ZWM-01-25X
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2021.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 02-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics	U	94	ug/L	1	100	94.	47.	71.
Naphthalene	U	1.9	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		55.1	%					
o-Terphenyl		54.6	%					
2-Fluorobiphenyl		42.9	%					
2-Bromonaphthalene		43.8	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: SJ8936-9
Client ID: 69W-DUP-01
Project: Fort Devens/DCL
SDG: SJ8936
Lab File ID: CJK2022.D

Sample Date: 25-OCT-16
Received Date: 27-OCT-16
Extract Date: 28-OCT-16
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG193632

Analysis Date: 02-NOV-16
Analyst: AC
Analysis Method: MA DEP EPH 04-1.1
Matrix: AQ
% Solids: NA
Report Date: 09-NOV-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Unadjusted C11-C22 Aromatics	J	84	ug/L	1	100	94.	47.	71.
C9-C18 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C19-C36 Aliphatics	U	94	ug/L	1	100	94.	47.	71.
C11-C22 Aromatics	J	84	ug/L	1	100	94.	47.	71.
Naphthalene	J	0.90	ug/L	1	2	1.9	0.85	1.4
2-Methylnaphthalene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Phenanthrene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Acenaphthylene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Acenaphthene	U	1.9	ug/L	1	2	1.9	1.7	1.8
Anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)anthracene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Benzo(a)pyrene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(b)fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Benzo(g,h,i)perylene	U	1.9	ug/L	1	2	1.9	1.2	1.4
Benzo(k)fluoranthene	U	1.9	ug/L	1	2	1.9	0.94	1.4
Chrysene	U	1.9	ug/L	1	2	1.9	0.85	1.4
Dibenzo(a,h)anthracene	U	1.9	ug/L	1	2	1.9	1.1	1.4
Fluoranthene	U	1.9	ug/L	1	2	1.9	0.75	1.4
Fluorene	J	1.1	ug/L	1	2	1.9	0.85	1.4
Indeno(1,2,3-cd)pyrene	U	1.9	ug/L	1	2	1.9	1.3	1.4
Pyrene	U	1.9	ug/L	1	2	1.9	1.0	1.4
5-Alpha Androstane		71.4	%					
o-Terphenyl		55.1	%					
2-Fluorobiphenyl		58.5	%					
2-Bromonaphthalene		59.5	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

COC / Workorder#

Devens - AOC 69W

Chain of Custody Record

Page: 1 of: 1

Company:	KOMAN GS, LLC
Address:	160 East Main Street, Suite 2F Westborough, MA
Phone:	508-366-7442 Fax: 508-366-7445
Sampled by [Print Name(s)]/Affiliation	Kevin Anderson 1665
Sampler(s) Signature(s)	

Laboratory: Test America - Savannah
Address:
Contact: Jerry Lanier
Regulatory Facility No.
Project Name: Devens Fall 2016 LTM
Sampling QAP No.
Approval Date:
TAT
Other

Preservatives (see codes): H | N

Analyses Requested: EPH/MADEP 2-1 liter amber glass (HCl); Dissolved Metals*- SW6010/6020 1-250ml poly (HNO3)

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	EPH/MADEP	Dissolved Metals*	Remarks	Lab. No.
	69W-94-13	10/25	1685	P	GW	3	X	X		
	69W-94-14	10/25	1355	P	GW	3	X	X		
	ZWM-95-15X	10/25	1440	P	GW	3	X	X		
	ZWM-95-18X	10/26	930	P	GW	3	X	X		
	ZWM-99-22X	10/25	1700	P	GW	3	X	X	MS/MSD	
	ZWM-99-23X	10/25	1145	P	GW	3	X	X		
	ZWM-99-24X	10/25	1520	P	GW	3	X	X		
	ZWM-01-25X	10/25	1235	P	GW	3	X	X		
	69WP-08-01	10/26	840	P	GW	1	--	X	Dissolved metals only	
	69WP-13-01	10/26	750	P	GW	1	--	X	Dissolved Mn only	
	69W-DUP-1	10/25	1730	P	GW	3	X	X		

680-131340 Chain of Custody

Shipping Details: courier pick up — 0 ← Total Number of Containers

Date Out:	Via:	Item No.	Relinquished by/Affiliation	Date	Time		Date	Time
Returned:	Via:			10/26/16	1035			9:09 10/27/16
Additional Comments:		RECEIVED	—	10-26-16	1430			
* = **Dissolved Metals** include: Fe, Mn (6010); As (6020)		Relinquished		10-26-16	1800			

TA 0.5/0.4

email logins and results to:

lekes@komangs.com

eanderson@komangs.com

Lab Comments

Seal # _____ Preserve Where Applicable ☐ On ICE ☐

Temperature _____ C

☐ NJ Reduced
☐ NJ Full
☐ Full CLP
☐ Disk Deliverable
☐ Other (Specify)

NJ Data Deliverable Info

☐ Commercial "A"
☐ Commercial "B"
☐ State Forms

MATRIX CODES:	GW = Groundwat	SE = Sediment	SP = Soil	SW = Surface Water	O = Other
PRESERVATIVE CODES:	H = HCL + Ice	I = Ice Only	N = Nitric Acid + Ice	S = Sulfuric Acid + Ice	M = Methanol O = Other
COLLECTION METHOD COI	C = Composite	G=Grab	P= Pumping		O = Other

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-131340-1

Login Number: 131340

List Source: TestAmerica Savannah

List Number: 1

Creator: Ragnaldsen, Amy E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / AOC 69W

TestAmerica Job ID: 680-131340-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-133049-1
Client Project/Site: Fort Devens / DCL Leachate

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
1/3/2017 1:46:37 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-133049-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Fort Devens / DCL Leachate

Report Number: 680-133049-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 12/10/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4º C, 3.5º C, 3.7º C and 6.0º C.

DIESEL RANGE ORGANICS (DRO)
Sample DCL Leachate (680-133049-1) was analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 8015C. The samples were prepared on 12/11/2016 and analyzed on 12/13/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PESTICIDES AND PCBS
Sample DCL Leachate (680-133049-1) was analyzed for Pesticides and PCBs in accordance with EPA SW-846 Method 8081B_8082A. The samples were prepared on 12/12/2016 and analyzed on 12/14/2016.

The closing continuing calibration verification (CCV) standard associated with batch 680-461544 failed to meet acceptance limits for Endrin. The associated samples were re-analyzed following a successful CCV and produced similar results, indicating that the sample matrix is adversely affecting the instrument and causing the failures.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Sample DCL Leachate (680-133049-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 12/17/2016 and analyzed on 12/19/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS
Sample DCL Leachate (680-133049-1) was analyzed for Metals in accordance with EPA SW-846 Method 6020. The samples were prepared on 12/17/2016 and analyzed on 12/20/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Sample DCL Leachate (680-133049-1) was analyzed for mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared and analyzed on 12/14/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 680-133049-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

TOTAL SUSPENDED SOLIDS
Sample DCL Leachate (680-133049-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 12/14/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CYANIDE
Sample DCL Leachate (680-133049-1) was analyzed for cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 12/19/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PH
Sample DCL Leachate (680-133049-1) was analyzed for pH in accordance with EPA SW-846 Method 9040C. The samples were analyzed on 12/20/2016.

This analysis is considered a field test and is to be performed within 15 minutes of collection. This sample(s) was performed in the laboratory outside the 15 minute timeframe.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PHENOLICS, TOTAL RECOVERABLE
Sample DCL Leachate (680-133049-1) was analyzed for phenolics, total recoverable in accordance with EPA SW-846 Method 9065. The samples were prepared and analyzed on 12/15/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-133049-1	DCL Leachate	Water	12/08/16 08:00	12/10/16 11:02

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Method	Method Description	Protocol	Laboratory
8015C DRO	Diesel Range Organics (DRO) (GC)	SW846	TAL SAV
8081B 8082A	Organochlorine Pesticides & PCBs (GC)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL SAV
9012B	Cyanide, Total and/or Amenable	EPA	TAL SAV
9040C	pH	SW846	TAL SAV
9065	Phenolics, Total Recoverable	SW846	TAL SAV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
Q	One or more quality control criteria failed.
M	Manual integrated compound.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Client Sample ID: DCL Leachate
Date Collected: 12/08/16 08:00
Date Received: 12/10/16 11:02

Lab Sample ID: 680-133049-1
Matrix: Water

Method: 8015C DRO - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.87		0.096	0.082	0.048	mg/L		12/13/16 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*91*		*56 - 125*	*12/11/16 14:20*	*12/13/16 00:17*	*1*

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.017	U	0.048	0.017	0.0069	ug/L		12/14/16 19:19	1
alpha-BHC	0.0095	U	0.048	0.0095	0.0032	ug/L		12/14/16 19:19	1
beta-BHC	0.017	U	0.048	0.017	0.0087	ug/L		12/14/16 19:19	1
Chlordane (technical)	0.29	U	0.48	0.29	0.091	ug/L		12/14/16 19:19	1
4,4'-DDD	0.0095	U	0.048	0.0095	0.0060	ug/L		12/14/16 19:19	1
4,4'-DDE	0.0095	U	0.048	0.0095	0.0049	ug/L		12/14/16 19:19	1
4,4'-DDT	0.017	U	0.048	0.017	0.0067	ug/L		12/14/16 19:19	1
delta-BHC	0.017	U	0.048	0.017	0.0072	ug/L		12/14/16 19:19	1
Dieldrin	0.0095	U	0.048	0.0095	0.0036	ug/L		12/14/16 19:19	1
Endosulfan I	0.0095	U	0.048	0.0095	0.0033	ug/L		12/14/16 19:19	1
Endosulfan II	0.0095	U	0.048	0.0095	0.0040	ug/L		12/14/16 19:19	1
Endosulfan sulfate	0.0095	U	0.048	0.0095	0.0049	ug/L		12/14/16 19:19	1
Endrin	0.0095	U Q	0.048	0.0095	0.0051	ug/L		12/14/16 19:19	1
Endrin aldehyde	0.0095	U	0.048	0.0095	0.0058	ug/L		12/14/16 19:19	1
Endrin ketone	0.0095	U	0.048	0.0095	0.0044	ug/L		12/14/16 19:19	1
gamma-BHC (Lindane)	0.0095	U	0.048	0.0095	0.0034	ug/L		12/14/16 19:19	1
Heptachlor	0.017	U	0.048	0.017	0.0068	ug/L		12/14/16 19:19	1
Heptachlor epoxide	0.0095	U	0.048	0.0095	0.0035	ug/L		12/14/16 19:19	1
Methoxychlor	0.017	U	0.048	0.017	0.0093	ug/L		12/14/16 19:19	1
PCB-1016	0.34	U	0.95	0.34	0.17	ug/L		12/14/16 19:19	1
PCB-1221	0.31	U	0.95	0.31	0.18	ug/L		12/14/16 19:19	1
PCB-1232	0.43	U	0.95	0.43	0.24	ug/L		12/14/16 19:19	1
PCB-1242	0.43	U	0.95	0.43	0.18	ug/L		12/14/16 19:19	1
PCB-1248	0.43	U	0.95	0.43	0.20	ug/L		12/14/16 19:19	1
PCB-1254	0.31	U	0.95	0.31	0.10	ug/L		12/14/16 19:19	1
PCB-1260	0.34	U	0.95	0.34	0.11	ug/L		12/14/16 19:19	1
Toxaphene	0.76	U	4.8	0.76	0.38	ug/L		12/14/16 19:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*39*		*14 - 130*	*12/12/16 15:22*	*12/14/16 19:19*	*1*
Tetrachloro-m-xylene	*47*		*44 - 124*	*12/12/16 15:22*	*12/14/16 19:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	200	70	24	ug/L		12/19/16 19:13	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		12/19/16 19:13	1
Chromium	4.0	U	10	4.0	1.6	ug/L		12/19/16 19:13	1
Copper	5.0	U	20	5.0	1.8	ug/L		12/19/16 19:13	1
Lead	10	U	10	10	3.9	ug/L		12/19/16 19:13	1
Nickel	3.7	J	40	5.0	2.1	ug/L		12/19/16 19:13	1
Silver	1.5	U	10	1.5	0.60	ug/L		12/19/16 19:13	1
Zinc	20	U	20	20	7.0	ug/L		12/19/16 19:13	1

Client Sample Results

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Client Sample ID: DCL Leachate
Date Collected: 12/08/16 08:00
Date Received: 12/10/16 11:02

Lab Sample ID: 680-133049-1
Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		12/20/16 00:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		12/14/16 16:18	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U J	0.010	0.0050	0.0025	mg/L		12/19/16 11:54	1
pH	**7.7**					SU		12/20/16 17:09	1
Phenolics, Total Recoverable	0.050	U	0.050	0.050	0.025	mg/L		12/15/16 13:24	1
Total Suspended Solids	**1.2**	**J**	4.0	2.8	1.1	mg/L		12/14/16 15:56	1

Surrogate Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Method: 8015C DRO - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTPH1 (56-125)
680-133049-1	DCL Leachate	91
LCS 680-461041/14-A	Lab Control Sample	94 M
LCSD 680-461041/15-A	Lab Control Sample Dup	90 M
MB 680-461041/13-A	Method Blank	96

Surrogate Legend

OTPH = o-Terphenyl (Surr)

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (14-130)	TCX2 (44-124)
680-133049-1	DCL Leachate	39	47

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB1 (14-130)	TCX1 (44-124)
LCS 680-461110/15-A	Lab Control Sample	36	62
LCS 680-461110/18-A	Lab Control Sample	38	75
MB 680-461110/14-A	Method Blank	49	68

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8015C DRO - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 680-461041/13-A
Matrix: Water
Analysis Batch: 461246

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 461041

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.085	U	0.10	0.085	0.050	mg/L		12/12/16 19:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*96*		*56 - 125*	*12/11/16 14:20*	*12/12/16 19:06*	*1*

Lab Sample ID: LCS 680-461041/14-A
Matrix: Water
Analysis Batch: 461246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 461041

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			1.00	0.854		mg/L		85	36 - 132		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*94*	*M*	*56 - 125*

Lab Sample ID: LCSD 680-461041/15-A
Matrix: Water
Analysis Batch: 461246

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 461041

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]			1.00	0.845		mg/L		84	36 - 132	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*90*	*M*	*56 - 125*

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Lab Sample ID: MB 680-461110/14-A
Matrix: Water
Analysis Batch: 461557

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 461110

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U	0.050	0.018	0.0072	ug/L		12/14/16 16:39	1
alpha-BHC	0.010	U	0.050	0.010	0.0034	ug/L		12/14/16 16:39	1
beta-BHC	0.018	U	0.050	0.018	0.0091	ug/L		12/14/16 16:39	1
Chlordane (technical)	0.30	U	0.50	0.30	0.095	ug/L		12/14/16 16:39	1
4,4'-DDD	0.010	U	0.050	0.010	0.0063	ug/L		12/14/16 16:39	1
4,4'-DDE	0.010	U	0.050	0.010	0.0051	ug/L		12/14/16 16:39	1
4,4'-DDT	0.018	U	0.050	0.018	0.0070	ug/L		12/14/16 16:39	1
delta-BHC	0.018	U	0.050	0.018	0.0075	ug/L		12/14/16 16:39	1
Dieldrin	0.010	U	0.050	0.010	0.0038	ug/L		12/14/16 16:39	1
Endosulfan I	0.010	U	0.050	0.010	0.0035	ug/L		12/14/16 16:39	1
Endosulfan II	0.010	U	0.050	0.010	0.0042	ug/L		12/14/16 16:39	1
Endosulfan sulfate	0.010	U	0.050	0.010	0.0051	ug/L		12/14/16 16:39	1
Endrin	0.010	U	0.050	0.010	0.0053	ug/L		12/14/16 16:39	1

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Lab Sample ID: MB 680-461110/14-A
Matrix: Water
Analysis Batch: 461557

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 461110

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endrin aldehyde	0.010	U	0.050	0.010	0.0061	ug/L		12/14/16 16:39	1
Endrin ketone	0.010	U	0.050	0.010	0.0046	ug/L		12/14/16 16:39	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	0.0036	ug/L		12/14/16 16:39	1
Heptachlor	0.018	U	0.050	0.018	0.0071	ug/L		12/14/16 16:39	1
Heptachlor epoxide	0.010	U	0.050	0.010	0.0037	ug/L		12/14/16 16:39	1
Methoxychlor	0.018	U	0.050	0.018	0.0098	ug/L		12/14/16 16:39	1
PCB-1016	0.36	U	1.0	0.36	0.18	ug/L		12/14/16 16:39	1
PCB-1221	0.33	U	1.0	0.33	0.19	ug/L		12/14/16 16:39	1
PCB-1232	0.45	U	1.0	0.45	0.25	ug/L		12/14/16 16:39	1
PCB-1242	0.45	U	1.0	0.45	0.19	ug/L		12/14/16 16:39	1
PCB-1248	0.45	U	1.0	0.45	0.21	ug/L		12/14/16 16:39	1
PCB-1254	0.33	U	1.0	0.33	0.11	ug/L		12/14/16 16:39	1
PCB-1260	0.36	U	1.0	0.36	0.12	ug/L		12/14/16 16:39	1
Toxaphene	0.80	U	5.0	0.80	0.40	ug/L		12/14/16 16:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*49*		*14 - 130*	*12/12/16 15:22*	*12/14/16 16:39*	*1*
Tetrachloro-m-xylene	*68*		*44 - 124*	*12/12/16 15:22*	*12/14/16 16:39*	*1*

Lab Sample ID: LCS 680-461110/15-A
Matrix: Water
Analysis Batch: 461557

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 461110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.100	0.0691		ug/L		69	45 - 134
alpha-BHC	0.100	0.0784		ug/L		78	54 - 138
beta-BHC	0.100	0.0842		ug/L		84	56 - 136
4,4'-DDD	0.100	0.0742		ug/L		74	56 - 143
4,4'-DDE	0.100	0.0758		ug/L		76	57 - 135
4,4'-DDT	0.100	0.0835		ug/L		83	51 - 143
delta-BHC	0.100	0.0894		ug/L		89	52 - 142
Dieldrin	0.100	0.0800		ug/L		80	60 - 136
Endosulfan I	0.100	0.0828		ug/L		83	62 - 126
Endosulfan II	0.100	0.0812		ug/L		81	52 - 135
Endosulfan sulfate	0.100	0.0808		ug/L		81	62 - 133
Endrin	0.100	0.0792		ug/L		79	60 - 138
Endrin aldehyde	0.100	0.0713		ug/L		71	51 - 132
Endrin ketone	0.100	0.0816		ug/L		82	58 - 134
gamma-BHC (Lindane)	0.100	0.0764		ug/L		76	59 - 134
Heptachlor	0.100	0.0647		ug/L		65	54 - 130
Heptachlor epoxide	0.100	0.0835		ug/L		83	61 - 133
Methoxychlor	0.100	0.0824		ug/L		82	54 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*36*		*14 - 130*
Tetrachloro-m-xylene	*62*		*44 - 124*

Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Lab Sample ID: LCS 680-461110/18-A
Matrix: Water
Analysis Batch: 461557

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 461110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	6.00	5.29		ug/L		88	46 - 129
PCB-1260	6.00	4.57		ug/L		76	45 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*38*		*14 - 130*
Tetrachloro-m-xylene	*75*		*44 - 124*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-462069/1-A
Matrix: Water
Analysis Batch: 462386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 462069

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	200	70	24	ug/L		12/19/16 19:04	1
Cadmium	3.0	U	5.0	3.0	1.0	ug/L		12/19/16 19:04	1
Chromium	4.0	U	10	4.0	1.6	ug/L		12/19/16 19:04	1
Copper	5.0	U	20	5.0	1.8	ug/L		12/19/16 19:04	1
Lead	10	U	10	10	3.9	ug/L		12/19/16 19:04	1
Nickel	5.0	U	40	5.0	2.1	ug/L		12/19/16 19:04	1
Silver	1.5	U	10	1.5	0.60	ug/L		12/19/16 19:04	1
Zinc	20	U	20	20	7.0	ug/L		12/19/16 19:04	1

Lab Sample ID: LCS 680-462069/2-A
Matrix: Water
Analysis Batch: 462386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 462069

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5000	5070		ug/L		101	86 - 115
Cadmium	50.0	51.9		ug/L		104	88 - 113
Chromium	100	105		ug/L		105	90 - 113
Copper	100	104		ug/L		104	86 - 114
Lead	500	511		ug/L		102	86 - 113
Nickel	100	102		ug/L		102	88 - 113
Silver	50.0	51.1		ug/L		102	84 - 115
Zinc	100	103		ug/L		103	87 - 115

Lab Sample ID: 680-133049-1 MS
Matrix: Water
Analysis Batch: 462386

Client Sample ID: DCL Leachate
Prep Type: Total/NA
Prep Batch: 462069

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	70	U	5000	5230		ug/L		105	86 - 115
Cadmium	3.0	U	50.0	52.9		ug/L		106	88 - 113
Chromium	4.0	U	100	107		ug/L		107	90 - 113
Copper	5.0	U	100	107		ug/L		107	86 - 114
Lead	10	U	500	519		ug/L		104	86 - 113
Nickel	3.7	J	100	105		ug/L		102	88 - 113

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-133049-1 MS
Matrix: Water
Analysis Batch: 462386

Client Sample ID: DCL Leachate
Prep Type: Total/NA
Prep Batch: 462069

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	1.5	U	50.0	52.6		ug/L		105	84 - 115
Zinc	20	U	100	105		ug/L		105	87 - 115

Lab Sample ID: 680-133049-1 MSD
Matrix: Water
Analysis Batch: 462386

Client Sample ID: DCL Leachate
Prep Type: Total/NA
Prep Batch: 462069

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	70	U	5000	5250		ug/L		105	86 - 115	0	20
Cadmium	3.0	U	50.0	52.8		ug/L		106	88 - 113	0	20
Chromium	4.0	U	100	107		ug/L		107	90 - 113	0	20
Copper	5.0	U	100	108		ug/L		108	86 - 114	1	20
Lead	10	U	500	517		ug/L		103	86 - 113	0	20
Nickel	3.7	J	100	106		ug/L		103	88 - 113	1	20
Silver	1.5	U	50.0	52.6		ug/L		105	84 - 115	0	20
Zinc	20	U	100	106		ug/L		106	87 - 115	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-462067/1-A
Matrix: Water
Analysis Batch: 462371

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 462067

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		12/20/16 00:46	1

Lab Sample ID: LCS 680-462067/2-A
Matrix: Water
Analysis Batch: 462371

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 462067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	104		ug/L		104	84 - 116

Lab Sample ID: 680-133049-1 MS
Matrix: Water
Analysis Batch: 462371

Client Sample ID: DCL Leachate
Prep Type: Total/NA
Prep Batch: 462067

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	3.0	U	100	113		ug/L		113	84 - 116

Lab Sample ID: 680-133049-1 MSD
Matrix: Water
Analysis Batch: 462371

Client Sample ID: DCL Leachate
Prep Type: Total/NA
Prep Batch: 462067

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	3.0	U	100	106		ug/L		106	84 - 116	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-461495/13-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 461791 — **Prep Batch: 461495**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	0.080	ug/L		12/14/16 15:48	1

Lab Sample ID: LCS 680-461495/14-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 461791 — **Prep Batch: 461495**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.47		ug/L		99	80 - 124

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 680-462141/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 462232 — **Prep Batch: 462141**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		12/19/16 12:46	1

Lab Sample ID: LCS 680-462141/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 462394 — **Prep Batch: 462141**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0501	0.0550		mg/L		110	83 - 116

Method: 9040C - pH

Lab Sample ID: LCS 680-462600/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 462600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	63 - 158

Method: 9065 - Phenolics, Total Recoverable

Lab Sample ID: MB 680-461708/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 461811 — **Prep Batch: 461708**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Phenolics, Total Recoverable	0.050	U	0.050	0.050	0.025	mg/L		12/15/16 15:15	1

Method: 9065 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: LCS 680-461708/2-A
Matrix: Water
Analysis Batch: 461811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 461708

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenolics, Total Recoverable	0.100	0.115		mg/L		115	75 - 125

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-355688/2
Matrix: Water
Analysis Batch: 355688

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Suspended Solids	2.8	U	4.0	2.8	1.1	mg/L		12/14/16 15:56	1

Lab Sample ID: LCS 280-355688/1
Matrix: Water
Analysis Batch: 355688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	90.4		mg/L		90	86 - 114

GC Semi VOA

Prep Batch: 461041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	3520C	
MB 680-461041/13-A	Method Blank	Total/NA	Water	3520C	
LCS 680-461041/14-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-461041/15-A	Lab Control Sample Dup	Total/NA	Water	3520C	

Prep Batch: 461110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	3520C	
MB 680-461110/14-A	Method Blank	Total/NA	Water	3520C	
LCS 680-461110/15-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 680-461110/18-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 461246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-461041/13-A	Method Blank	Total/NA	Water	8015C DRO	461041
LCS 680-461041/14-A	Lab Control Sample	Total/NA	Water	8015C DRO	461041
LCSD 680-461041/15-A	Lab Control Sample Dup	Total/NA	Water	8015C DRO	461041

Analysis Batch: 461248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	8015C DRO	461041

Analysis Batch: 461544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	8081B 8082A	461110

Analysis Batch: 461557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-461110/14-A	Method Blank	Total/NA	Water	8081B 8082A	461110
LCS 680-461110/15-A	Lab Control Sample	Total/NA	Water	8081B 8082A	461110
LCS 680-461110/18-A	Lab Control Sample	Total/NA	Water	8081B 8082A	461110

Metals

Prep Batch: 461495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	7470A	
MB 680-461495/13-A	Method Blank	Total/NA	Water	7470A	
LCS 680-461495/14-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 461791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	7470A	461495
MB 680-461495/13-A	Method Blank	Total/NA	Water	7470A	461495
LCS 680-461495/14-A	Lab Control Sample	Total/NA	Water	7470A	461495

Prep Batch: 462067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	3010A	
MB 680-462067/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 462067 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-462067/2-A	Lab Control Sample	Total/NA	Water	3010A	
680-133049-1 MS	DCL Leachate	Total/NA	Water	3010A	
680-133049-1 MSD	DCL Leachate	Total/NA	Water	3010A	

Prep Batch: 462069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	3010A	
MB 680-462069/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-462069/2-A	Lab Control Sample	Total/NA	Water	3010A	
680-133049-1 MS	DCL Leachate	Total/NA	Water	3010A	
680-133049-1 MSD	DCL Leachate	Total/NA	Water	3010A	

Analysis Batch: 462371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	6020A	462067
MB 680-462067/1-A	Method Blank	Total/NA	Water	6020A	462067
LCS 680-462067/2-A	Lab Control Sample	Total/NA	Water	6020A	462067
680-133049-1 MS	DCL Leachate	Total/NA	Water	6020A	462067
680-133049-1 MSD	DCL Leachate	Total/NA	Water	6020A	462067

Analysis Batch: 462386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	6010C	462069
MB 680-462069/1-A	Method Blank	Total/NA	Water	6010C	462069
LCS 680-462069/2-A	Lab Control Sample	Total/NA	Water	6010C	462069
680-133049-1 MS	DCL Leachate	Total/NA	Water	6010C	462069
680-133049-1 MSD	DCL Leachate	Total/NA	Water	6010C	462069

General Chemistry

Analysis Batch: 355688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	SM 2540D	
MB 280-355688/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-355688/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Prep Batch: 461708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	Distill/Phenol	
MB 680-461708/1-A	Method Blank	Total/NA	Water	Distill/Phenol	
LCS 680-461708/2-A	Lab Control Sample	Total/NA	Water	Distill/Phenol	

Analysis Batch: 461811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	9065	461708
MB 680-461708/1-A	Method Blank	Total/NA	Water	9065	461708
LCS 680-461708/2-A	Lab Control Sample	Total/NA	Water	9065	461708

General Chemistry (Continued)

Prep Batch: 462141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	9012B	
MB 680-462141/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-462141/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 462232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	9012B	462141
MB 680-462141/1-A	Method Blank	Total/NA	Water	9012B	462141

Analysis Batch: 462394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-462141/2-A	Lab Control Sample	Total/NA	Water	9012B	462141

Analysis Batch: 462600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-133049-1	DCL Leachate	Total/NA	Water	9040C	
LCS 680-462600/5	Lab Control Sample	Total/NA	Water	9040C	

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Client Sample ID: DCL Leachate

Date Collected: 12/08/16 08:00
Date Received: 12/10/16 11:02

Lab Sample ID: 680-133049-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1039.7 mL	1 mL	461041	12/11/16 14:20	RBS	TAL SAV
Total/NA	Analysis	8015C DRO		1			461248	12/13/16 00:17	LBH	TAL SAV
	Instrument ID: CSGAB1									
Total/NA	Prep	3520C			1048.3 mL	10 mL	461110	12/12/16 15:22	RBS	TAL SAV
Total/NA	Analysis	8081B 8082A		1			461544	12/14/16 19:19	JCK	TAL SAV
	Instrument ID: CSGAA									
Total/NA	Prep	3010A			50 mL	50 mL	462069	12/17/16 12:06	AJR	TAL SAV
Total/NA	Analysis	6010C		1			462386	12/19/16 19:13	BCB	TAL SAV
	Instrument ID: ICPE									
Total/NA	Prep	3010A			50 mL	250 mL	462067	12/17/16 12:06	AJR	TAL SAV
Total/NA	Analysis	6020A		1			462371	12/20/16 00:53	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Prep	7470A			50 mL	50 mL	461495	12/14/16 08:43	JKL	TAL SAV
Total/NA	Analysis	7470A		1			461791	12/14/16 16:18	JKL	TAL SAV
	Instrument ID: LEEMAN2									
Total/NA	Prep	9012B			50 mL	50 mL	462141	12/19/16 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1			462232	12/19/16 11:54	DAM	TAL SAV
	Instrument ID: LACHAT1									
Total/NA	Analysis	9040C		1			462600	12/20/16 17:09	JCM	TAL SAV
	Instrument ID: MANTECH									
Total/NA	Prep	Distill/Phenol			6 mL	6 mL	461708	12/15/16 09:36	CRW	TAL SAV
Total/NA	Analysis	9065		1	6 mL	6 mL	461811	12/15/16 13:24	CRW	TAL SAV
	Instrument ID: KONELAB3									
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	355688	12/14/16 15:56	SVC	TAL DEN
	Instrument ID: NOEQUIP									

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

COC / Workorder #

Devens - Devens Consolidation Landfill (DCL) Leachate

360325-Boston

Chain of Custody Record

Page: 1 of: 1

Company	KOMAN GS, LLC
Address:	160 East Main Street, Suite 2F Westborough, MA
Phone: 508-366-7442	Fax: 508-366-7445
Sampled by [Print Name(s)]/Affiliation	
Sampler(s) Signature(s)	

Laboratory: Test America - Savannah
Address:
Contact: Jerry Lanier
Regulatory Facility No.
Project Name: Devens Fall 2016 LTM
Sampling QAP No.
Approval Date:
TAT
Other:

Preservatives (see codes): H | I | I | N | O | S | I | I | I

Analyses Requested

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	VOC/624 3-40ml VOA vials (HCl)	SVOC/6325 2-1 liter amber	Pesticides/PCBs SW8081 2-1-liter amber glass	**Total Metals*-** SW6010/6020/7470 1-250 ml poly (HNO3)	Cyanide(total)-SW9012 1-250ml poly (NaOH)	Phenols/SW9066 1-250ml amber glass (H2SO4)	TSS/160.2 1-1 liter poly	TPH/SW8015B 2-1 liter amber	pH/SW9045 1-125ml poly	Remarks	Lab. No.
	DCL Leachate	12/8/16	8a	G	W		X	X	X	X	X	X	X	X	X		
	Trip Blank			O	O		X										

680-133049 Chain of Custody

Shipping Details: courier pick up | 0 ← Total Number of Containers

Date Out:	Via:	Item No.	Relinquished by/Affiliation	Date	Time		Accepted by/Affiliation	Date	Time
Returned:	Via:			12/9/16	1405			12-9-16	1405
Additional Comments:				12-9-16	1505		V. JACKSON TA	12-10-16	11:02

* = Total Metals include: Al, Cd, Cr, Cu, Pb, Ni, Ag, Zn (6010); As, (6020) & Hg (7470)

email logins and results to:

lekes@komangs.com

eanderson@komangs.com

Lab Comments

Seal # _____ Preserve Where Applicable ☐ On ICE ☐

Temperature _____ C

☐ NJ Reduced
☐ NJ Full
☐ Full CLP
☐ Disk Deliverable
☐ Other (Specify)

NJ Data Deliverable Info

☐ Commercial "A"
☐ Commercial "B"
☐ State Forms

MATRIX CODES: A = Ai GW = Groundwat SE = Sediment SP = Soil SW = Surface Water W = Water (Blanks) O = Other

PRESERVATIVE CODES H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol O = Other

COLLECTION METHOD C = Composite G=Grab P= Pumping O = Other

2.8/2.4 2.1/3.7 3.9/3.5

360325-Boston

COC / Workorder #

Devens - Devens Consolidation Landfill (DCL) Leachate

Chain of Custody Record

Page: 1 of: 1

Company	KOMAN GS, LLC
Address:	160 East Main Street, Suite 2F Westborough, MA
Phone: 508-366-7442	Fax: 508-366-7445
Sampled by [Print Name(s)]/Affilliation	
Sampler(s) Signature(s)	

Laboratory: Test America - Savannah
Address:
Contact: Jerry Lanier
Regulatory Facility No.
Project Name: Devens Fall 2016 LTM
Sampling QAP No.:
Approval Date:
TAT
Other:

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	Preservatives (see codes) H	I	I	N	O	S	I	I	I	Remarks	Lab. No.
							Analyses Requested: VOC/624 3-40ml VOA vials (HCl)	SVOC/6325 2-1 liter amber	Pesticides/PCBs SW8081 2-1-liter amber glass	Total Metals*- SW6010/6020/7470 1-250 ml poly (HNO3)	Cyanide(total)-SW9012 1-250ml poly (NaOH)	Phenols/SW9066 1-250ml amber glass (H2SO4)	TSS/160.2 1-1 liter poly	TPH/SW8015B 2-1 liter amber	pH/SW9045 1-125ml poly		
	DCL Leachate	12/8/16	8:00	G	W		X	X	X	X	X	X	X	X	X		
	Trip Blank			O	O		X										

680-133049 Chain of Custody

Shipping Details: courier pick up — 0 ← Total Number of Containers

Date Out:	Via:	Item No.	Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Returned:	Via:			12/9/16	1405		12/10/16	0855

Additional Comments:
* = Total Metals include: Al, Cd, Cr, Cu, Pb, Ni, Ag, Zn (6010); As, (6020) & Hg (7470)

email logins and results to:
lekes@komangs.com
eanderson@komangs.com

Lab Comments
Seal #
Preserve Where Applicable ☐
On ICE ☐
Temperature _____C

☐ NJ Reduced
☐ NJ Full
☐ Full CLP
☐ Disk Deliverable
☐ Other (Specify)

NJ Data Deliverable Info
☐ Commercial "A"
☐ Commercial "B"
☐ State Forms

MATRIX CODES: A = Ai GW = Groundwat SE = Sediment SP = Soil SW = Surface Water W = Water (Blanks) O = Other
PRESERVATIVE CODES H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol O = Other
COLLECTION METHOD C = Composite G=Grab P= Pumping O = Other

0.6-0.2 IR#5 Dw 12/10/16

Boston



360325

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-133049-1

Login Number: 133049
List Number: 1
Creator: Ragnaldsen, Amy E

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

Laboratory: TestAmerica Denver

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-133049-2
Client Project/Site: Fort Devens / DCL Leachate

For:
KOMAN Government Solutions, LLC
160 East Main St
Suite 2F
Westborough, Massachusetts 01581

Attn: Laurie Ekes

Jerry Lanier

Authorized for release by:
1/4/2017 2:23:05 PM

Jerry Lanier, Project Manager I
(912)354-7858 e.3410
jerry.lanier@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 680-133049-2

Laboratory: TestAmerica Savannah

Narrative

Job Narrative
680-133049-2

Comments
No additional comments.

Receipt
The samples were received on 12/10/2016 11:02 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.4º C, 3.5º C, 3.7º C and 6.0º C.

Subcontract Work
Methods Semivolatiles, Volatiles: These methods were subcontracted to Katahdin Analytical Services Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Sample Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-133049-1	DCL Leachate	Water	12/08/16 08:00	12/10/16 11:02

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-2

Method	Method Description	Protocol	Laboratory
Semivolatiles	EPA 625 Base/Neutral and Acid Organics i	NONE	
Volatiles	EPA 624 Purgeable Organic Compounds	NONE	

Protocol References:

NONE = NONE

Laboratory References:

= Katahdin Analytical Services Inc, PO BOX 540, 600 Technology Way, Scarborough, ME 04074

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TEST AMERICA SAVANNAH
FORT DEVENS/DCL LEACHATE 68016363
TJ0540

KATAHDIN ANALYTICAL SERVICES, LLC.
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

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SAMPLE DATA PACKAGE

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TEST AMERICA SAVANNAH
FORT DEVENS/DCL LEACHATE 68016363
TJ0540

Sample Receipt

The following sample was received on December 14, 2016 and was logged in under Katahdin Analytical Services work order number TJ0540 for a hardcopy due date of December 26, 2016.

KATAHDIN	TEST AMERICA SAVANNAH
Sample No.	Sample Identification
TJ0540-1	DCL LEACHATE

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The sample of Work Order TJ0540 was analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

E624 Analysis

Due to a laboratory error, the Laboratory Control Sample Duplicate (LCSD) was not analyzed along with the sample. The client was notified on 12/30/16.

The initial calibration was calibrated at the following concentrations: 1, 5, 20, 50, 100, and 200ug/l. The calibration verification standard (CV) was analyzed at a concentration 20 ug/l as specified in the method. The acceptance criterion for the CV is that the concentration of each target analyte must be within a specific concentration range. The data system does not have a Form 7 for an EPA method 624 CV that lists the %D for each analyte. Instead, a Recovery Report sheet was used that lists the spiked Concentration added for each analyte, the

Concentration Recovered, the % Recovered, and Limits. The Limits column lists the method acceptable concentration range. The % Recovered column is the concentration recovered divided by the Concentration Added. This column is disregarded. The Concentration Recovered is manually compared to the method acceptable concentration range.

The target analyte carbon disulfide was detected in the method blank WG197007-2 below ½ of the LOQ. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit and is greater than 1/10 the amount measured in any sample or 1/10 the regulatory limit (whichever is greater). Since the method blank was acceptable, no further action was taken.

EPA 625 Analysis

The independent check standard (file U6047) associated with the initial calibration on the U instrument on 10/26/2016 had low concentrations for the target analytes N-nitrosodiphenylamine, benzidine and a high concentration for pentachlorophenol, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The calibration verification standard (CV) (file U6512) had high responses for the analyte 2,4-dinitrophenol and 4-nitrophenol, which resulted in %D's that were outside DoD QSM acceptance limits.

The laboratory method blank WG196753-1 had a low recovery for one surrogate, which was outside the laboratory established acceptance limits.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on the DoD QSM for the full list of spiked compounds and all additional compounds are statistically derived. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long the LCS is acceptable.

The LCSD WG196753-3 had five spiked target analytes with recoveries that were low and outside of the method acceptance limits. The DoD QSM allowable number of exceedances for 56 target analytes is three analytes. Since the LCS WG196753-2 was acceptable, after factoring in the allowed number of exceedances, no further action was taken.

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond 1.4.17

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC. Sample Receipt Condition Report

Client: Test America	KAS PM: HHM	Sampled By: Client
Project:	KIMS Entry By: GV	Delivered By: FedEx
KAS Work Order#: TJ0540 -	KIMS Review By:	Received By: GV
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 12-14-16/08:50

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.		✓			Temp (°C): 3.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?		✓			
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

TJ0540

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-460748.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jerry.lanier@testamericainc.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: Katahdin Analytical Services		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 680-133049-1
Address: PO BOX 540, 600 Technology Way,	Due Date Requested: 12/21/2016			
City: Scarborough	TAT Requested (days):			
State, Zip: ME, 04074				
Phone:	PO #:			
Email:	WO #:			
Project Name: Fort Devens / DCL Leachate	Project #: 68016363			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Volatiles)/ Volatiles	SUB (Semivolatiles)/ Semivolatiles	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
DCL Leachate (680-133049-1)	12/8/16	08:00 Eastern		Water			X	X	5	Per Rick Carr, our cost is $70, Per Rick Carr, our cost is $125

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/13/16 1306	Sav.		12/14/16 08:50	KAS
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

12/14/2016 7

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Shipping Order Form

S680-79775

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Shipping Order ID: 79775 **Ship Via: FedEx Std Overnight** **Due On: 12/14/2016 11:59:00PM**

Ship To Information

Project Manager:
Company Name: Katahdin Analytical Services
Attention: Attn: Shipping/Receiving
Address 1: PO BOX 540
Address 2: 600 Technology Way
Address 3:
City: City: Scarborough
State: ME
Zip: 04074
Phone #:
Project Ref:

Notes to Bottle/Shipping Department

- ☐ Ready to Fill
- ☐ Seals on Coolers
- ☐ Seals on Bottle
- ☐ Bottle Sets
- ☐ Ice Cooler
- ☐ Labels with Bottles
  - ☐ Preprinted
- ☐ Labels on Bottles
- ☐ Rebill Freight
- ☐ Return Shipment Labels
- ☐ Number of Return Shipment Labels

Shipping Assets

Assets	Quantity	Description	Filled
			☐

Please notify us immediately if an error is found in shipment

Bottle Order Information

Bottle Order:
Bottle Order #:
Request From Client: 12/13/2016
Date Order Posted:
Order Status: Ready To Process
Prepared By:
Deliver By Date: ***12/14/2016 11:59:00PM***
Lab Project Number:

Order Completion Information

Creator: Christy Banda
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #

Notes to Field Staff:

Health and Safety Notes:

Preservative	Comment

Relinquished By	Company	Date	Time	Received By	Company	Seal # Seal # Seal #
Relinquished By	Company	Date	Time	Received By	Company	Seal # Seal # Seal #

Please notify us immediately if an error is found in shipment

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Dec. 15, 2016
05:44 PM

Login Number: TJ0540

Account: TASAV001 NoWeb
Test America Savannah

Project: TASAV-DEVENS

Quote/Incoming:

Primary Report Address:
Jerry Lanier
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404
Jerry.Lanier@testamericainc.com

Primary Invoice Address:
Accounts Payable
Test America Savannah
5102 LaRoche Avenue

Savannah,GA 31404

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD QSM 4.2 reporting with DOD limits. ND to PQL. "J" flag between MDL and PQL. Need LCS/LCSD. Follow MA MCP CAM. Include level 4 narrative.
CHECK NO.	:	
CLIENT PO#	:	680-130852
CLIENT PROJECT MANAGE	:	Jerry Lanier
CONTRACT	:	W912WJ-10-D-0003
COOLER TEMPERATURE	:	3.8
DELIVERY SERVICES	:	Fedex
EDD FORMAT	:	KAS033QC-XLS
LOGIN INITIALS	:	GN
PM	:	HHM
PROJECT NAME	:	Fort Devens/DCL Leachate 68016363
QC LEVEL	:	IV
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Email PDF, EDD files and invoice to Jerry. No HC. Include Level 4 narrative and MCP forms.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
TJ0540-1	DCL LEACHATE	08-DEC-16 08:00	14-DEC-16			26-DEC-16	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E624-S	22-DEC-16	40mL Vial+HCl		
Aqueous	S	E625	15-DEC-16	1L N-Amber Glass		

Total Samples: *1* ***Total Analyses:*** *2*

12-15-16

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68016363
SDG: TJ0540
Lab File ID: C1291.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 03-JAN-17

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	5.0	ug/L	1	5	5.0	0.24	1.0
Chloromethane	U	5.0	ug/L	1	5	5.0	0.36	1.0
Vinyl Chloride	U	5.0	ug/L	1	5	5.0	0.25	1.0
Bromomethane	U	5.0	ug/L	1	5	5.0	0.49	1.0
Chloroethane	U	5.0	ug/L	1	5	5.0	0.55	1.0
Trichlorofluoromethane	U	5.0	ug/L	1	5	5.0	0.24	1.0
1,1-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.35	0.50
Methylene Chloride	U	10	ug/L	1	10	10.	1.1	2.5
trans-1,2-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.25	0.50
1,1-Dichloroethane	U	5.0	ug/L	1	5	5.0	0.21	0.50
Chloroform	U	5.0	ug/L	1	5	5.0	0.32	0.50
1,1,1-Trichloroethane	U	5.0	ug/L	1	5	5.0	0.20	0.50
Carbon Tetrachloride	U	5.0	ug/L	1	5	5.0	0.22	0.50
Benzene	U	5.0	ug/L	1	5	5.0	0.26	0.50
1,2-Dichloroethane	U	5.0	ug/L	1	5	5.0	0.20	0.50
Trichloroethene	U	5.0	ug/L	1	5	5.0	0.28	0.50
1,2-Dichloropropane	U	5.0	ug/L	1	5	5.0	0.25	0.50
Bromodichloromethane	U	5.0	ug/L	1	5	5.0	0.33	0.50
cis-1,3-Dichloropropene	U	5.0	ug/L	1	5	5.0	0.19	0.50
Toluene	U	5.0	ug/L	1	5	5.0	0.27	0.50
trans-1,3-Dichloropropene	U	5.0	ug/L	1	5	5.0	0.20	0.50
1,1,2-Trichloroethane	U	5.0	ug/L	1	5	5.0	0.33	0.50
Tetrachloroethene	U	5.0	ug/L	1	5	5.0	0.40	0.50
Dibromochloromethane	U	5.0	ug/L	1	5	5.0	0.30	0.50
Chlorobenzene	U	5.0	ug/L	1	5	5.0	0.22	0.50
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.21	0.50
Bromoform	U	5.0	ug/L	1	5	5.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	1	5	5.0	0.38	0.50
1,3-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.26	0.50
1,4-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.24	0.50
1,2-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.15	0.50
cis-1,2-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.21	0.50
Freon-113	U	5.0	ug/L	1	5	5.0	0.31	0.50
Acetone	J	3.8	ug/L	1	10	10.	2.2	2.5
Carbon Disulfide	J	0.44	ug/L	1	5	5.0	0.25	0.50

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Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68016363
SDG: TJ0540
Lab File ID: C1291.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 03-JAN-17

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methyl tert-butyl Ether	U	5.0	ug/L	1	5	5.0	0.36	0.50
1,2-Dichloroethylene (Total)	U	10	ug/L	1	10	10.	0.21	1.0
2-Butanone	U	10	ug/L	1	10	10.	1.3	2.5
Cyclohexane	U	5.0	ug/L	1	5	5.0	0.31	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
1,2-Dibromoethane	U	5.0	ug/L	1	5	5.0	0.22	0.50
Xylenes (Total)	U	15	ug/L	1	15	15.	0.25	1.5
M+P-Xylenes	U	10	ug/L	1	10	10.	0.59	1.0
o-Xylene	U	5.0	ug/L	1	5	5.0	0.25	0.50
Styrene	U	5.0	ug/L	1	5	5.0	0.23	0.50
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	1	5	5.0	0.50	0.50
1,2,4-Trichlorobenzene	U	5.0	ug/L	1	5	5.0	0.37	0.50
Isopropylbenzene	U	5.0	ug/L	1	5	5.0	0.23	0.50
Methyl Acetate	U	5.0	ug/L	1	5	5.0	0.53	0.75
Methylcyclohexane	U	5.0	ug/L	1	5	5.0	0.30	0.50
1,2-Dichloroethane-D4		109.	%					
Toluene-D8		102.	%					
P-Bromofluorobenzene		102.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68
SDG: TJ0540
Lab File ID: U6541.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA
Report Date: 21-DEC-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
N-Nitrosodimethylamine	U	4.7	ug/L	1	5	4.7	0.99
Phenol	U	4.7	ug/L	1	5	4.7	1.2
Bis(2-Chloroethyl)Ether	U	4.7	ug/L	1	5	4.7	0.93
2-Chlorophenol	U	4.7	ug/L	1	5	4.7	2.2
1,3-Dichlorobenzene	U	4.7	ug/L	1	5	4.7	1.6
1,4-Dichlorobenzene	U	4.7	ug/L	1	5	4.7	1.8
1,2-Dichlorobenzene	U	4.7	ug/L	1	5	4.7	1.7
Bis(2-Chloroisopropyl) Ether	U	4.7	ug/L	1	5	4.7	1.1
N-Nitroso-Di-N-Propylamine	U	4.7	ug/L	1	5	4.7	0.73
Hexachloroethane	U	4.7	ug/L	1	5	4.7	1.6
Nitrobenzene	U	4.7	ug/L	1	5	4.7	0.98
Isophorone	U	4.7	ug/L	1	5	4.7	0.78
2-Nitrophenol	U	4.7	ug/L	1	5	4.7	2.5
2,4-Dimethylphenol	U	4.7	ug/L	1	5	4.7	2.5
Bis(2-Chloroethoxy)Methane	U	4.7	ug/L	1	5	4.7	0.83
2,4-Dichlorophenol	U	4.7	ug/L	1	5	4.7	2.9
1,2,4-Trichlorobenzene	U	4.7	ug/L	1	5	4.7	1.7
Naphthalene	U	4.7	ug/L	1	5	4.7	1.7
Hexachlorobutadiene	U	4.7	ug/L	1	5	4.7	1.5
4-Chloro-3-Methylphenol	U	4.7	ug/L	1	5	4.7	2.1
Hexachlorocyclopentadiene	U	4.7	ug/L	1	5	4.7	0.69
2,4,6-Trichlorophenol	U	4.7	ug/L	1	5	4.7	2.4
2-Chloronaphthalene	U	4.7	ug/L	1	5	4.7	1.6
Dimethyl Phthalate	U	4.7	ug/L	1	5	4.7	0.85
2,6-Dinitrotoluene	U	4.7	ug/L	1	5	4.7	0.58
Acenaphthylene	U	4.7	ug/L	1	5	4.7	1.0
Acenaphthene	U	4.7	ug/L	1	5	4.7	1.2
2,4-Dinitrophenol	U	24	ug/L	1	25	24.	17.
4-Nitrophenol	U	19	ug/L	1	20	19.	4.3
2,4-Dinitrotoluene	U	4.7	ug/L	1	5	4.7	0.43
Diethylphthalate	U	4.7	ug/L	1	5	4.7	0.71
4-Chlorophenyl-Phenylether	U	4.7	ug/L	1	5	4.7	1.1
Fluorene	U	4.7	ug/L	1	5	4.7	0.92
4,6-Dinitro-2-Methylphenol	U	24	ug/L	1	25	24.	1.1
N-Nitrosodiphenylamine	U	4.7	ug/L	1	5	4.7	0.51

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Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68
SDG: TJ0540
Lab File ID: U6541.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA
Report Date: 21-DEC-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Bromophenyl-Phenylether	U	4.7	ug/L	1	5	4.7	1.0
Hexachlorobenzene	U	4.7	ug/L	1	5	4.7	0.86
Pentachlorophenol	U	19	ug/L	1	20	19.	1.6
Phenanthrene	U	4.7	ug/L	1	5	4.7	2.6
Anthracene	U	4.7	ug/L	1	5	4.7	0.71
Di-N-Butylphthalate	U	4.7	ug/L	1	5	4.7	0.72
Fluoranthene	U	4.7	ug/L	1	5	4.7	0.66
Benzidine	U	24	ug/L	1	25	24.	11.
Pyrene	U	4.7	ug/L	1	5	4.7	0.58
Butylbenzylphthalate	U	4.7	ug/L	1	5	4.7	0.51
3,3'-Dichlorobenzidine	U	4.7	ug/L	1	5	4.7	1.7
Benzo(a)anthracene	U	4.7	ug/L	1	5	4.7	0.63
Chrysene	U	4.7	ug/L	1	5	4.7	0.85
Bis(2-Ethylhexyl)Phthalate	U	4.7	ug/L	1	5	4.7	0.53
Di-N-Octylphthalate	U	4.7	ug/L	1	5	4.7	0.63
Benzo(b)fluoranthene	U	4.7	ug/L	1	5	4.7	2.1
Benzo(k)fluoranthene	U	4.7	ug/L	1	5	4.7	2.3
Benzo(a)pyrene	U	4.7	ug/L	1	5	4.7	2.0
Indeno(1,2,3-cd)pyrene	U	4.7	ug/L	1	5	4.7	1.2
Dibenzo(a,h)anthracene	U	4.7	ug/L	1	5	4.7	1.2
Benzo(g,h,i)perylene	U	4.7	ug/L	1	5	4.7	1.2
2-Fluorophenol		17.6	%				
Phenol-d6		11.4	%				
Nitrobenzene-d5		62.2	%				
2-Fluorobiphenyl		66.6	%				
2,4,6-Tribromophenol		77.6	%				
Terphenyl-d14		77.4	%				

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VOLATILES DATA
BY EPA METHOD 624

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Fort Devens/DCL Leachate 68016363 **Matrix:** AQ
Lab Code: KAS **SDG:** TJ0540

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
DCL LEACHATE	TJ0540-1		102.		104.		109.		102.	
Laboratory Control S	WG197007-1		99.6		101.		101.		99.1	
Method Blank Sample	WG197007-2		100.		105.		106.		99.6	

		QC Limits
DBF	DIBROMOFLUOROMETHANE	68-128
BFB	P-BROMOFLUOROBENZENE	56-133
TOL	TOLUENE-D8	65-128
DCA	1,2-DICHLOROETHANE-D4	67-135

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 68016363
Lab File ID : C1288.D
Instrument ID : GCMS-C
Heated Purge : No

SDG : TJ0540
Lab Sample ID : WG197007-2
Date Analyzed : 20-DEC-16
Time Analyzed : 13:03

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG197007-1	C1286.D	12/20/16	11:44
DCL LEACHATE	TJ0540-1	C1291.D	12/20/16	16:03

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 68016363
Lab File ID : CB505.D
Instrument ID : GCMS-C

SDG : TJ0540
Date Analyzed : 19-DEC-16
Time Analyzed : 10:01
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	15.7		
75	30.0 - 60.0% of mass 95	48.2		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.5		
173	Less than 2.0% of mass 174	0.9	1.28	1
174	Greater than 50.0% of mass 95	70.3		
175	5.0 - 9.0% of mass 174	5.3	7.57	1
176	95.0 - 101.0% of mass 174	67.2	95.67	1
177	5.0 - 9.0% of mass 176	4.6	6.86	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG197097-4	C1273A.D	12/19/16	10:23
Initial Calibration	WG197097-3	C1274A.D	12/19/16	10:58
Initial Calibration	WG197097-2	C1275A.D	12/19/16	11:31
Initial Calibration	WG197097-1	C1276A.D	12/19/16	12:05
Initial Calibration	WG197097-6	C1277A.D	12/19/16	12:38
Initial Calibration	WG197097-5	C1279A.D	12/19/16	14:03

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 68016363
Lab File ID : CB506.D
Instrument ID : GCMS-C

SDG : TJ0540
Date Analyzed : 20-DEC-16
Time Analyzed : 10:05
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	16.5		
75	30.0 - 60.0% of mass 95	49.2		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	1.0	1.30	1
174	Greater than 50.0% of mass 95	75.3		
175	5.0 - 9.0% of mass 174	4.7	6.27	1
176	95.0 - 101.0% of mass 174	74.9	99.54	1
177	5.0 - 9.0% of mass 176	5.1	6.81	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG197007-4	C1285.D	12/20/16	11:02
Laboratory Control S	WG197007-1	C1286.D	12/20/16	11:44
Independent Source	WG197007-5	C1286A.D	12/20/16	11:44
Method Blank Sample	WG197007-2	C1288.D	12/20/16	13:03
DCL LEACHATE	TJ0540-1	C1291.D	12/20/16	16:03

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 6801
Lab ID : WG197097-3
Lab File ID : C1274A.D

SDG: TJ0540
Analytical Date: 12/19/16 10:58
Instrument ID: GCMS-C

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	721931		7.44		1329465		8.11		1271606		11.58	
	Upper Limit	1443862		7.94		2658930		8.61		2543212		12.08	
	Lower Limit	360965.5		6.94		664732.5		7.61		635803		11.08	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG197007-4	725749		7.44		1318791		8.12		1276004		11.58	
Laboratory Control S	WG197007-1	720540		7.44		1312143		8.11		1284352		11.58	
Method Blank Sample	WG197007-2	669245		7.44		1247374		8.11		1230273		11.58	
DCL LEACHATE	TJ0540-1	663293		7.44		1202610		8.11		1185288		11.58	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 6801
Lab ID : WG197097-3
Lab File ID : C1274A.D

SDG: TJ0540
Analytical Date: 12/19/16 10:58
Instrument ID: GCMS-C

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	711117		14.69	
	Upper Limit	1422234		15.19	
	Lower Limit	355558.5		14.19	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG197007-4	704165		14.69	
Laboratory Control S	WG197007-1	702961		14.69	
Method Blank Sample	WG197007-2	661863		14.69	
DCL LEACHATE	TJ0540-1	649068		14.69	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68016363
SDG: TJ0540
Lab File ID: C1291.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 03-JAN-17

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	5.0	ug/L	1	5	5.0	0.24	1.0
Chloromethane	U	5.0	ug/L	1	5	5.0	0.36	1.0
Vinyl Chloride	U	5.0	ug/L	1	5	5.0	0.25	1.0
Bromomethane	U	5.0	ug/L	1	5	5.0	0.49	1.0
Chloroethane	U	5.0	ug/L	1	5	5.0	0.55	1.0
Trichlorofluoromethane	U	5.0	ug/L	1	5	5.0	0.24	1.0
1,1-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.35	0.50
Methylene Chloride	U	10	ug/L	1	10	10.	1.1	2.5
trans-1,2-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.25	0.50
1,1-Dichloroethane	U	5.0	ug/L	1	5	5.0	0.21	0.50
Chloroform	U	5.0	ug/L	1	5	5.0	0.32	0.50
1,1,1-Trichloroethane	U	5.0	ug/L	1	5	5.0	0.20	0.50
Carbon Tetrachloride	U	5.0	ug/L	1	5	5.0	0.22	0.50
Benzene	U	5.0	ug/L	1	5	5.0	0.26	0.50
1,2-Dichloroethane	U	5.0	ug/L	1	5	5.0	0.20	0.50
Trichloroethene	U	5.0	ug/L	1	5	5.0	0.28	0.50
1,2-Dichloropropane	U	5.0	ug/L	1	5	5.0	0.25	0.50
Bromodichloromethane	U	5.0	ug/L	1	5	5.0	0.33	0.50
cis-1,3-Dichloropropene	U	5.0	ug/L	1	5	5.0	0.19	0.50
Toluene	U	5.0	ug/L	1	5	5.0	0.27	0.50
trans-1,3-Dichloropropene	U	5.0	ug/L	1	5	5.0	0.20	0.50
1,1,2-Trichloroethane	U	5.0	ug/L	1	5	5.0	0.33	0.50
Tetrachloroethene	U	5.0	ug/L	1	5	5.0	0.40	0.50
Dibromochloromethane	U	5.0	ug/L	1	5	5.0	0.30	0.50
Chlorobenzene	U	5.0	ug/L	1	5	5.0	0.22	0.50
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.21	0.50
Bromoform	U	5.0	ug/L	1	5	5.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	1	5	5.0	0.38	0.50
1,3-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.26	0.50
1,4-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.24	0.50
1,2-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.15	0.50
cis-1,2-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.21	0.50
Freon-113	U	5.0	ug/L	1	5	5.0	0.31	0.50
Acetone	J	3.8	ug/L	1	10	10.	2.2	2.5
Carbon Disulfide	J	0.44	ug/L	1	5	5.0	0.25	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68016363
SDG: TJ0540
Lab File ID: C1291.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 03-JAN-17

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methyl tert-butyl Ether	U	5.0	ug/L	1	5	5.0	0.36	0.50
1,2-Dichloroethylene (Total)	U	10	ug/L	1	10	10.	0.21	1.0
2-Butanone	U	10	ug/L	1	10	10.	1.3	2.5
Cyclohexane	U	5.0	ug/L	1	5	5.0	0.31	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
1,2-Dibromoethane	U	5.0	ug/L	1	5	5.0	0.22	0.50
Xylenes (Total)	U	15	ug/L	1	15	15.	0.25	1.5
M+P-Xylenes	U	10	ug/L	1	10	10.	0.59	1.0
o-Xylene	U	5.0	ug/L	1	5	5.0	0.25	0.50
Styrene	U	5.0	ug/L	1	5	5.0	0.23	0.50
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	1	5	5.0	0.50	0.50
1,2,4-Trichlorobenzene	U	5.0	ug/L	1	5	5.0	0.37	0.50
Isopropylbenzene	U	5.0	ug/L	1	5	5.0	0.23	0.50
Methyl Acetate	U	5.0	ug/L	1	5	5.0	0.53	0.75
Methylcyclohexane	U	5.0	ug/L	1	5	5.0	0.30	0.50
1,2-Dichloroethane-D4		109.	%					
Toluene-D8		102.	%					
P-Bromofluorobenzene		102.	%					
Dibromofluoromethane		104.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1291.D
Report Date: 30-Dec-2016 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C122016.b\C1291.D
Lab Smp Id: TJ0540-1 Client Smp ID: DCL LEACHATE
Inj Date : 20-DEC-2016 16:03 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : TJ0540-1
Misc Info : WG197007,WG197097-3
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Meth Date : 30-Dec-2016 15:05 elittlefie Quant Type: ISTD
Cal Date : 19-DEC-2016 14:03 Cal File: C1279A.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

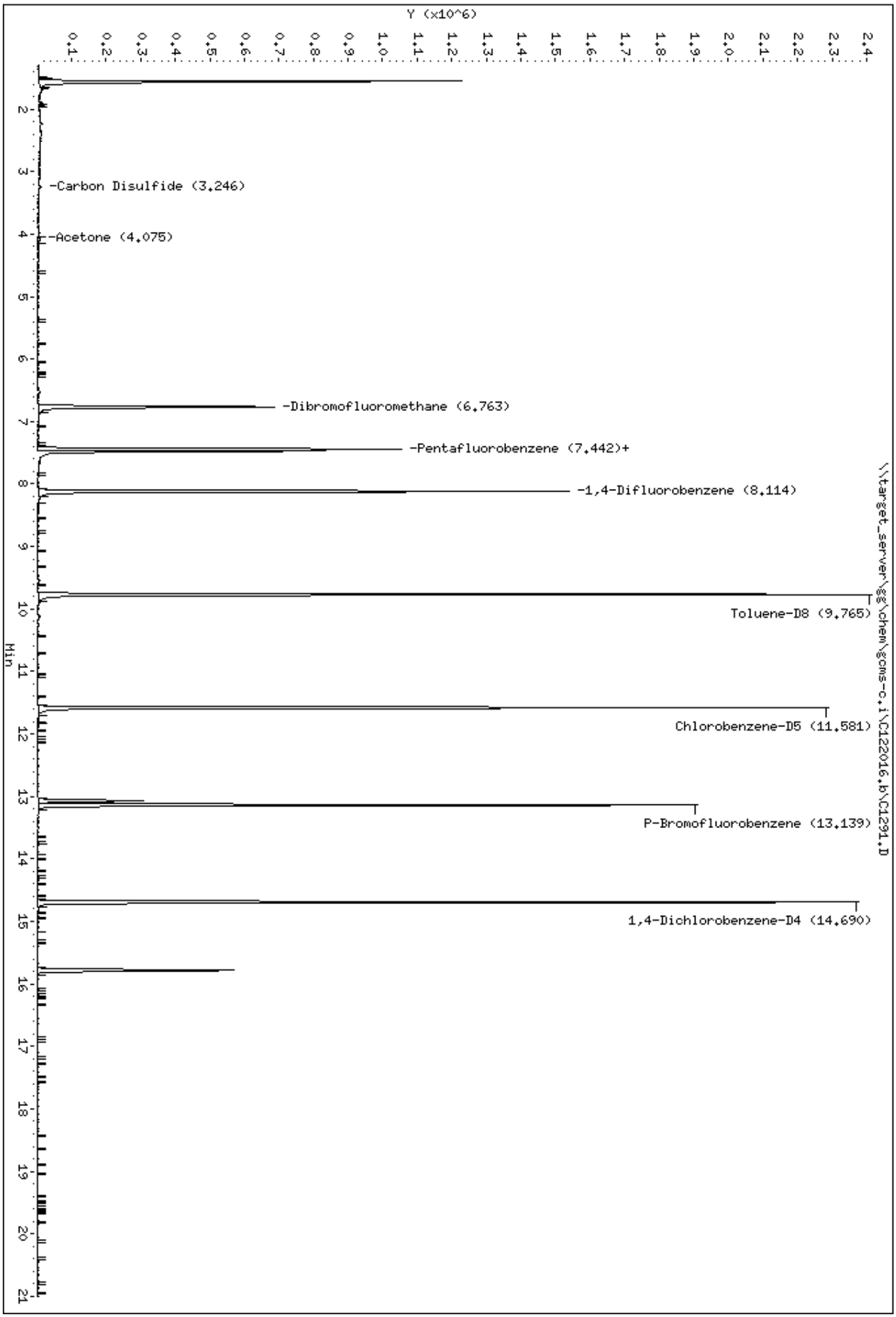
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	10 Carbon Disulfide	76	3.246	3.247	(0.436)	8366	0.43571	0.44(a)	
	15 Acetone	43	4.089	4.075	(0.550)	5076	3.81806	3.8(a)	
$	37 Dibromofluoromethane	113	6.763	6.764	(0.909)	447947	51.9389	51.9	
*	42 Pentafluorobenzene	168	7.442	7.436	(1.000)	663293	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.470	7.472	(1.004)	494587	54.3237	54.3	
*	49 1,4-Difluorobenzene	114	8.113	8.115	(1.000)	1202610	50.0000		
$	55 Toluene-D8	98	9.765	9.766	(1.203)	1482624	50.8734	50.9	
*	66 Chlorobenzene-D5	117	11.580	11.582	(1.000)	1185288	50.0000		
$	76 P-Bromofluorobenzene	95	13.139	13.133	(1.619)	703086	50.9313	50.9	
*	91 1,4-Dichlorobenzene-D4	152	14.690	14.691	(1.000)	649068	50.0000		

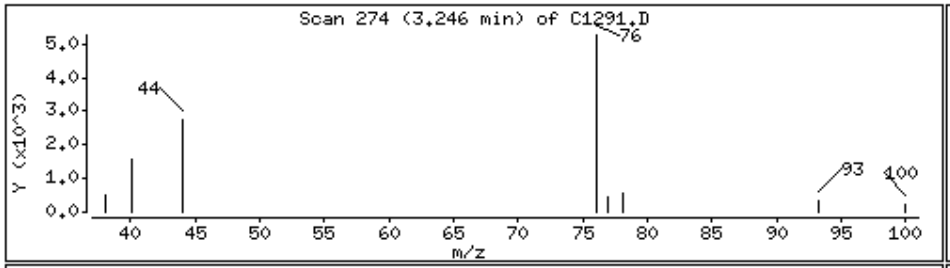
QC Flag Legend

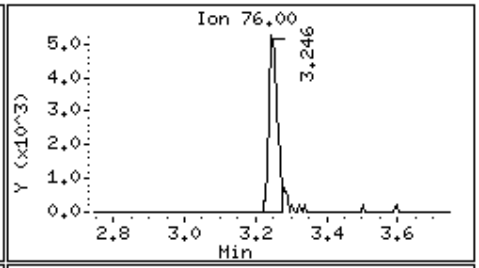
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

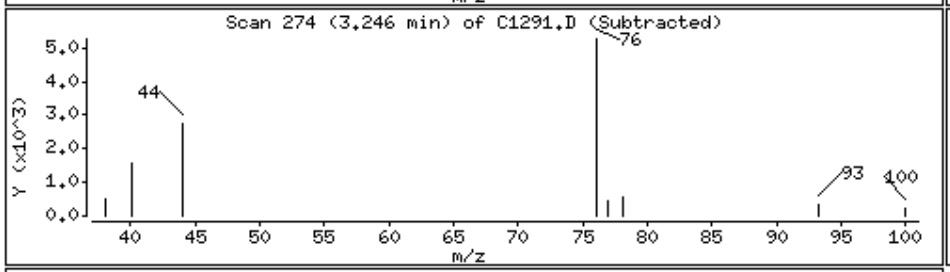

Y (x10^6)
Min
-Carbon Disulfide (3.246)
-Acetone (4.075)
-Dibromofluoromethane (6.763)
-Pentafluorobenzene (7.442)+
-1,4-Difluorobenzene (8.114)
Toluene-D8 (9.765)
Chlorobenzene-D5 (11.581)
P-Bromofluorobenzene (13.139)
1,4-Dichlorobenzene-D4 (14.690)
Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1291.D
Date : 20-DEC-2016 16:03
Client ID: DCL LEACHATE
Sample Info: TJ0540-1
Instrument: gcms-c.i
\\target_server\gg\chem\gcms-c.i\C122016.b\C1291.D

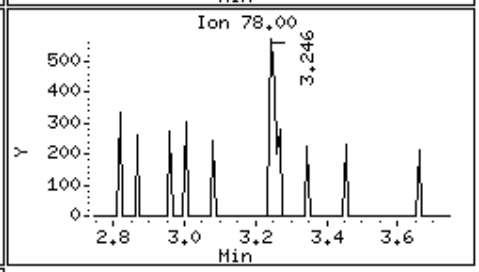
Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1291.D
Date : 20-DEC-2016 16:03
Client ID: DCL LEACHATE Instrument: gcms-c.i
Sample Info: TJ0540-1

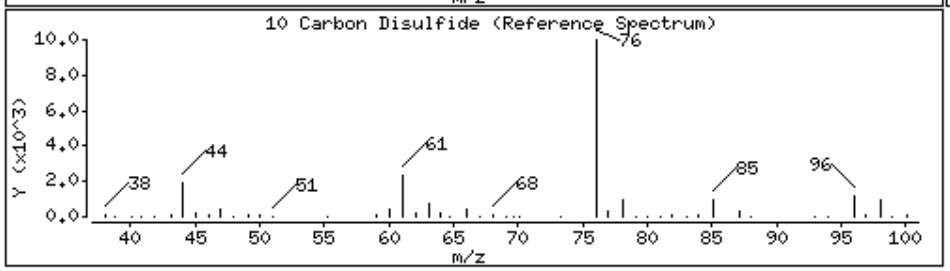
10 Carbon Disulfide Concentration: 0.44 ug/l



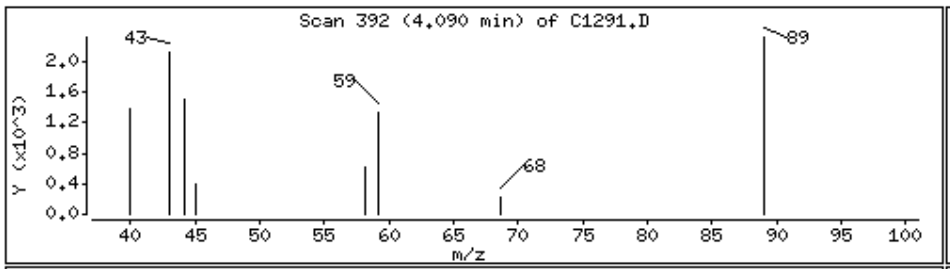


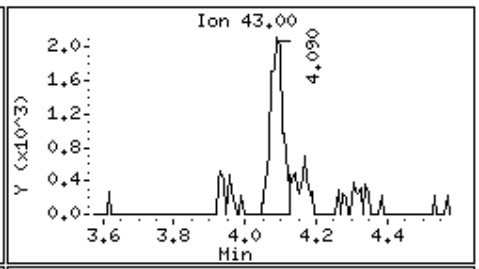


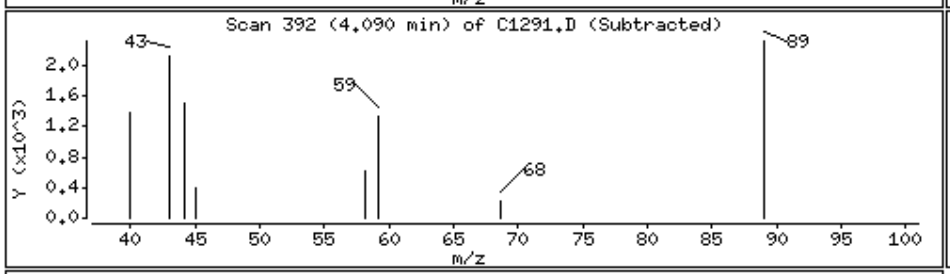


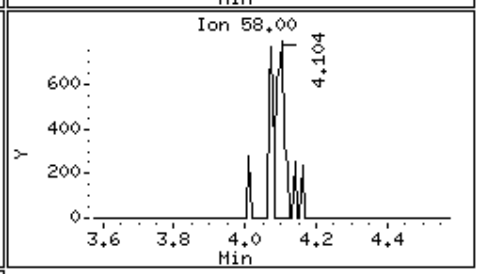


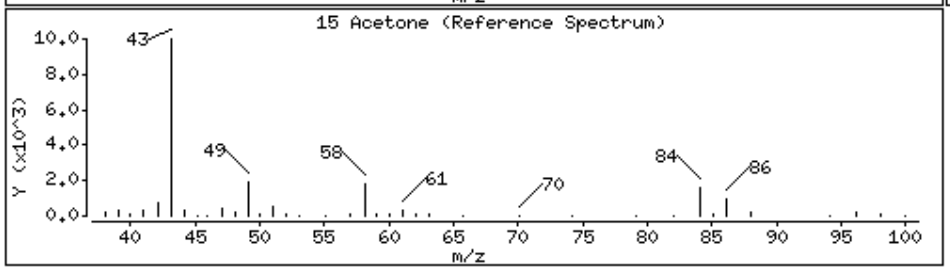
15 Acetone Concentration: 3.8 ug/l











Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: TJ0540
Project : Fort Devens/DCL Leachate 68016363
Instrument ID: GCMS-C
Lab File IDs : C1276A.D C1275A.D C1274A.D C1273A.D C1279A.D C1277A.D
Column ID:
Calibration Date(s): 19-DEC-16 10:23 19-DEC-16 14:03

	Level 1 1.0000	Level 2 5.0000	Level 3 20.0000	Level 4 50.0000	Level 5 100.0000	Level 6 200.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.54859	0.57171	0.53958	0.50324	0.46753	0.44240	AVG		0.51218		9.78687	35.00000	O
Chloromethane	0.67750	0.63729	0.55476	0.48842	0.52000	0.51440	AVG		0.56540		13.3381(	35.00000	O
Vinyl chloride	0.57260	0.57745	0.55631	0.50587	0.48243	0.44758	AVG		0.52371		10.16142	35.00000	O
Bromomethane	0.46467	0.30607	0.29823	0.29659	0.29338	0.28511	AVG		0.32401		21.37161	35.00000	O
Chloroethane	0.27866	0.28501	0.27223	0.26833	0.12868	0.22759	AVG		0.24342		24.53713	35.00000	O
Trichlorofluoromethane	0.84008	0.76385	0.73015	0.68955	0.57463	0.67826	AVG		0.71275		12.53851	35.00000	O
1,1-Dichloroethene	0.72538	0.65367	0.59444	0.52290	0.54770	0.53002	AVG		0.59568		13.44971	35.00000	O
Carbon Disulfide	1.74967	1.41006	1.47075	1.34533	1.42226	1.28624	AVG		1.44739		11.15451	35.00000	O
Freon-113	0.51975	0.44633	0.44562	0.40424	0.41679	0.39114	AVG		0.43731		10.52539	35.00000	O
Methylene Chloride	0.98464	0.77298	0.69370	0.65760	0.64975	0.62587	AVG		0.73075		18.41349	35.00000	O
Acetone	0.11218	0.11620	0.12314	0.09262	0.07775	0.07941	AVG		0.10022		19.54984	35.00000	O
trans-1,2-Dichloroethene	0.67880	0.61919	0.59818	0.54803	0.58176	0.52414	AVG		0.59168		9.24290	35.00000	O
Methyl tert-butyl ether	1.21294	1.21817	1.24639	1.19039	1.14461	1.07808	AVG		1.18176		5.17210	35.00000	O
1,1-Dichloroethane	1.11615	1.05451	1.04008	0.96114	0.97409	0.90470	AVG		1.00844		7.53958	35.00000	O
cis-1,2-Dichloroethene	0.82184	0.73876	0.73023	0.67947	0.70876	0.66633	AVG		0.72423		7.65562	35.00000	O
1,2-Dichloroethylene (total	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+(	35.00000	M (
Chloroform	1.28846	1.23599	1.21824	1.13268	1.13993	1.05507	AVG		1.17839		7.18040	35.00000	O
Carbon Tetrachloride	715	18007	139617	397208	986070	1839725	LNR	0.05433	0.34853		0.99827	0.99000	O
1,1,1-Trichloroethane	1.03258	1.08890	1.02817	0.96181	1.00210	0.93005	AVG		1.00727		5.58024	35.00000	O
2-Butanone	0.09592	0.12308	0.13690	0.12039	0.11125	0.11388	AVG		0.11690		11.67707	35.00000	O
Benzene	1.40953	1.39156	1.31018	1.16493	1.19539	1.03699	AVG		1.25143		11.56265	35.00000	O
Cyclohexane	0.87555	0.86097	0.87164	0.77147	0.83171	0.75971	AVG		0.82851		6.18388	35.00000	O
1,2-Dichloroethane	0.47608	0.43433	0.42138	0.38929	0.38841	0.38235	AVG		0.41531		8.73380	35.00000	O
Trichloroethene	0.45745	0.44193	0.37954	0.34026	0.34446	0.31942	AVG		0.38051		15.02555	35.00000	O
1,2-Dichloropropane	0.28818	0.31505	0.30011	0.28341	0.29359	0.27123	AVG		0.29193		5.12556	35.00000	O
Bromodichloromethane	0.43243	0.47864	0.48287	0.46529	0.47752	0.45218	AVG		0.46482		4.17978	35.00000	O
cis-1,3-dichloropropene	0.42656	0.49376	0.53172	0.50208	0.51318	0.48262	AVG		0.49165		7.33409	35.00000	O
Toluene	0.96663	0.89965	0.84633	0.76053	0.78241	0.69551	AVG		0.82518		11.97517	35.00000	O
4-methyl-2-pentanone	0.12460	0.14767	0.15260	0.14198	0.13446	0.12896	AVG		0.13838		7.88536	35.00000	O
Tetrachloroethene	0.27661	0.29335	0.28764	0.25288	0.27954	0.25777	AVG		0.27463		5.88231	35.00000	O
trans-1,3-Dichloropropene	0.37819	0.39657	0.42308	0.41462	0.42264	0.41277	AVG		0.40798		4.28446	35.00000	O
1,1,2-Trichloroethane	0.23714	0.24064	0.23630	0.22463	0.22709	0.22100	AVG		0.23113		3.43116	35.00000	O
Dibromochloromethane	0.26593	0.31306	0.33387	0.33823	0.35352	0.35085	AVG		0.32591		10.04850	35.00000	O
1,2-Dibromoethane	0.31548	0.29660	0.28902	0.26887	0.27974	0.28484	AVG		0.28909		5.50686	35.00000	O
2-Hexanone	0.07275	0.10013	0.11747	0.10430	0.10226	0.10402	AVG		0.10016		14.72355	35.00000	O
Chlorobenzene	1.07924	1.05461	0.99921	0.88664	0.88482	0.77637	AVG		0.94681		12.35485	35.00000	O
Ethylbenzene	0.54480	0.53304	0.53243	0.48931	0.51719	0.47383	AVG		0.51510		5.40550	35.00000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: TJ0540
Project : Fort Devens/DCL Leachate 68016363
Instrument ID: GCMS-C
Lab File IDs : C1276A.D C1275A.D C1274A.D C1273A.D C1279A.D C1277A.D
Column ID:
Calibration Date(s): 19-DEC-16 10:23
19-DEC-16 14:03

Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+(	35.00000	M (
m+p-Xylenes	0.64593	0.64989	0.66446	0.58322	0.57818	0.49309	AVG		0.60246		10.7325{	35.00000	O
o-Xylene	0.52664	0.64349	0.65897	0.60879	0.62650	0.58063	AVG		0.60751		7.91727	35.00000	O
Styrene	0.90313	1.05984	1.09492	1.00937	1.01889	0.88883	AVG		0.99583		8.36235	35.00000	O
Bromoform	0.17291	0.17555	0.19517	0.18822	0.20234	0.21050	AVG		0.19078		7.77386	35.00000	O
Isopropylbenzene	2.83441	3.23703	3.14023	2.74185	2.73619	2.19048	AVG		2.81336		13.1643(	35.00000	O
1,1,2,2-Tetrachloroethane	0.73286	0.70812	0.65078	0.62108	0.63493	0.61483	AVG		0.66043		7.38450	35.00000	O
1,3-Dichlorobenzene	1.56570	1.53518	1.49174	1.35404	1.39212	1.18580	AVG		1.42076		9.93467	35.00000	O
1,4-Dichlorobenzene	1.74193	1.53887	1.46546	1.34506	1.36037	1.18147	AVG		1.43886		13.3239]	35.00000	O
1,2-Dichlorobenzene	1.34585	1.36129	1.33657	1.25090	1.26197	1.12980	AVG		1.28106		6.79363	35.00000	O
1,2-Dibromo-3-Chloropropane	0.10322	0.07261	0.07940	0.08075	0.08228	0.09172	AVG		0.08500		12.7533(	35.00000	O
1,2,4-Trichlorobenzene	0.66972	0.65458	0.66976	0.61563	0.65740	0.64164	AVG		0.65146		3.14115	35.00000	O
Methyl Acetate	0.25314	0.26857	0.26087	0.25534	0.25463	0.26653	AVG		0.25985		2.52031	35.00000	O
Methylcyclohexane	1.15090	1.12691	1.16477	1.06395	1.10873	0.99704	AVG		1.10205		5.66107	35.00000	O
Dibromofluoromethane	0.65988	0.64944	0.65826	0.66158	0.63471	0.63690	AVG		0.65013		1.82761	35.00000	
1,2-Dichloroethane-D4	0.70470	0.70886	0.68915	0.68890	0.65026	0.67597	AVG		0.68631		3.10357	35.00000	
Toluene-D8	1.22254	1.22252	1.19305	1.21055	1.20690	1.21449	AVG		1.21167		0.91499	35.00000	
P-Bromofluorobenzene	0.57074	0.58141	0.56473	0.57227	0.56997	0.58453	AVG		0.57394		1.30741	35.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Report Date: 30-Dec-2016 15:39

Katahdin Analytical Services

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: WG197007-5
Level: LOW
Data Type: MS DATA
SpikeList File: E624_IND.spk
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Misc Info: WG197007,WG197097-3,TJ0540-1

Client SDG: WG197007
Fraction: VOA
Client Smp ID: Independent Source
Operator: TBJ
SampleType: LCS
Quant Type: ISTD

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1 Dichlorodifluorome	20.0	12.2	61.29	60-140
	2 Chloromethane	20.0	15.4	76.99	0-273
	3 Vinyl chloride	20.0	17.1	85.54	0-251
	4 Bromomethane	20.0	15.1	75.33	0-242
	5 Chloroethane	20.0	20.3	101.56	14-230
	6 Trichlorofluoromet	20.0	18.5	92.61	17-181
	7 Diethyl Ether	20.0	20.8	104.05	60-140
	8 Tertiary-butyl alc	100	78.4	78.39	60-140
	9 1,1-Dichloroethene	20.0	16.8	84.15	0-234
	10 Carbon Disulfide	20.0	20.8	104.25	60-140
	11 Freon-113	20.0	18.9	94.44	60-140
	12 Iodomethane	20.0	15.2	75.79	60-140
	13 Acrolein	100	96.7	96.67	60-140
	14 Methylene Chloride	20.0	17.1	85.38	0-221
	15 Acetone	20.0	21.5	107.70	60-140
	16 Isobutyl Alcohol	400	246	61.40	60-140
	17 trans-1,2-Dichloro	20.0	18.9	94.62	54-156
	18 Allyl Chloride	20.0	20.6	102.83	60-140
	19 Methyl tert-butyl	40.0	39.8	99.47	60-140
	20 Acetonitrile	200	190	94.87	60-140
	21 Di-isopropyl ether	20.0	20.1	100.74	60-140
	22 Chloroprene	20.0	19.7	98.41	60-140
	23 Propionitrile	200	213	106.62	60-140
	24 Methacrylonitrile	200	221	110.64	60-140
	25 1,1-Dichloroethane	20.0	19.2	95.97	59-155
	26 Acrylonitrile	100	104	103.73	60-140
	27 Ethyl tertiary-but	20.0	19.2	96.11	60-140
	28 Vinyl Acetate	20.0	25.5	127.34	60-140
	29 cis-1,2-Dichloroet	20.0	17.7	88.41	60-140
M	30 1,2-Dichloroethyle	40.0	36.6	91.51	60-140
	31 Methyl Methacrylat	20.0	19.9	99.48	60-140
	32 2,2-Dichloropropan	20.0	18.5	92.72	60-140
	33 Bromochloromethane	20.0	20.1	100.75	60-140
	34 Chloroform	20.0	20.0	100.16	51-138
	35 Carbon Tetrachlori	20.0	17.0	84.85	70-140
	36 Tetrahydrofuran	20.0	20.8	103.96	60-140
	38 1,1,1-Trichloroeth	20.0	19.1	95.57	52-162
	39 1,1-Dichloropropen	20.0	19.3	96.43	60-140
	40 2-Butanone	20.0	21.4	106.90	60-140
	41 Benzene	20.0	19.2	96.28	37-151

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Report Date: 30-Dec-2016 15:39

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	20.0	19.9	99.61	60-140
	44	Ethyl Methacrylate	20.0	21.7	108.60	60-140
	46	Tertiary-amyl meth	20.0	18.8	93.98	60-140
	47	1,2-Dichloroethane	20.0	19.9	99.44	49-155
	48	Trichloroethene	20.0	19.3	96.72	71-157
	50	Dibromomethane	20.0	19.9	99.43	60-140
	51	1,2-Dichloropropan	20.0	19.4	97.28	0-210
	52	Bromodichlorometha	20.0	20.4	102.20	35-155
	53	cis-1,3-dichloropr	20.0	21.4	107.26	0-227
	54	1,4-Dioxane	400	198	49.65*	60-140
	56	2-Chloroethylvinyl	20.0	23.6	118.14	0-305
	57	Toluene	20.0	19.5	97.67	47-150
	58	4-methyl-2-pentano	20.0	22.4	111.97	60-140
	59	Tetrachloroethene	20.0	19.7	98.59	64-148
	60	trans-1,3-Dichloro	20.0	22.2	110.88	17-183
	61	1,1,2-Trichloroeth	20.0	20.4	102.15	60-140
	62	Dibromochlorometha	20.0	20.7	103.42	53-149
	63	1,3-Dichloropropan	20.0	19.9	99.52	60-140
	64	1,2-Dibromoethane	20.0	19.8	98.75	60-140
	65	2-Hexanone	20.0	19.4	97.21	60-140
	67	Chlorobenzene	20.0	19.8	99.27	37-160
	152	1-Chlorohexane	20.0	19.7	98.60	60-140
	68	Ethylbenzene	20.0	19.2	95.77	37-162
	69	1,1,1,2-Tetrachlor	20.0	19.7	98.73	60-140
M	70	Xylenes (total)	60.0	61.9	103.22	60-140
	71	m+p-Xylenes	40.0	41.2	102.93	60-140
	72	o-Xylene	20.0	20.8	103.80	60-140
	73	Styrene	20.0	20.5	102.49	60-140
	74	Bromoform	20.0	20.7	103.52	45-169
	75	Isopropylbenzene	20.0	21.3	106.45	60-140
	77	cis-1,4-Dichloro-2	20.0	20.0	99.94	60-140
	78	trans-1,4-Dichloro	20.0	21.8	109.18	60-140
	79	Bromobenzene	20.0	19.4	96.95	60-140
	80	N-Propylbenzene	20.0	21.8	109.29	60-140
	81	1,1,2,2-Tetrachlor	20.0	20.2	101.26	46-157
	82	1,3,5-Trimethylben	20.0	20.5	102.62	60-140
	83	2-Chlorotoluene	20.0	20.9	104.45	60-140
	84	1,2,3-Trichloropro	20.0	20.3	101.36	60-140
	85	4-Chlorotoluene	20.0	20.6	102.80	60-140
	86	tert-Butylbenzene	20.0	21.1	105.73	60-140
	87	Pentachloroethane	20.0	21.0	104.88	60-140
	88	1,2,4-Trimethylben	20.0	21.3	106.39	60-140
	89	P-Isopropyltoluene	20.0	21.0	104.94	60-140
	90	1,3-Dichlorobenzen	20.0	20.0	100.13	59-156
	92	1,4-Dichlorobenzen	20.0	20.0	99.94	18-190
	93	N-Butylbenzene	20.0	20.9	104.33	60-140
	94	sec-Butylbenzene	20.0	21.5	107.41	60-140
	95	1,2-Dichlorobenzen	20.0	20.6	103.28	18-190
	96	1,2-Dibromo-3-Chlo	20.0	19.0	95.21	60-140
	97	1,3,5-Trichloroben	20.0	20.0	99.85	60-140
	98	Hexachlorobutadien	20.0	17.2	86.09	60-140
	99	1,2,4-Trichloroben	20.0	19.4	97.06	60-140
	100	1,2,3-Trimethylben	20.0	20.7	103.52	60-140
	101	Naphthalene	20.0	21.2	105.92	60-140

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Report Date: 30-Dec-2016 15:39

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	102 1,2,3-Trichloroben	20.0	17.4	86.96	60-140
	103 Methyl Acetate	20.0	18.9	94.41	60-140
	104 Methylcyclohexane	20.0	19.7	98.71	60-140
M	153 Total Alkylbenzene	140	169	121.02	60-140

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	37 Dibromofluorometha	50.0	50.5	101.10	68-128
$	45 1,2-Dichloroethane	50.0	50.4	100.82	67-135
$	55 Toluene-D8	50.0	49.6	99.14	65-128
$	76 P-Bromofluorobenze	50.0	49.8	99.58	56-133

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Report Date: 30-Dec-2016 15:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Lab Smp Id: WG197007-5 Client Smp ID: Independent Source
Inj Date : 20-DEC-2016 11:44 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197007-5,TJ0540
Misc Info : WG197007,WG197097-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Meth Date : 30-Dec-2016 15:05 elittlefie Quant Type: ISTD
Cal Date : 19-DEC-2016 14:03 Cal File: C1279A.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.708	1.710	(0.230)	90470	12.2574	12.2	
2	Chloromethane	50	1.908	1.910	(0.256)	125464	15.3985	15.4	
3	Vinyl chloride	62	2.001	1.996	(0.269)	129109	17.1073	17.1	
4	Bromomethane	94	2.344	2.346	(0.315)	70344	15.0655	15.1	
5	Chloroethane	64	2.480	2.482	(0.333)	71252	20.3124	20.3	
6	Trichlorofluoromethane	101	2.630	2.632	(0.353)	190239	18.5213	18.5	
7	Diethyl Ether	59	2.994	2.997	(0.402)	94275	20.8109	20.8	
8	Tertiary-butyl alcohol	59	4.610	4.612	(0.620)	39298	78.3915	78.4	
9	1,1-Dichloroethene	96	3.216	3.219	(0.432)	144470	16.8296	16.8	
10	Carbon Disulfide	76	3.245	3.247	(0.436)	434901	20.8506	20.8	
11	Freon-113	151	3.273	3.276	(0.440)	119027	18.8871	18.9	
12	Iodomethane	142	3.395	3.397	(0.456)	95274	15.1574	15.2	
13	Acrolein	56	3.659	3.662	(0.492)	70586	96.6684	96.7	
14	Methylene Chloride	84	3.988	3.990	(0.536)	179831	17.0767	17.1	
15	Acetone	43	4.081	4.075	(0.548)	31107	21.5390	21.5	
16	Isobutyl Alcohol	43	7.676	7.679	(1.032)	39340	245.604	246	
17	trans-1,2-Dichloroethene	96	4.217	4.219	(0.567)	161350	18.9230	18.9	
18	Allyl Chloride	41	3.838	3.840	(0.516)	179498	20.5654	20.6	
19	Methyl tert-butyl ether	73	4.403	4.405	(0.592)	677611	39.7889	39.8	
20	Acetonitrile	39	4.796	4.798	(0.645)	15288	189.737	190	
21	Di-isopropyl ether	45	5.046	5.048	(0.678)	438027	20.1485	20.1	
22	Chloroprene	53	5.182	5.177	(0.696)	225447	19.6818	19.7	
23	Propionitrile	54	7.340	7.343	(0.987)	109669	213.240	213	
24	Methacrylonitrile	41	7.369	7.364	(0.990)	592056	221.285	221	

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Report Date: 30-Dec-2016 15:39

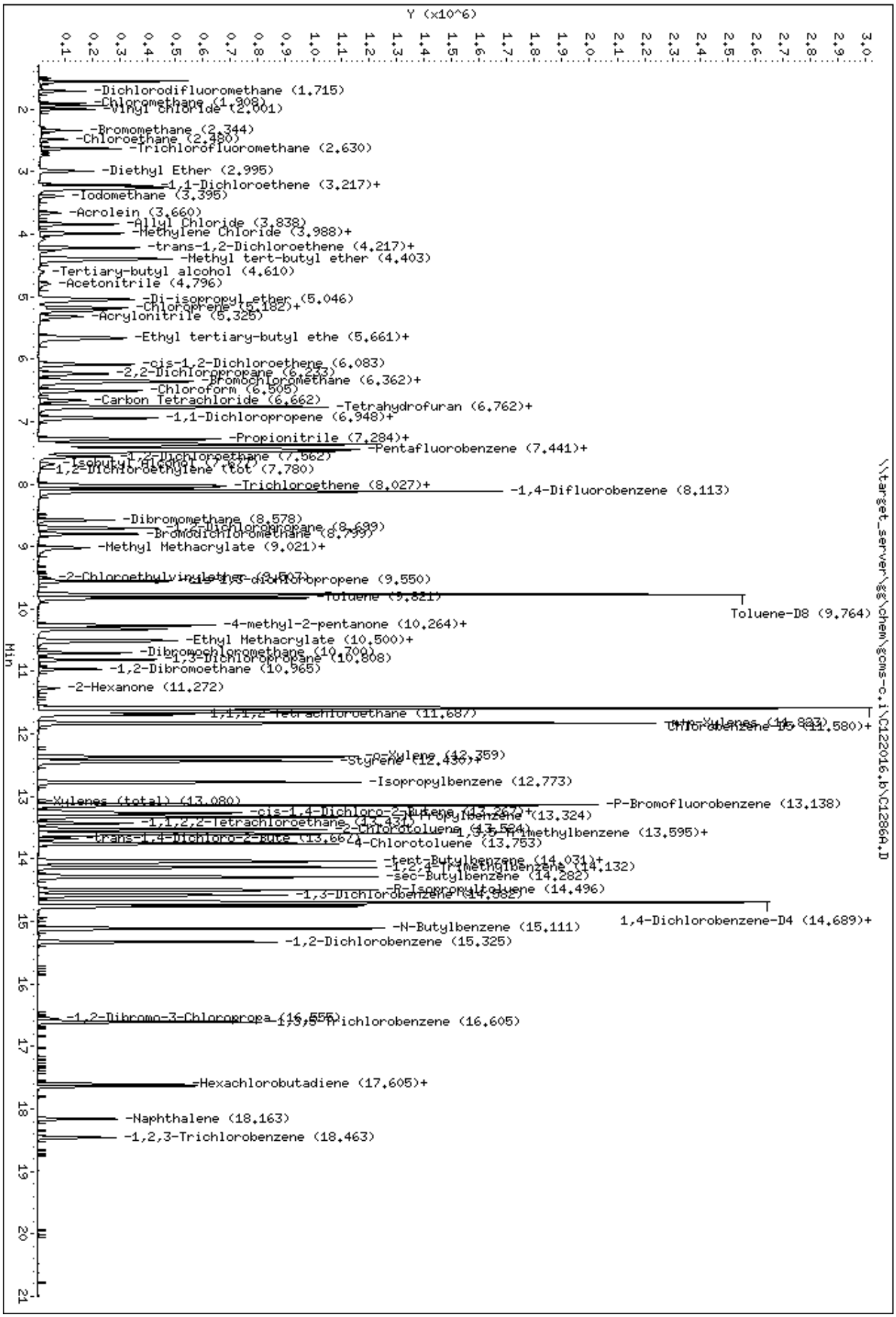
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.217	5.220	(0.701)	278949	19.1949	19.2	
	26	Acrylonitrile	52	5.325	5.320	(0.716)	142842	103.726	104	
	27	Ethyl tertiary-butyl ether	59	5.661	5.663	(0.761)	336603	19.2227	19.2	
	28	Vinyl Acetate	43	5.682	5.685	(0.700)	250214	25.4690	25.5	
	29	cis-1,2-Dichloroethene	96	6.082	6.085	(0.817)	184550	17.6827	17.7	
M	30	1,2-Dichloroethylene (total)	96				345900	36.6057	36.6	
	31	Methyl Methacrylate	41	9.020	9.016	(1.112)	78670	19.8964	19.9	
	32	2,2-Dichloropropane	77	6.232	6.235	(0.838)	224815	18.5440	18.5	
	33	Bromochloromethane	128	6.375	6.371	(0.857)	82356	20.1498	20.1	
	34	Chloroform	83	6.504	6.507	(0.874)	340159	20.0310	20.0	
	35	Carbon Tetrachloride	117	6.661	6.664	(0.821)	130361	16.9690	17.0	
	36	Tetrahydrofuran	42	6.726	6.721	(0.904)	22246	20.7929	20.8	
$	37	Dibromofluoromethane	113	6.761	6.764	(0.909)	473575	50.5478	50.5	
	38	1,1,1-Trichloroethane	97	6.769	6.764	(0.910)	277458	19.1145	19.1	
	39	1,1-Dichloropropene	75	6.947	6.943	(0.856)	234580	19.2853	19.3	
	40	2-Butanone	43	6.969	6.957	(0.937)	36018	21.3799	21.4	
	41	Benzene	78	7.283	7.286	(0.898)	632390	19.2561	19.2	
*	42	Pentafluorobenzene	168	7.440	7.436	(1.000)	720540	50.0000		
	43	Cyclohexane	56	6.354	6.349	(0.854)	237847	19.9211	19.9	
	44	Ethyl Methacrylate	69	10.521	10.524	(1.297)	162321	21.7203	21.7	
$	45	1,2-Dichloroethane-D4	65	7.469	7.472	(1.004)	498589	50.4123	50.4	
	46	Tertiary-amyl methyl ether	73	7.476	7.479	(1.005)	288883	18.7955	18.8	
	47	1,2-Dichloroethane	62	7.562	7.557	(0.932)	216763	19.8886	19.9	
	48	Trichloroethene	95	8.055	8.058	(0.993)	193163	19.3439	19.3	
*	49	1,4-Difluorobenzene	114	8.112	8.115	(1.000)	1312143	50.0000		
	50	Dibromomethane	93	8.577	8.580	(1.057)	103838	19.8856	19.9	
	51	1,2-Dichloropropane	63	8.699	8.701	(1.072)	149053	19.4560	19.4	
	52	Bromodichloromethane	83	8.799	8.794	(1.085)	249329	20.4396	20.4	
	53	cis-1,3-dichloropropene	75	9.549	9.552	(1.177)	276772	21.4512	21.4	
	54	1,4-Dioxane	88	9.049	9.051	(1.115)	29198	198.583	198(R)	
$	55	Toluene-D8	98	9.764	9.766	(1.204)	1576241	49.5708	49.6	
	56	2-Chloroethylvinylether	63	9.499	9.509	(1.171)	18544	23.6273	23.6	
	57	Toluene	92	9.828	9.823	(1.211)	423010	19.5341	19.5	
	58	4-methyl-2-pentanone	43	10.285	10.288	(1.268)	81323	22.3942	22.4	
	59	Tetrachloroethene	164	10.264	10.259	(0.886)	139094	19.7171	19.7	
	60	trans-1,3-Dichloropropene	75	10.321	10.316	(1.272)	237430	22.1762	22.2	
	61	1,1,2-Trichloroethane	83	10.500	10.502	(1.294)	123922	20.4302	20.4	
	62	Dibromochloromethane	129	10.700	10.702	(0.924)	173160	20.6839	20.7	
	63	1,3-Dichloropropane	76	10.807	10.810	(0.933)	262886	19.9043	19.9	
	64	1,2-Dibromoethane	107	10.964	10.967	(1.352)	149840	19.7507	19.8	
	65	2-Hexanone	43	11.265	11.260	(0.973)	50019	19.4422	19.4	
*	66	Chlorobenzene-D5	117	11.579	11.582	(1.000)	1284352	50.0000		
	67	Chlorobenzene	112	11.601	11.603	(1.002)	482861	19.8538	19.8	
	152	1-Chlorohexane	91	11.586	11.589	(1.557)	282705	19.7193	19.7	
	68	Ethylbenzene	106	11.644	11.639	(1.006)	253427	19.1535	19.2	
	69	1,1,1,2-Tetrachloroethane	131	11.686	11.682	(1.009)	158325	19.7468	19.7	
M	70	Xylenes (total)	106				961127	61.9327	61.9	
	71	m+p-Xylenes	106	11.822	11.825	(1.021)	637166	41.1726	41.2	
	72	o-Xylene	106	12.358	12.361	(1.067)	323961	20.7601	20.8	
	73	Styrene	104	12.430	12.432	(1.073)	524339	20.4981	20.5	
	74	Bromoform	173	12.458	12.461	(1.076)	101458	20.7030	20.7	
	75	Isopropylbenzene	105	12.773	12.768	(0.870)	842119	21.2905	21.3	
$	76	P-Bromofluorobenzene	95	13.137	13.133	(1.619)	749952	49.7913	49.8	
	77	cis-1,4-Dichloro-2-Butene	53	13.238	13.240	(0.901)	38462	19.9884	20.0	

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Report Date: 30-Dec-2016 15:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.666	13.669	(0.930)	30457	21.8355	21.8	
79	Bromobenzene	156	13.266	13.269	(0.903)	210136	19.3895	19.4	
80	N-Propylbenzene	91	13.323	13.319	(0.907)	1069300	21.8589	21.8	
81	1,1,2,2-Tetrachloroethane	83	13.431	13.426	(0.914)	188049	20.2526	20.2	
82	1,3,5-Trimethylbenzene	105	13.595	13.597	(0.926)	710619	20.5239	20.5	
83	2-Chlorotoluene	91	13.523	13.526	(0.921)	640728	20.8894	20.9	
84	1,2,3-Trichloropropane	75	13.602	13.597	(0.926)	137799	20.2713	20.3	
85	4-Chlorotoluene	91	13.752	13.755	(0.936)	681666	20.5600	20.6	
86	tert-Butylbenzene	119	14.031	14.033	(0.955)	686191	21.1456	21.1	
87	Pentachloroethane	117	14.052	14.055	(0.957)	131760	20.9756	21.0	
88	1,2,4-Trimethylbenzene	105	14.131	14.134	(0.962)	737499	21.2773	21.3	
89	P-Isopropyltoluene	119	14.496	14.498	(0.987)	764465	20.9871	21.0	
90	1,3-Dichlorobenzene	146	14.581	14.577	(0.993)	400033	20.0268	20.0	
* 91	1,4-Dichlorobenzene-D4	152	14.689	14.691	(1.000)	702961	50.0000		
92	1,4-Dichlorobenzene	146	14.710	14.712	(1.001)	404346	19.9882	20.0	
93	N-Butylbenzene	91	15.110	15.113	(1.029)	785899	20.8651	20.9	
94	sec-Butylbenzene	105	14.281	14.284	(0.972)	967266	21.4817	21.5	
95	1,2-Dichlorobenzene	146	15.325	15.327	(1.043)	372027	20.6558	20.6	
96	1,2-Dibromo-3-Chloropropane	75	16.554	16.556	(1.127)	22754	19.0411	19.0	
97	1,3,5-Trichlorobenzene	180	16.604	16.607	(1.130)	264421	19.9695	20.0	
98	Hexachlorobutadiene	225	17.605	17.607	(1.199)	104715	17.2170	17.2	
99	1,2,4-Trichlorobenzene	180	17.634	17.636	(1.200)	177796	19.4122	19.4	
100	1,2,3-Trimethylbenzene	105	14.760	14.755	(1.005)	744227	20.7033	20.7	
101	Naphthalene	128	18.162	18.158	(1.236)	242429	21.1837	21.2	
102	1,2,3-Trichlorobenzene	180	18.463	18.458	(1.257)	92244	17.3915	17.4	
103	Methyl Acetate	43	4.267	4.269	(0.573)	70708	18.8827	18.9	
104	Methylcyclohexane	83	8.027	8.022	(1.079)	313516	19.7410	19.7	
M 153	Total Alkylbenzenes	100				6563358	169.430	169	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D
Date : 20-DEC-2016 11:44
Client ID: Independent Source
Sample Info: WG197007-5,TJ0540
Instrument: gcms-c.i
-Dichlorodifluoromethane (1.715)
-Chloromethane (1.908)
-Vinyl chloride (2.001)
-Bromomethane (2.344)
-Chloroethane (2.480)
-Trichlorofluoromethane (2.630)
-Diethyl Ether (2.995)
-1,1-Dichloroethene (3.217)+
-Iodomethane (3.395)
-Acrolein (3.660)
-Allyl Chloride (3.838)
-Methylene Chloride (3.988)+
-trans-1,2-Dichloroethene (4.217)+
-Methyl tert-butyl ether (4.403)
-Tertiary-butyl alcohol (4.610)
-Acetonitrile (4.796)
-Di-isopropyl ether (5.046)
-Chloroprene (5.182)+
-Acrylonitrile (5.325)
-Ethyl tertiary-butyl ethe (5.661)+
-cis-1,2-Dichloroethene (6.083)
-2,2-Dichloropropane (6.233)
-Bromochloromethane (6.362)+
-Chloroform (6.505)
-Carbon Tetrachloride (6.662)
-Tetrahydrofuran (6.762)+
-1,1-Dichloropropene (6.948)+
-Propionitrile (7.284)+
-Pentafluorobenzene (7.441)+
-1,2-Dichloroethane (7.562)
-Isobutyl Alcohol (7.687)
1,2-Dichloroethylene (tot) (7.780)
-Trichloroethene (8.027)+
-1,4-Difluorobenzene (8.113)
-Dibromomethane (8.578)
-1,2-Dichloropropane (8.699)
-Bromodichloromethane (8.799)
-Methyl Methacrylate (9.021)+
-2-Chloroethylvinylether (9.507)
cis-1,3-dichloropropene (9.550)
-Toluene (9.821)
Toluene-D8 (9.764)
-4-methyl-2-pentanone (10.264)+
-Ethyl Methacrylate (10.500)+
-Dibromochloromethane (10.700)
-1,3-Dichloropropane (10.808)
-1,2-Dibromoethane (10.965)
-2-Hexanone (11.272)
1,1,1,2-Tetrachloroethane (11.687)
m/p-Xylenes (11.823)
Chlorobenzene-D5 (11.580)+
-o-Xylene (12.359)
-Styrene (12.430)+
-Isopropylbenzene (12.773)
-Xylenes (total) (13.080)
-P-Bromofluorobenzene (13.138)
-cis-1,4-Dichloro-2-butene (13.227)+
-n-Propylbenzene (13.324)
-1,1,2,2-Tetrachloroethane (13.431)
-2-Chlorotoluene (13.524)
-trans-1,4-Dichloro-2-bute (13.667)
-1,3,5-Trimethylbenzene (13.595)+
-4-Chlorotoluene (13.753)
-tert-Butylbenzene (14.031)+
-1,2,4-Trimethylbenzene (14.132)
-sec-Butylbenzene (14.282)
-p-Isopropyltoluene (14.496)
-1,3-Dichlorobenzene (14.582)
1,4-Dichlorobenzene-D4 (14.689)+
-N-Butylbenzene (15.111)
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloroprop (16.556)
-1,3,5-Trichlorobenzene (16.605)
-Hexachlorobutadiene (17.605)+
-Naphthalene (18.163)
-1,2,3-Trichlorobenzene (18.463)
\\target_server\gg\chem\gcms-c.i\C122016.b\C1286A.D

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1273A.D
Report Date: 30-Dec-2016 15:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C121916.b\C1273A.D
Lab Smp Id: WG197097-4
Inj Date : 19-DEC-2016 10:23 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197097-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C121916.b\C6A05(02).m
Meth Date : 20-Dec-2016 10:27 tjordan Quant Type: ISTD
Cal Date : 05-DEC-2016 16:00 Cal File: C1188.D
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.708	1.710	(0.230)	366827	50.0000	46.6	
2 Chloromethane	50	1.908	1.910	(0.256)	356022	50.0000	44.0	
3 Vinyl chloride	62	2.001	1.996	(0.269)	368743	50.0000	45.5	
4 Bromomethane	94	2.344	2.346	(0.315)	216196	50.0000	49.7	
5 Chloroethane	64	2.480	2.482	(0.333)	195593	50.0000	49.3	
6 Trichlorofluoromethane	101	2.630	2.632	(0.354)	502632	50.0000	47.2	
7 Diethyl Ether	59	2.995	2.997	(0.402)	226074	50.0000	48.1	
8 Tertiary-butyl alcohol	59	4.596	4.612	(0.618)	71919	250.000	131	
9 1,1-Dichloroethene	96	3.223	3.219	(0.433)	381160	50.0000	44.0	
10 Carbon Disulfide	76	3.252	3.247	(0.437)	980654	50.0000	45.7	
11 Freon-113	151	3.273	3.276	(0.440)	294665	50.0000	45.4	
12 Iodomethane	142	3.395	3.397	(0.456)	299940	50.0000	47.4	
13 Acrolein	56	3.659	3.662	(0.492)	171091	250.000	238	
14 Methylene Chloride	84	3.988	3.990	(0.536)	479341	50.0000	47.4	
15 Acetone	43	4.074	4.075	(0.548)	337558	250.000	188	
16 Isobutyl Alcohol	43	7.676	7.679	(1.032)	81509	1000.00	430	
17 trans-1,2-Dichloroethene	96	4.217	4.219	(0.567)	399479	50.0000	45.8	
18 Allyl Chloride	41	3.838	3.840	(0.516)	441139	50.0000	46.4	
19 Methyl tert-butyl ether	73	4.396	4.405	(0.591)	1735424	100.000	95.5	
20 Acetonitrile	39	4.789	4.798	(0.644)	31300	500.000	369	
21 Di-isopropyl ether	45	5.046	5.048	(0.678)	1104343	50.0000	48.0	
22 Chloroprene	53	5.182	5.177	(0.696)	572754	50.0000	46.5	
23 Propionitrile	54	7.341	7.343	(0.987)	258056	500.000	438	
24 Methacrylonitrile	41	7.369	7.364	(0.990)	1349414	500.000	460	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1273A.D
Report Date: 30-Dec-2016 15:34

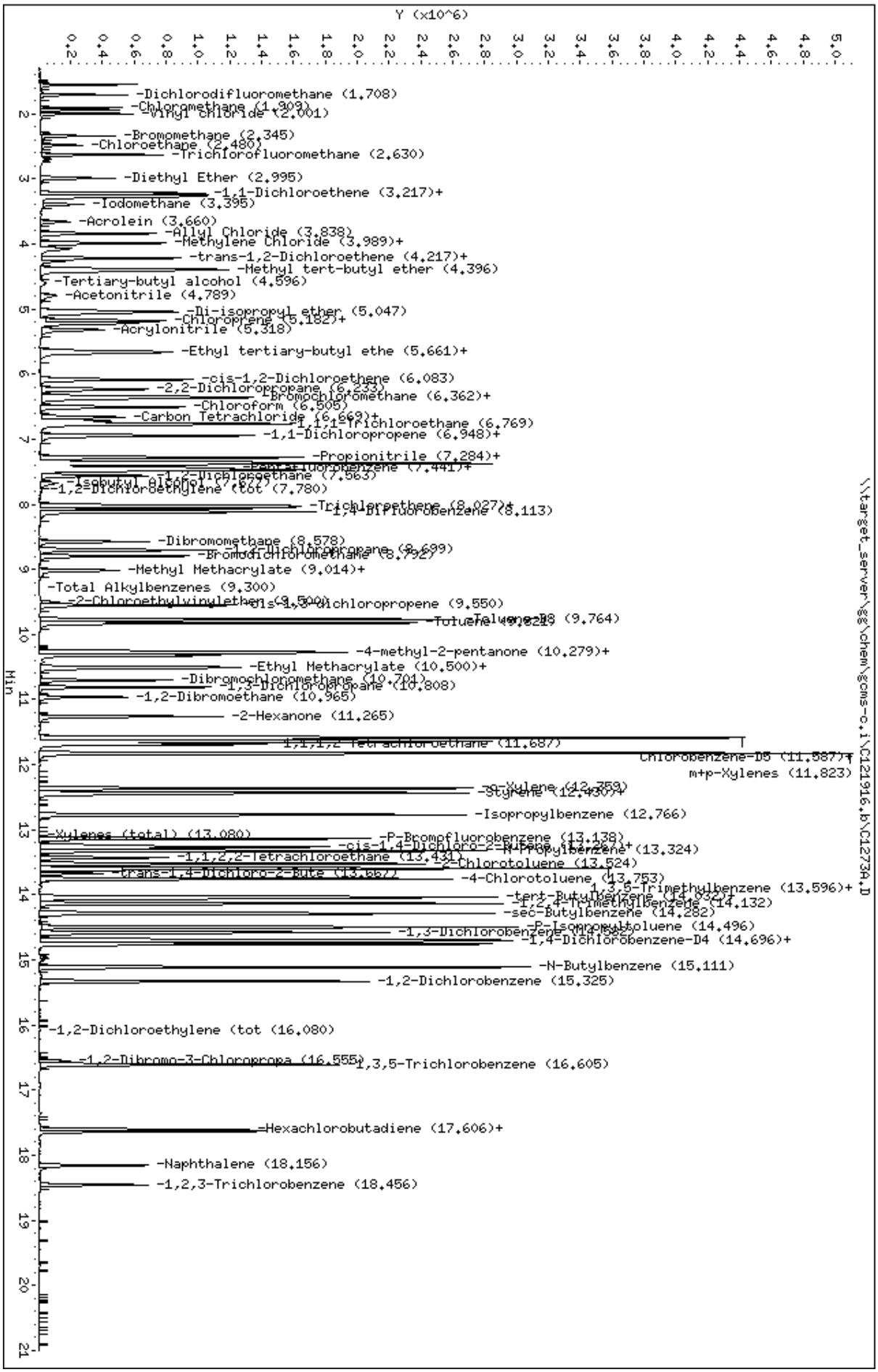
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.218	5.220	(0.701)	700601	50.0000	46.2	
	26	Acrylonitrile	52	5.318	5.320	(0.715)	330373	250.000	232	
	27	Ethyl tertiary-butyl ether	59	5.661	5.663	(0.761)	920791	50.0000	49.6	
	28	Vinyl Acetate	43	5.682	5.685	(0.700)	539386	50.0000	48.5	
	29	cis-1,2-Dichloroethene	96	6.082	6.085	(0.817)	495285	50.0000	46.5	
M	30	1,2-Dichloroethylene (total)	96				894764	50.0000	(a)	
	31	Methyl Methacrylate	41	9.013	9.016	(1.111)	214624	50.0000	50.9	
	32	2,2-Dichloropropane	77	6.233	6.235	(0.838)	598015	50.0000	46.6	
	33	Bromochloromethane	128	6.376	6.371	(0.857)	206225	50.0000	46.1	
	34	Chloroform	83	6.504	6.507	(0.874)	825647	50.0000	46.5	
	35	Carbon Tetrachloride	117	6.669	6.664	(0.822)	397208	50.0000	56.0	
	36	Tetrahydrofuran	42	6.719	6.721	(0.903)	270082	250.000	250	
$	37	Dibromofluoromethane	113	6.762	6.764	(0.909)	482247	50.0000	50.2	
	38	1,1,1-Trichloroethane	97	6.769	6.764	(0.910)	701092	50.0000	46.8	
	39	1,1-Dichloropropene	75	6.947	6.943	(0.856)	593171	50.0000	45.1	
	40	2-Butanone	43	6.955	6.957	(0.935)	438784	250.000	220	
	41	Benzene	78	7.283	7.286	(0.898)	1574756	50.0000	44.4	
*	42	Pentafluorobenzene	168	7.441	7.436	(1.000)	728930	50.0000		
	43	Cyclohexane	56	6.354	6.349	(0.854)	562350	50.0000	44.2	
	44	Ethyl Methacrylate	69	10.521	10.524	(1.297)	405608	50.0000	49.6	
$	45	1,2-Dichloroethane-D4	65	7.469	7.472	(1.004)	502163	50.0000	50.0	
	46	Tertiary-amyl methyl ether	73	7.476	7.479	(1.005)	807260	50.0000	50.4	
	47	1,2-Dichloroethane	62	7.562	7.557	(0.932)	526244	50.0000	46.2	
	48	Trichloroethene	95	8.055	8.058	(0.993)	459970	50.0000	44.8	
*	49	1,4-Difluorobenzene	114	8.112	8.115	(1.000)	1351801	50.0000		
	50	Dibromomethane	93	8.577	8.580	(1.057)	254310	50.0000	49.9	
	51	1,2-Dichloropropane	63	8.699	8.701	(1.072)	383118	50.0000	47.2	
	52	Bromodichloromethane	83	8.792	8.794	(1.084)	628975	50.0000	48.2	
	53	cis-1,3-dichloropropene	75	9.549	9.552	(1.177)	678714	50.0000	47.2	
	54	1,4-Dioxane	88	9.056	9.051	(1.116)	17677	1000.00	145	
$	55	Toluene-D8	98	9.764	9.766	(1.204)	1636421	50.0000	50.7	
	56	2-Chloroethylvinylether	63	9.499	9.509	(1.171)	53889	50.0000	63.3	
	57	Toluene	92	9.821	9.823	(1.211)	1028088	50.0000	44.9	
	58	4-methyl-2-pentanone	43	10.285	10.288	(1.268)	959622	250.000	232	
	59	Tetrachloroethene	164	10.264	10.259	(0.886)	327456	50.0000	44.0	
	60	trans-1,3-Dichloropropene	75	10.321	10.316	(1.272)	560481	50.0000	49.0	
	61	1,1,2-Trichloroethane	83	10.500	10.502	(1.294)	303653	50.0000	47.5	
	62	Dibromochloromethane	129	10.700	10.702	(0.924)	437982	50.0000	50.6	
	63	1,3-Dichloropropane	76	10.807	10.810	(0.933)	637439	50.0000	46.3	
	64	1,2-Dibromoethane	107	10.965	10.967	(1.352)	363460	50.0000	46.5	
	65	2-Hexanone	43	11.265	11.260	(0.973)	675282	250.000	222	
*	66	Chlorobenzene-D5	117	11.579	11.582	(1.000)	1294909	50.0000		
	67	Chlorobenzene	112	11.601	11.603	(1.002)	1148119	50.0000	44.4	
	152	1-Chlorohexane	91	11.586	11.589	(1.001)	678481	50.0000	46.8	
	68	Ethylbenzene	106	11.644	11.639	(1.006)	633613	50.0000	46.0	
	69	1,1,1,2-Tetrachloroethane	131	11.686	11.682	(1.009)	403534	50.0000	48.1	
M	70	Xylenes (total)	106				2298756	150.000	(a)	
	71	m+p-Xylenes	106	11.822	11.825	(1.021)	1510425	100.000	87.8	
	72	o-Xylene	106	12.358	12.361	(1.067)	788331	50.0000	46.2	
	73	Styrene	104	12.430	12.432	(1.073)	1307037	50.0000	46.1	
	74	Bromoform	173	12.458	12.461	(1.076)	243727	50.0000	48.2	
	75	Isopropylbenzene	105	12.766	12.768	(0.869)	1954670	50.0000	43.6	
$	76	P-Bromofluorobenzene	95	13.138	13.133	(1.619)	773597	50.0000	50.7	
	77	cis-1,4-Dichloro-2-Butene	53	13.238	13.240	(0.901)	105104	50.0000	52.8	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1273A.D
Report Date: 30-Dec-2016 15:34

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
78 trans-1,4-Dichloro-2-Butene	53	13.666	13.669	(0.930)	76521	50.0000	55.2	
79 Bromobenzene	156	13.266	13.269	(0.903)	518853	50.0000	46.3	
80 N-Propylbenzene	91	13.323	13.319	(0.907)	2406843	50.0000	43.5	
81 1,1,2,2-Tetrachloroethane	83	13.431	13.426	(0.914)	442767	50.0000	47.7	
82 1,3,5-Trimethylbenzene	105	13.595	13.597	(0.926)	1762430	50.0000	44.8	
83 2-Chlorotoluene	91	13.524	13.526	(0.921)	1512044	50.0000	44.8	
84 1,2,3-Trichloropropane	75	13.602	13.597	(0.926)	330698	50.0000	48.0	
85 4-Chlorotoluene	91	13.752	13.755	(0.936)	1642010	50.0000	45.4	
86 tert-Butylbenzene	119	14.031	14.033	(0.955)	1646855	50.0000	45.4	
87 Pentachloroethane	117	14.052	14.055	(0.957)	336762	50.0000	49.8	
88 1,2,4-Trimethylbenzene	105	14.131	14.134	(0.962)	1741596	50.0000	44.7	
89 P-Isopropyltoluene	119	14.496	14.498	(0.987)	1820476	50.0000	43.7	
90 1,3-Dichlorobenzene	146	14.581	14.577	(0.993)	965301	50.0000	45.4	
* 91 1,4-Dichlorobenzene-D4	152	14.689	14.691	(1.000)	712903	50.0000		
92 1,4-Dichlorobenzene	146	14.710	14.712	(1.001)	958894	50.0000	45.9	
93 N-Butylbenzene	91	15.110	15.113	(1.029)	1869018	50.0000	43.2	
94 sec-Butylbenzene	105	14.281	14.284	(0.972)	2226235	50.0000	43.7	
95 1,2-Dichlorobenzene	146	15.325	15.327	(1.043)	891770	50.0000	46.8	
96 1,2-Dibromo-3-Chloropropane	75	16.554	16.556	(1.127)	57565	50.0000	50.8	
97 1,3,5-Trichlorobenzene	180	16.604	16.607	(1.130)	641340	50.0000	45.4	
98 Hexachlorobutadiene	225	17.605	17.607	(1.199)	253224	50.0000	42.9	
99 1,2,4-Trichlorobenzene	180	17.634	17.636	(1.200)	438886	50.0000	46.0	
100 1,2,3-Trimethylbenzene	105	14.753	14.755	(1.004)	1783972	50.0000	45.8	
101 Naphthalene	128	18.155	18.158	(1.236)	580578	50.0000	47.5	
102 1,2,3-Trichlorobenzene	180	18.456	18.458	(1.256)	225481	50.0000	43.1	
103 Methyl Acetate	43	4.267	4.269	(0.573)	186122	50.0000	48.9	
104 Methylcyclohexane	83	8.027	8.022	(1.079)	775546	50.0000	45.7	
M 153 Total Alkylbenzenes	100				15428123	50.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1273A.D
Date : 19-DEC-2016 10:23
Client ID:
Sample Info: WG197097-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18
-Dichlorodifluoromethane (1.708)
-Chloromethane (1.909)
-Vinyl chloride (2.001)
-Bromomethane (2.345)
-Chloroethane (2.480)
-Trichlorofluoromethane (2.630)
-Diethyl Ether (2.995)
-1,1-Dichloroethene (3.217)+
-Iodomethane (3.395)
-Acrolein (3.660)
-Allyl Chloride (3.838)
-Methylene Chloride (3.989)+
-trans-1,2-Dichloroethene (4.217)+
-Methyl tert-butyl ether (4.396)
-Tertiary-butyl alcohol (4.596)
-Acetonitrile (4.789)
-Di-isopropyl ether (5.047)
-Chloroprene (5.182)+
-Acrylonitrile (5.318)
-Ethyl tertiary-butyl ethe (5.661)+
-cis-1,2-Dichloroethene (6.083)
-2,2-Dichloropropane (6.233)
-Bromochloromethane (6.362)+
-Chloroform (6.505)
-Carbon Tetrachloride (6.669)+
-1,1,1-Trichloroethane (6.769)
-1,1-Dichloropropene (6.948)+
-Propionitrile (7.284)+
-Isobutyl alcohol (7.427)+
-1,2-Dichloroethane (7.563)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.027)+
-1,4-Difluorobenzene (8.113)
-Dibromomethane (8.578)
-1,1-Dichloropropane (8.699)
-Bromodichloromethane (8.792)
-Methyl Methacrylate (9.014)+
-Total Alkylbenzenes (9.300)
-2-Chloroethylvinylether (9.500)
-cis-1,3-Dichloropropene (9.550)
-Toluene-D8 (9.764)
-4-methyl-2-pentanone (10.279)+
-Ethyl Methacrylate (10.500)+
-Dibromochloromethane (10.701)
-1,3-Dichloropropane (10.808)
-1,2-Dibromoethane (10.965)
-2-Hexanone (11.265)
-1,1,1,2-Tetrachloroethane (11.687)
Chlorobenzene-D5 (11.587)+
m+p-Xylenes (11.823)
-o-Xylene (12.359)
-Styrene (12.430)+
-Isopropylbenzene (12.766)
-Xylenes (total) (13.080)
-P-Bromofluorobenzene (13.138)
-cis-1,4-Dichloro-2-Butene (13.261)+
-n-Propylbenzene (13.324)
-1,1,2,2-Tetrachloroethane (13.431)
-2-Chlorotoluene (13.524)
-trans-1,4-Dichloro-2-Bute (13.667)
-4-Chlorotoluene (13.753)
-1,3,5-Trimethylbenzene (13.596)+
-tert-Butylbenzene (14.032)
-1,2,4-Trimethylbenzene (14.132)
-sec-Butylbenzene (14.282)
-P-Isopropyltoluene (14.496)
-1,3-Dichlorobenzene (14.566)
-1,4-Dichlorobenzene-D4 (14.696)+
-N-Butylbenzene (15.111)
-1,2-Dichlorobenzene (15.325)
-1,2-Dichloroethylene (tot (16.080)
-1,2-Dibromo-3-Chloroprope (16.555)
-1,3,5-Trichlorobenzene (16.605)
-Hexachlorobutadiene (17.606)+
-Naphthalene (18.156)
-1,2,3-Trichlorobenzene (18.456)

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1274A.D
Report Date: 30-Dec-2016 15:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C121916.b\C1274A.D
Lab Smp Id: WG197097-3
Inj Date : 19-DEC-2016 10:58 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197097-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C121916.b\C6A05(02).m
Meth Date : 20-Dec-2016 10:27 tjordan Quant Type: ISTD
Cal Date : 05-DEC-2016 16:00 Cal File: C1188.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.710	1.710	(0.230)	155816	20.0000	(a)	
2 Chloromethane	50	1.910	1.910	(0.257)	160199	20.0000	(a)	
3 Vinyl chloride	62	1.996	1.996	(0.268)	160647	20.0000	(a)	
4 Bromomethane	94	2.346	2.346	(0.316)	86122	20.0000	(a)	
5 Chloroethane	64	2.482	2.482	(0.334)	78612	20.0000	(a)	
6 Trichlorofluoromethane	101	2.632	2.632	(0.354)	210847	20.0000	(a)	
7 Diethyl Ether	59	2.996	2.997	(0.403)	93010	20.0000	(a)	
8 Tertiary-butyl alcohol	59	4.612	4.612	(0.620)	54408	100.000	(a)	
9 1,1-Dichloroethene	96	3.218	3.219	(0.433)	171658	20.0000	(a)	
10 Carbon Disulfide	76	3.247	3.247	(0.437)	424713	20.0000	(a)	
11 Freon-113	151	3.275	3.276	(0.441)	128682	20.0000	(a)	
12 Iodomethane	142	3.397	3.397	(0.457)	125212	20.0000	(a)	
13 Acrolein	56	3.661	3.662	(0.492)	71314	100.000	(a)	
14 Methylene Chloride	84	3.990	3.990	(0.537)	200321	20.0000	(a)	
15 Acetone	43	4.076	4.075	(0.548)	177797	100.000	(a)	
16 Isobutyl Alcohol	43	7.678	7.679	(1.033)	75128	400.000	(a)	
17 trans-1,2-Dichloroethene	96	4.219	4.219	(0.567)	172738	20.0000	(a)	
18 Allyl Chloride	41	3.840	3.840	(0.516)	188451	20.0000	(a)	
19 Methyl tert-butyl ether	73	4.405	4.405	(0.592)	719846	40.0000	(a)	
20 Acetonitrile	39	4.798	4.798	(0.645)	16806	200.000	(a)	
21 Di-isopropyl ether	45	5.048	5.048	(0.679)	455438	20.0000	(a)	
22 Chloroprene	53	5.177	5.177	(0.696)	243936	20.0000	(a)	
23 Propionitrile	54	7.342	7.343	(0.988)	116693	200.000	(a)	
24 Methacrylonitrile	41	7.364	7.364	(0.990)	580984	200.000	(a)	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1274A.D
Report Date: 30-Dec-2016 15:34

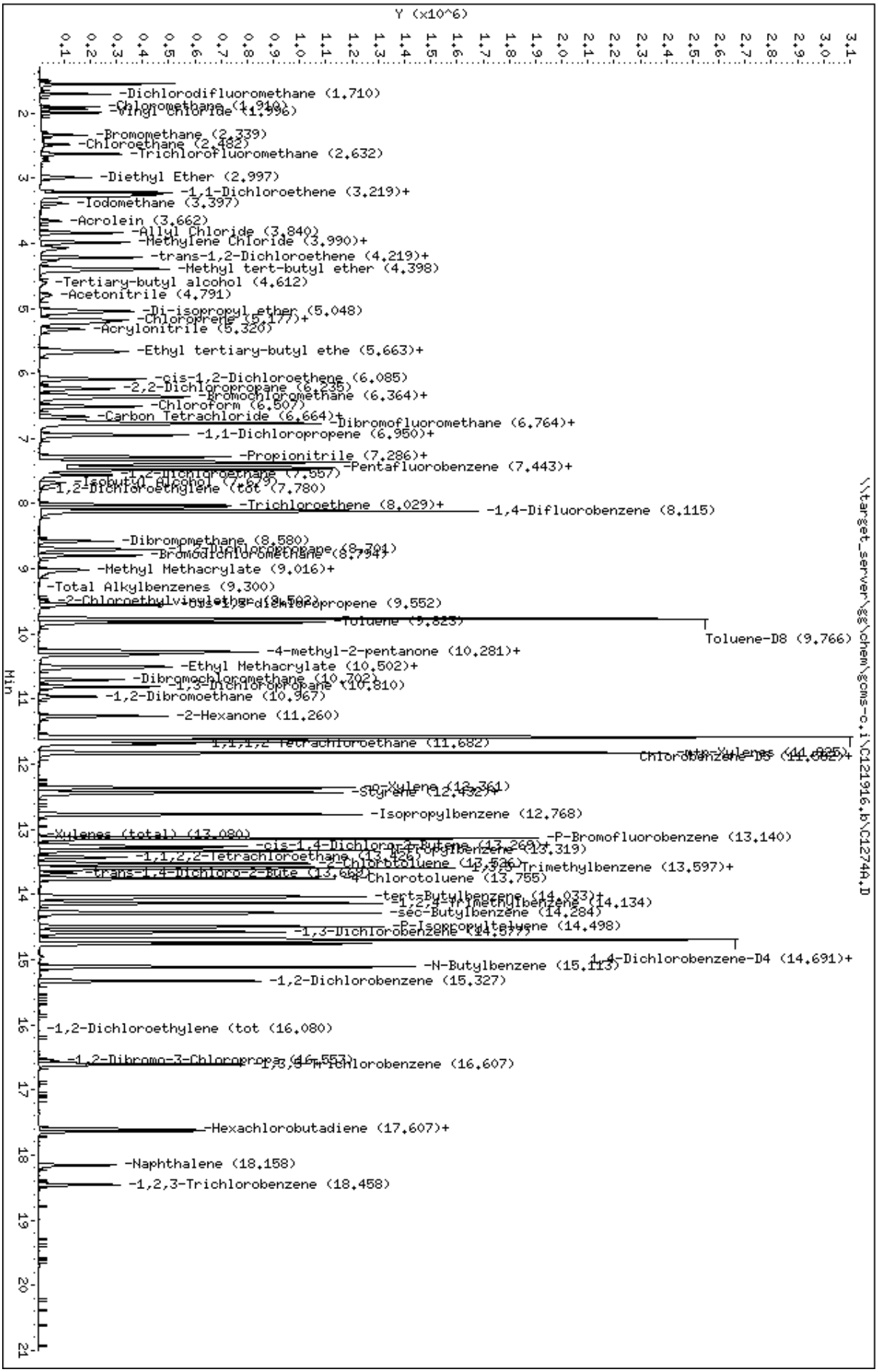
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.219	5.220	(0.702)	300345	20.0000	(a)	
	26	Acrylonitrile	52	5.320	5.320	(0.715)	141181	100.000	(a)	
	27	Ethyl tertiary-butyl ether	59	5.663	5.663	(0.762)	367658	20.0000	(a)	
	28	Vinyl Acetate	43	5.684	5.685	(0.701)	218783	20.0000	(a)	
	29	cis-1,2-Dichloroethene	96	6.084	6.085	(0.818)	210870	20.0000	(a)	
M	30	1,2-Dichloroethylene (total)	96				383608	20.0000	(a)	
	31	Methyl Methacrylate	41	9.015	9.016	(1.111)	82975	20.0000	(a)	
	32	2,2-Dichloropropane	77	6.234	6.235	(0.839)	253922	20.0000	(a)	
	33	Bromochloromethane	128	6.370	6.371	(0.857)	88624	20.0000	(a)	
	34	Chloroform	83	6.506	6.507	(0.875)	351795	20.0000	(a)	
	35	Carbon Tetrachloride	117	6.663	6.664	(0.821)	139617	20.0000	(a)	
	36	Tetrahydrofuran	42	6.721	6.721	(0.904)	107076	100.000	(a)	
$	37	Dibromofluoromethane	113	6.763	6.764	(0.910)	475219	50.0000	(a)	
	38	1,1,1-Trichloroethane	97	6.763	6.764	(0.910)	296906	20.0000	(a)	
	39	1,1-Dichloropropene	75	6.942	6.943	(0.856)	258492	20.0000	(a)	
	40	2-Butanone	43	6.956	6.957	(0.936)	197664	100.000	(a)	
	41	Benzene	78	7.285	7.286	(0.898)	696733	20.0000	(a)	
*	42	Pentafluorobenzene	168	7.435	7.436	(1.000)	721931	50.0000		
	43	Cyclohexane	56	6.349	6.349	(0.854)	251706	20.0000	(a)	
	44	Ethyl Methacrylate	69	10.523	10.524	(1.297)	160979	20.0000	(a)	
$	45	1,2-Dichloroethane-D4	65	7.471	7.472	(1.005)	497519	50.0000	(a)	
	46	Tertiary-amyl methyl ether	73	7.478	7.479	(1.006)	317057	20.0000	(a)	
	47	1,2-Dichloroethane	62	7.557	7.557	(0.931)	224082	20.0000	(a)	
	48	Trichloroethene	95	8.057	8.058	(0.993)	201836	20.0000	(a)	
*	49	1,4-Difluorobenzene	114	8.114	8.115	(1.000)	1329465	50.0000		
	50	Dibromomethane	93	8.579	8.580	(1.057)	100256	20.0000	(a)	
	51	1,2-Dichloropropane	63	8.701	8.701	(1.072)	159594	20.0000	(a)	
	52	Bromodichloromethane	83	8.793	8.794	(1.084)	256786	20.0000	(a)	
	53	cis-1,3-dichloropropene	75	9.551	9.552	(1.177)	282759	20.0000	(a)	
	54	1,4-Dioxane	88	9.051	9.051	(1.115)	47940	400.000	(a)	
$	55	Toluene-D8	98	9.766	9.766	(1.203)	1586114	50.0000	(a)	
	56	2-Chloroethylvinylether	63	9.508	9.509	(1.172)	16737	20.0000	(a)	
	57	Toluene	92	9.823	9.823	(1.211)	450067	20.0000	(a)	
	58	4-methyl-2-pentanone	43	10.287	10.288	(1.268)	405748	100.000	(a)	
	59	Tetrachloroethene	164	10.259	10.259	(0.886)	146304	20.0000	(a)	
	60	trans-1,3-Dichloropropene	75	10.316	10.316	(1.271)	224990	20.0000	(a)	
	61	1,1,2-Trichloroethane	83	10.502	10.502	(1.294)	125663	20.0000	(a)	
	62	Dibromochloromethane	129	10.702	10.702	(0.924)	169822	20.0000	(a)	
	63	1,3-Dichloropropane	76	10.809	10.810	(0.933)	270565	20.0000	(a)	
	64	1,2-Dibromoethane	107	10.966	10.967	(1.351)	153699	20.0000	(a)	
	65	2-Hexanone	43	11.260	11.260	(0.972)	298750	100.000	(a)	
*	66	Chlorobenzene-D5	117	11.581	11.582	(1.000)	1271606	50.0000		
	67	Chlorobenzene	112	11.603	11.603	(1.002)	508240	20.0000	(a)	
	152	1-Chlorohexane	91	11.588	11.589	(1.001)	287434	20.0000	(a)	
	68	Ethylbenzene	106	11.638	11.639	(1.005)	270814	20.0000	(a)	
	69	1,1,1,2-Tetrachloroethane	131	11.681	11.682	(1.009)	164646	20.0000	(a)	
M	70	Xylenes (total)	106				1011129	60.0000	(a)	
	71	m+p-Xylenes	106	11.824	11.825	(1.021)	675947	40.0000	(a)	
	72	o-Xylene	106	12.360	12.361	(1.067)	335182	20.0000	(a)	
	73	Styrene	104	12.432	12.432	(1.073)	556924	20.0000	(a)	
	74	Bromoform	173	12.460	12.461	(1.076)	99273	20.0000	(a)	
	75	Isopropylbenzene	105	12.768	12.768	(0.869)	893229	20.0000	(a)	
$	76	P-Bromofluorobenzene	95	13.132	13.133	(1.618)	750789	50.0000	(a)	
	77	cis-1,4-Dichloro-2-Butene	53	13.240	13.240	(0.901)	39674	20.0000	(a)	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1274A.D
Report Date: 30-Dec-2016 15:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.668	13.669	(0.930)	27633	20.0000	(a)	
79	Bromobenzene	156	13.268	13.269	(0.903)	223659	20.0000	(a)	
80	N-Propylbenzene	91	13.318	13.319	(0.907)	1103235	20.0000	(a)	
81	1,1,2,2-Tetrachloroethane	83	13.425	13.426	(0.914)	185112	20.0000	(a)	
82	1,3,5-Trimethylbenzene	105	13.597	13.597	(0.926)	784942	20.0000	(a)	
83	2-Chlorotoluene	91	13.525	13.526	(0.921)	673125	20.0000	(a)	
84	1,2,3-Trichloropropane	75	13.597	13.597	(0.926)	137419	20.0000	(a)	
85	4-Chlorotoluene	91	13.754	13.755	(0.936)	721092	20.0000	(a)	
86	tert-Butylbenzene	119	14.033	14.033	(0.955)	723662	20.0000	(a)	
87	Pentachloroethane	117	14.054	14.055	(0.957)	134794	20.0000	(a)	
88	1,2,4-Trimethylbenzene	105	14.133	14.134	(0.962)	777409	20.0000	(a)	
89	P-Isopropyltoluene	119	14.498	14.498	(0.987)	831143	20.0000	(a)	
90	1,3-Dichlorobenzene	146	14.576	14.577	(0.992)	424320	20.0000	(a)	
* 91	1,4-Dichlorobenzene-D4	152	14.691	14.691	(1.000)	711117	50.0000		
92	1,4-Dichlorobenzene	146	14.712	14.712	(1.001)	416844	20.0000	(a)	
93	N-Butylbenzene	91	15.112	15.113	(1.029)	864068	20.0000	(a)	
94	sec-Butylbenzene	105	14.283	14.284	(0.972)	1016920	20.0000	(a)	
95	1,2-Dichlorobenzene	146	15.327	15.327	(1.043)	380184	20.0000	(a)	
96	1,2-Dibromo-3-Chloropropane	75	16.556	16.556	(1.127)	22586	20.0000	(a)	
97	1,3,5-Trichlorobenzene	180	16.606	16.607	(1.130)	281603	20.0000	(a)	
98	Hexachlorobutadiene	225	17.607	17.607	(1.199)	117833	20.0000	(a)	
99	1,2,4-Trichlorobenzene	180	17.636	17.636	(1.200)	190512	20.0000	(a)	
100	1,2,3-Trimethylbenzene	105	14.755	14.755	(1.004)	777172	20.0000	(a)	
101	Naphthalene	128	18.157	18.158	(1.236)	243628	20.0000	(a)	
102	1,2,3-Trichlorobenzene	180	18.458	18.458	(1.256)	104456	20.0000	(a)	
103	Methyl Acetate	43	4.269	4.269	(0.574)	75333	20.0000	(a)	
104	Methylcyclohexane	83	8.021	8.022	(1.079)	336354	20.0000	(a)	
M 153	Total Alkylbenzenes	100				6994608	20.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1274A.D
Date : 19-DEC-2016 10:58
Client ID:
Sample Info: WG197097-3
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18
\\target_server\gg\chem\gcms-c.i\C121916.b\C1274A.D
-Dichlorodifluoromethane (1.710)
-Chloromethane (1.940)
-Vinyl Chloride (1.996)
-Bromomethane (2.339)
-Chloroethane (2.482)
-Trichlorofluoromethane (2.632)
-Diethyl Ether (2.997)
-1,1-Dichloroethene (3.219)+
-Iodomethane (3.397)
-Acrolein (3.662)
-Allyl Chloride (3.840)
-Methylene Chloride (3.990)+
-trans-1,2-Dichloroethene (4.219)+
-Methyl tert-butyl ether (4.398)
-Tertiary-butyl alcohol (4.612)
-Acetonitrile (4.791)
-Di-isopropyl ether (5.048)
-Chloroprene (5.177)+
-Acrylonitrile (5.320)
-Ethyl tertiary-butyl ethe (5.663)+
-cis-1,2-Dichloroethene (6.085)
-2,2-Dichloropropane (6.235)
-Bromochloromethane (6.364)+
-Chloroform (6.507)
-Carbon Tetrachloride (6.664)+
Dibromofluoromethane (6.764)+
-1,1-Dichloropropene (6.950)+
-Propionitrile (7.286)+
Pentafluorobenzene (7.443)+
-1,2-Dichloroethane (7.557)
-Isobutyl alcohol (7.679)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.029)+
-1,4-Difluorobenzene (8.115)
-Dibrompmethane (8.580)
-1,1,2-Trichloroethane (8.704)
-Bromodichloromethane (8.754)
-Methyl Methacrylate (9.016)+
-Total Alkylbenzenes (9.300)
-2-Chloroethylvinylether (9.502)
-cis-1,3-dichloropropene (9.552)
-Toluene (9.823)
Toluene-D8 (9.766)
-4-methyl-2-pentanone (10.281)+
-Ethyl Methacrylate (10.502)+
-Dibromochloromethane (10.702)
-1,3-Dichloropropane (10.810)
-1,2-Dibromoethane (10.967)
-2-Hexanone (11.260)
1,1,1,2-Tetrachloroethane (11.682)
Chlorobenzene-D5 (11.682)+
-m,p-Xylenes (11.825)+
-o-Xylene (12.361)
-Styrene (12.432)+
-Isopropylbenzene (12.768)
-Xylenes (total) (13.080)
-P-Bromofluorobenzene (13.140)
-cis-1,4-Dichloro-2-Butene (13.260)+
-n-Propylbenzene (13.319)
-1,1,2,2-Tetrachloroethane (13.426)
-2-Chlorotoluene (13.526)
1,3,5-Trimethylbenzene (13.597)+
-trans-1,4-Dichloro-2-Bute (13.662)
-4-Chlorotoluene (13.755)
-tert-Butylbenzene (14.033)+
-1,2,4-Trimethylbenzene (14.134)
-sec-Butylbenzene (14.284)
-p-Isopropyltoluene (14.498)
-1,3-Dichlorobenzene (14.577)
1,4-Dichlorobenzene-D4 (14.691)+
-N-Butylbenzene (15.113)
-1,2-Dichlorobenzene (15.327)
-1,2-Dichloroethylene (tot (16.080)
-1,2-Dibromo-3-Chloroprop (16.553)
1,2,4-Trichlorobenzene (16.607)
-Hexachlorobutadiene (17.607)+
-Naphthalene (18.158)
-1,2,3-Trichlorobenzene (18.458)

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1275A.D
Report Date: 30-Dec-2016 15:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C121916.b\C1275A.D
Lab Smp Id: WG197097-2
Inj Date : 19-DEC-2016 11:31 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197097-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C121916.b\C6A05(02).m
Meth Date : 20-Dec-2016 10:27 tjordan Quant Type: ISTD
Cal Date : 05-DEC-2016 16:00 Cal File: C1188.D
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.708	1.710	(0.230)	40035	5.00000	5.5	
2 Chloromethane	50	1.908	1.910	(0.256)	44627	5.00000	6.1	
3 Vinyl chloride	62	2.001	1.996	(0.269)	40437	5.00000	5.4	
4 Bromomethane	94	2.344	2.346	(0.315)	21433	5.00000	5.1	
5 Chloroethane	64	2.480	2.482	(0.333)	19958	5.00000	5.3	
6 Trichlorofluoromethane	101	2.630	2.632	(0.353)	53490	5.00000	5.4	
7 Diethyl Ether	59	2.994	2.997	(0.402)	21997	5.00000	5.0	
8 Tertiary-butyl alcohol	59	4.617	4.612	(0.621)	15868	25.0000	39.5	
9 1,1-Dichloroethene	96	3.216	3.219	(0.432)	45774	5.00000	5.8	
10 Carbon Disulfide	76	3.245	3.247	(0.436)	98742	5.00000	5.0	
11 Freon-113	151	3.273	3.276	(0.440)	31255	5.00000	5.2	
12 Iodomethane	142	3.395	3.397	(0.456)	27830	5.00000	4.7	
13 Acrolein	56	3.666	3.662	(0.493)	18094	25.0000	26.8	
14 Methylene Chloride	84	3.988	3.990	(0.536)	54129	5.00000	5.7	
15 Acetone	43	4.081	4.075	(0.548)	40685	25.0000	26.9	
16 Isobutyl Alcohol	43	7.683	7.679	(1.033)	21385	100.000	164	
17 trans-1,2-Dichloroethene	96	4.217	4.219	(0.567)	43360	5.00000	5.4	
18 Allyl Chloride	41	3.838	3.840	(0.516)	46362	5.00000	5.3	
19 Methyl tert-butyl ether	73	4.403	4.405	(0.592)	170609	10.0000	10	
20 Acetonitrile	39	4.810	4.798	(0.646)	5438	50.0000	48.0	
21 Di-isopropyl ether	45	5.053	5.048	(0.679)	108308	5.00000	5.0	
22 Chloroprene	53	5.175	5.177	(0.695)	56563	5.00000	5.0	
23 Propionitrile	54	7.348	7.343	(0.988)	26191	50.0000	49.3	
24 Methacrylonitrile	41	7.369	7.364	(0.990)	145929	50.0000	53.9	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1275A.D
Report Date: 30-Dec-2016 15:34

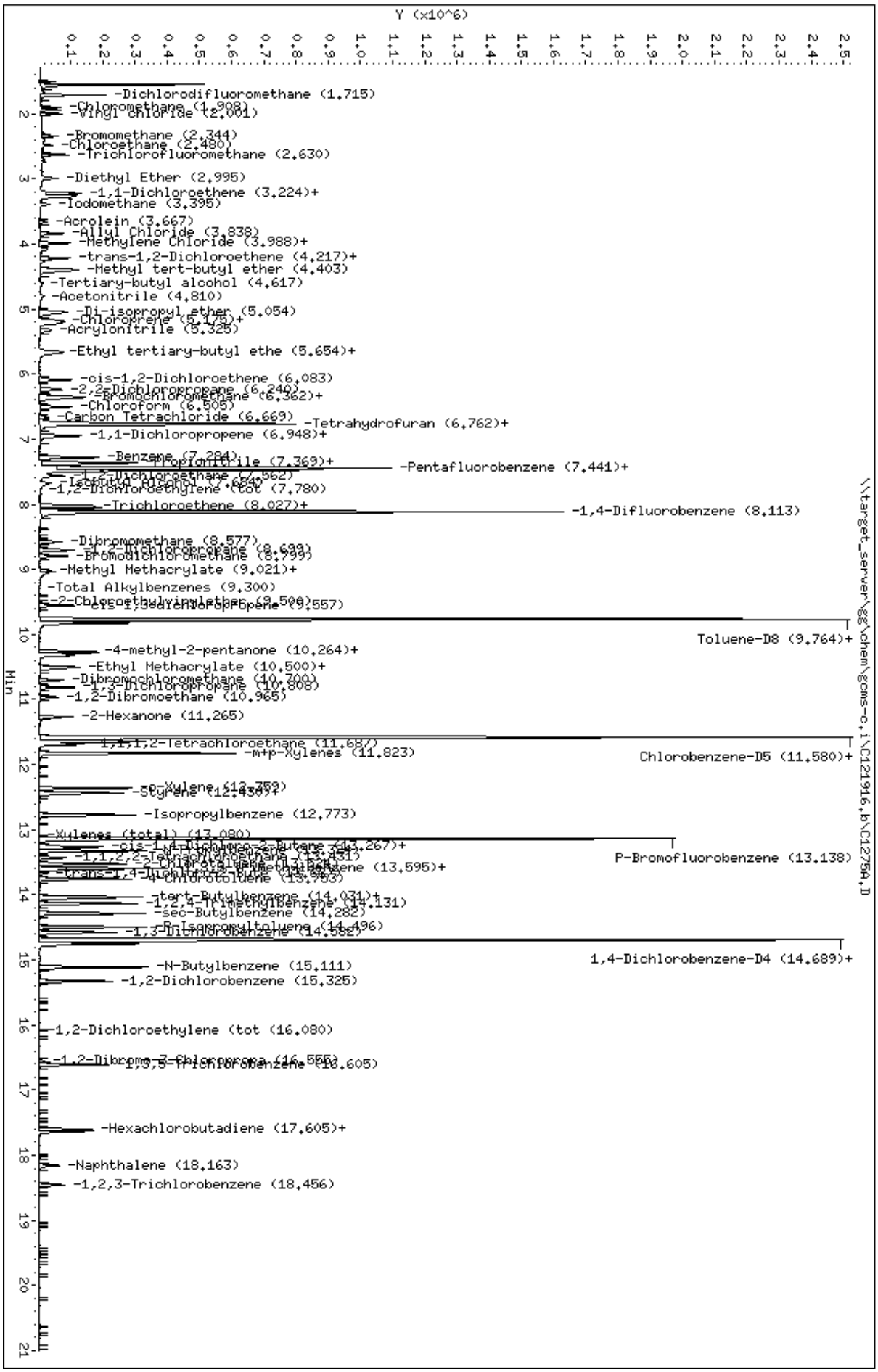
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.210	5.220	(0.700)	73844	5.00000	5.3	
	26	Acrylonitrile	52	5.325	5.320	(0.716)	34132	25.0000	25.9	
	27	Ethyl tertiary-butyl ether	59	5.653	5.663	(0.760)	84495	5.00000	4.8	
	28	Vinyl Acetate	43	5.682	5.685	(0.700)	46173	5.00000	4.4	
	29	cis-1,2-Dichloroethene	96	6.082	6.085	(0.817)	51733	5.00000	5.2	
M	30	1,2-Dichloroethylene (total)	96				95093	5.00000	(a)	
	31	Methyl Methacrylate	41	9.020	9.016	(1.112)	16640	5.00000	4.1	
	32	2,2-Dichloropropane	77	6.240	6.235	(0.839)	58843	5.00000	4.9	
	33	Bromochloromethane	128	6.383	6.371	(0.858)	20569	5.00000	5.0	
	34	Chloroform	83	6.504	6.507	(0.874)	86552	5.00000	5.2	
	35	Carbon Tetrachloride	117	6.668	6.664	(0.822)	18007	5.00000	2.5	
	36	Tetrahydrofuran	42	6.726	6.721	(0.904)	25633	25.0000	24.7	
$	37	Dibromofluoromethane	113	6.761	6.764	(0.909)	454782	50.0000	49.2	
	38	1,1,1-Trichloroethane	97	6.769	6.764	(0.910)	76252	5.00000	5.5	
	39	1,1-Dichloropropene	75	6.947	6.943	(0.856)	60242	5.00000	5.1	
	40	2-Butanone	43	6.962	6.957	(0.936)	43096	25.0000	23.9	
	41	Benzene	78	7.283	7.286	(0.898)	178034	5.00000	5.6	
*	42	Pentafluorobenzene	168	7.440	7.436	(1.000)	700266	50.0000		
	43	Cyclohexane	56	6.354	6.349	(0.854)	60291	5.00000	5.2	
	44	Ethyl Methacrylate	69	10.521	10.524	(1.297)	32864	5.00000	4.3	
$	45	1,2-Dichloroethane-D4	65	7.469	7.472	(1.004)	496388	50.0000	51.4	
	46	Tertiary-amyl methyl ether	73	7.476	7.479	(1.005)	72014	5.00000	4.7	
	47	1,2-Dichloroethane	62	7.562	7.557	(0.932)	55568	5.00000	5.4	
	48	Trichloroethene	95	8.055	8.058	(0.993)	56540	5.00000	6.1	
*	49	1,4-Difluorobenzene	114	8.112	8.115	(1.000)	1279385	50.0000		
	50	Dibromomethane	93	8.577	8.580	(1.057)	26123	5.00000	5.4	
	51	1,2-Dichloropropane	63	8.706	8.701	(1.073)	40307	5.00000	5.4	
	52	Bromodichloromethane	83	8.799	8.794	(1.085)	61237	5.00000	5.0	
	53	cis-1,3-dichloropropene	75	9.556	9.552	(1.178)	63171	5.00000	4.8	
	54	1,4-Dioxane	88	9.049	9.051	(1.115)	27164	100.000	411	
$	55	Toluene-D8	98	9.764	9.766	(1.204)	1564076	50.0000	50.9	
	56	2-Chloroethylvinylether	63	9.499	9.509	(1.171)	2551	5.00000	2.8	
	57	Toluene	92	9.828	9.823	(1.211)	115100	5.00000	5.6	
	58	4-methyl-2-pentanone	43	10.285	10.288	(1.268)	94462	25.0000	25.1	
	59	Tetrachloroethene	164	10.264	10.259	(0.886)	36996	5.00000	5.4	
	60	trans-1,3-Dichloropropene	75	10.321	10.316	(1.272)	50736	5.00000	4.7	
	61	1,1,2-Trichloroethane	83	10.500	10.502	(1.294)	30787	5.00000	5.2	
	62	Dibromochloromethane	129	10.700	10.702	(0.924)	39482	5.00000	4.6	
	63	1,3-Dichloropropane	76	10.807	10.810	(0.933)	68167	5.00000	5.3	
	64	1,2-Dibromoethane	107	10.964	10.967	(1.352)	37946	5.00000	5.3	
	65	2-Hexanone	43	11.265	11.260	(0.973)	63141	25.0000	22.6	
*	66	Chlorobenzene-D5	117	11.579	11.582	(1.000)	1261147	50.0000		
	67	Chlorobenzene	112	11.601	11.603	(1.002)	133002	5.00000	5.6	
	152	1-Chlorohexane	91	11.586	11.589	(1.001)	76599	5.00000	5.7	
	68	Ethylbenzene	106	11.643	11.639	(1.006)	67224	5.00000	5.2	
	69	1,1,1,2-Tetrachloroethane	131	11.686	11.682	(1.009)	37986	5.00000	4.7	
M	70	Xylenes (total)	106				245074	15.0000	(a)	
	71	m+p-Xylenes	106	11.822	11.825	(1.021)	163921	10.0000	10.4	
	72	o-Xylene	106	12.358	12.361	(1.067)	81153	5.00000	5.1	
	73	Styrene	104	12.430	12.432	(1.073)	133662	5.00000	5.0	
	74	Bromoform	173	12.458	12.461	(1.076)	22140	5.00000	4.6	
	75	Isopropylbenzene	105	12.773	12.768	(0.870)	224601	5.00000	5.5	
$	76	P-Bromofluorobenzene	95	13.137	13.133	(1.619)	743842	50.0000	51.1	
	77	cis-1,4-Dichloro-2-Butene	53	13.237	13.240	(0.901)	8333	5.00000	4.2	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1275A.D
Report Date: 30-Dec-2016 15:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.666	13.669	(0.930)	5742	5.00000	4.0	
79	Bromobenzene	156	13.266	13.269	(0.903)	56459	5.00000	5.4	
80	N-Propylbenzene	91	13.323	13.319	(0.907)	277935	5.00000	5.5	
81	1,1,2,2-Tetrachloroethane	83	13.430	13.426	(0.914)	49133	5.00000	5.6	
82	1,3,5-Trimethylbenzene	105	13.595	13.597	(0.926)	192834	5.00000	5.3	
83	2-Chlorotoluene	91	13.523	13.526	(0.921)	169419	5.00000	5.4	
84	1,2,3-Trichloropropane	75	13.595	13.597	(0.926)	35971	5.00000	5.5	
85	4-Chlorotoluene	91	13.752	13.755	(0.936)	181444	5.00000	5.4	
86	tert-Butylbenzene	119	14.031	14.033	(0.955)	171815	5.00000	5.1	
87	Pentachloroethane	117	14.052	14.055	(0.957)	28849	5.00000	4.4	
88	1,2,4-Trimethylbenzene	105	14.131	14.134	(0.962)	189099	5.00000	5.3	
89	P-Isopropyltoluene	119	14.496	14.498	(0.987)	204192	5.00000	5.4	
90	1,3-Dichlorobenzene	146	14.581	14.577	(0.993)	106518	5.00000	5.4	
* 91	1,4-Dichlorobenzene-D4	152	14.689	14.691	(1.000)	693848	50.0000		
92	1,4-Dichlorobenzene	146	14.710	14.712	(1.001)	106774	5.00000	5.5	
93	N-Butylbenzene	91	15.110	15.113	(1.029)	210992	5.00000	5.4	
94	sec-Butylbenzene	105	14.281	14.284	(0.972)	255710	5.00000	5.5	
95	1,2-Dichlorobenzene	146	15.325	15.327	(1.043)	94453	5.00000	5.3	
96	1,2-Dibromo-3-Chloropropane	75	16.554	16.556	(1.127)	5038	5.00000	4.5	
97	1,3,5-Trichlorobenzene	180	16.604	16.607	(1.130)	69540	5.00000	5.3	
98	Hexachlorobutadiene	225	17.605	17.607	(1.199)	32599	5.00000	6.1	
99	1,2,4-Trichlorobenzene	180	17.634	17.636	(1.200)	45418	5.00000	5.1	
100	1,2,3-Trimethylbenzene	105	14.753	14.755	(1.004)	188524	5.00000	5.2	
101	Naphthalene	128	18.162	18.158	(1.236)	53572	5.00000	4.4	
102	1,2,3-Trichlorobenzene	180	18.463	18.458	(1.257)	26454	5.00000	5.6	
103	Methyl Acetate	43	4.274	4.269	(0.574)	18807	5.00000	5.2	
104	Methylcyclohexane	83	8.027	8.022	(1.079)	78914	5.00000	5.0	
M 153	Total Alkylbenzenes	100				1727178	5.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^6)
Min
-Dichlorodifluoromethane (1.715)
-Chloromethane (1.908)
-Vinyl chloride (2.001)
-Bromomethane (2.344)
-Chloroethane (2.480)
-Trichlorofluoromethane (2.630)
-Diethyl Ether (2.995)
-1,1-Dichloroethene (3.224)+
-Iodomethane (3.395)
-Acrolein (3.667)
-Allyl Chloride (3.838)
-Methylene Chloride (3.988)+
-trans-1,2-Dichloroethene (4.217)+
-Methyl tert-butyl ether (4.403)
-Tertiary-butyl alcohol (4.617)
-Acetonitrile (4.810)
-Di-isopropyl ether (5.054)
-Chloroprene (5.175)+
-Acrylonitrile (5.325)
-Ethyl tertiary-butyl ethe (5.654)+
-cis-1,2-Dichloroethene (6.083)
-2,2-Dichloropropane (6.240)
-Bromochloromethane (6.362)+
-Chloroform (6.505)
-Carbon Tetrachloride (6.669)
-Tetrahydrofuran (6.762)+
-1,1-Dichloropropene (6.948)+
-Benzene (7.284)
-Pentafluorobenzene (7.441)+
-1,2-Dichloroethane (7.562)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.027)+
-1,4-Difluorobenzene (8.113)
-Dibromomethane (8.577)
-1,2-Dichloropropane (8.699)
-Bromodichloromethane (8.799)
-Methyl Methacrylate (9.021)+
-Total Alkylbenzenes (9.300)
-2-Chloroethylvinylether (9.500)
-cis-1,3-Dichloropropene (9.557)
Toluene-D8 (9.764)+
-4-methyl-2-pentanone (10.264)+
-Ethyl Methacrylate (10.500)+
-Dibromochloromethane (10.700)
-1,3-Trichloropropane (10.808)
-1,2-Dibromoethane (10.965)
-2-Hexanone (11.265)
-1,1,1,2-Tetrachloroethane (11.687)
-m+p-Xylenes (11.823)
Chlorobenzene-D5 (11.580)+
-o-Xylene (12.359)
-Styrene (12.436)+
-Isopropylbenzene (12.773)
-Xylenes (total) (13.080)
-cis-1,4-Dichloro-2-Butene (13.267)+
-1,1,2,2-Tetrachloroethane (13.431)
-2-Chlorotoluene (13.595)+
P-Bromofluorobenzene (13.138)
-trans-1,4-Dichloro-2-Butene (13.753)
-4-Chlorotoluene (13.753)
-tert-Butylbenzene (14.031)+
-1,2,4-Trimethylbenzene (14.131)
-sec-Butylbenzene (14.282)
-P-Isopropyltoluene (14.496)
-1,3-Dichlorobenzene (14.582)
1,4-Dichlorobenzene-D4 (14.689)+
-N-Butylbenzene (15.111)
-1,2-Dichlorobenzene (15.325)
-1,2-Dichloroethylene (tot (16.080)
-1,2-Dibromo-3-Chloropropa (16.556)
-1,3,5-Trichlorobenzene (16.605)
-Hexachlorobutadiene (17.605)+
-Naphthalene (18.163)
-1,2,3-Trichlorobenzene (18.456)
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Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1275A.D
Date : 19-DEC-2016 11:31
Client ID:
Sample Info: WG197097-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276A.D
Report Date: 30-Dec-2016 15:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C121916.b\C1276A.D
Lab Smp Id: WG197097-1
Inj Date : 19-DEC-2016 12:05 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197097-1
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C121916.b\C6A05(02).m
Meth Date : 20-Dec-2016 10:27 tjordan Quant Type: ISTD
Cal Date : 05-DEC-2016 16:00 Cal File: C1188.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.711	1.710	(0.230)	7609	1.00000	1.0	
2 Chloromethane	50	1.911	1.910	(0.257)	9397	1.00000	1.2	
3 Vinyl chloride	62	2.004	1.996	(0.269)	7942	1.00000	1.0	
4 Bromomethane	94	2.340	2.346	(0.314)	6445	1.00000	1.5	
5 Chloroethane	64	2.483	2.482	(0.334)	3865	1.00000	1.0	
6 Trichlorofluoromethane	101	2.633	2.632	(0.354)	11652	1.00000	1.2	
7 Diethyl Ether	59	2.990	2.997	(0.402)	4610	1.00000	1.0	
8 Tertiary-butyl alcohol	59	4.613	4.612	(0.620)	4212	5.00000	8.9(M)	M9
9 1,1-Dichloroethene	96	3.219	3.219	(0.432)	10061	1.00000	1.2	
10 Carbon Disulfide	76	3.247	3.247	(0.436)	24268	1.00000	1.2	
11 Freon-113	151	3.269	3.276	(0.439)	7209	1.00000	1.2	
12 Iodomethane	142	3.390	3.397	(0.456)	7189	1.00000	1.2	
13 Acrolein	56	3.662	3.662	(0.492)	3766	5.00000	5.5	
14 Methylene Chloride	84	3.991	3.990	(0.536)	13657	1.00000	1.4(a)	
15 Acetone	43	4.091	4.075	(0.550)	7780	5.00000	5.1	
16 Isobutyl Alcohol	43	7.686	7.679	(1.033)	5396	20.0000	34.5(M)	M9
17 trans-1,2-Dichloroethene	96	4.220	4.219	(0.567)	9415	1.00000	1.2	
18 Allyl Chloride	41	3.841	3.840	(0.516)	8802	1.00000	0.99(a)	
19 Methyl tert-butyl ether	73	4.405	4.405	(0.592)	33647	2.00000	2.0	
20 Acetonitrile	39	4.791	4.798	(0.644)	700	10.0000	5.8(a)	
21 Di-isopropyl ether	45	5.049	5.048	(0.678)	20051	1.00000	0.93(a)	
22 Chloroprene	53	5.192	5.177	(0.698)	10737	1.00000	0.95(a)	
23 Propionitrile	54	7.365	7.343	(0.989)	4354	10.0000	8.3(a)	
24 Methacrylonitrile	41	7.372	7.364	(0.990)	26651	10.0000	9.7(a)	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276A.D
Report Date: 30-Dec-2016 15:35

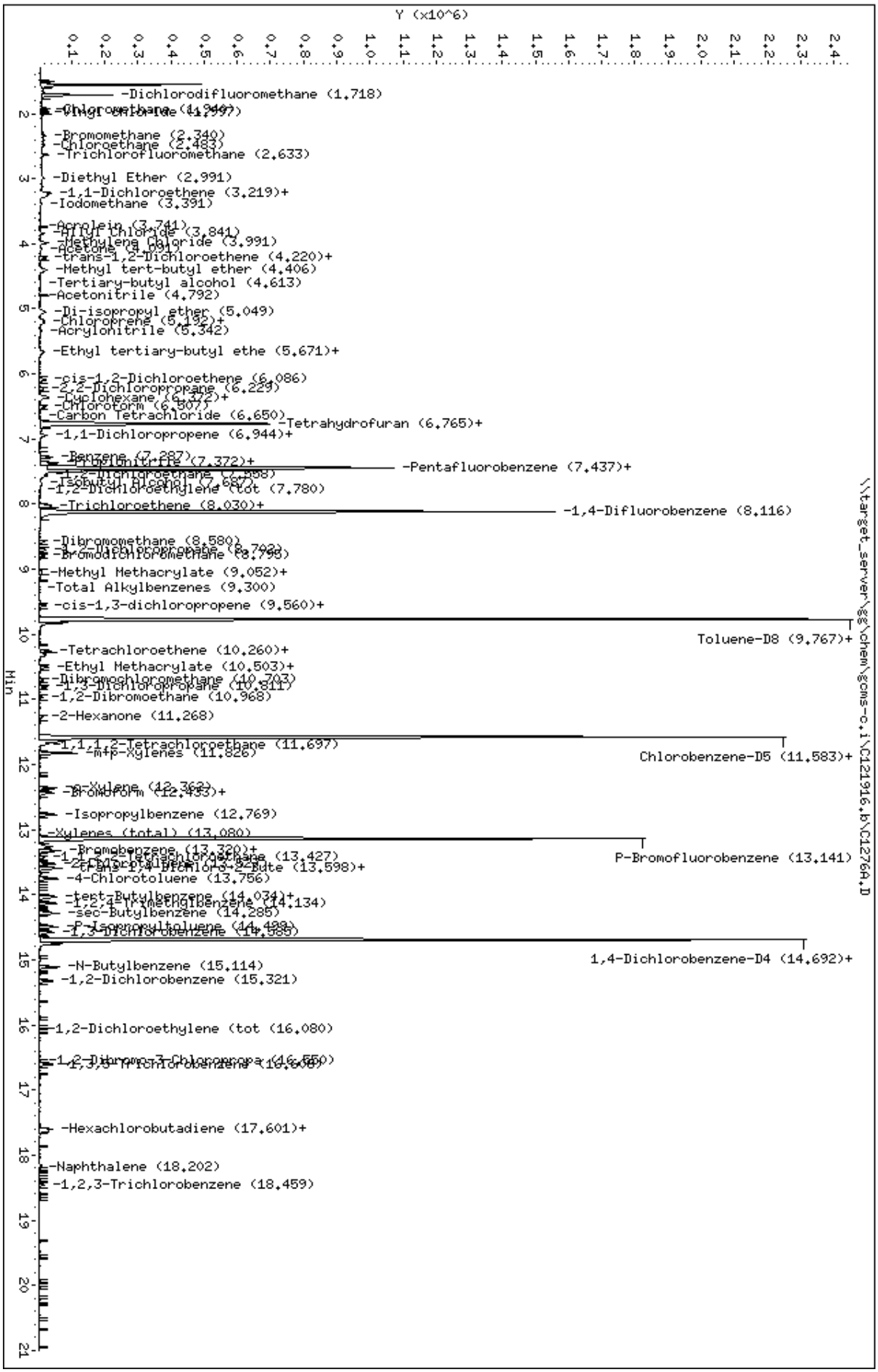
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.220	5.220	(0.701)	15481	1.00000	1.1	
	26	Acrylonitrile	52	5.342	5.320	(0.718)	6808	5.00000	5.2(M)	M6
	27	Ethyl tertiary-butyl ether	59	5.671	5.663	(0.762)	14825	1.00000	0.86(a)	
	28	Vinyl Acetate	43	5.699	5.685	(0.702)	6164	1.00000	0.63(a)	
	29	cis-1,2-Dichloroethene	96	6.085	6.085	(0.818)	11399	1.00000	1.1	
M	30	1,2-Dichloroethylene (total)	96				20814	1.00000	(a)	
	31	Methyl Methacrylate	41	9.030	9.016	(1.113)	3158	1.00000	0.85(a)	
	32	2,2-Dichloropropane	77	6.235	6.235	(0.838)	11758	1.00000	1.0	
	33	Bromochloromethane	128	6.371	6.371	(0.856)	3925	1.00000	0.96(aM)	M9
	34	Chloroform	83	6.507	6.507	(0.874)	17871	1.00000	1.1	
	35	Carbon Tetrachloride	117	6.650	6.664	(0.819)	715	1.00000	0.12(aM)	M9
	36	Tetrahydrofuran	42	6.736	6.721	(0.905)	5153	5.00000	5.0	
$	37	Dibromofluoromethane	113	6.764	6.764	(0.909)	457629	50.0000	50.3	
	38	1,1,1-Trichloroethane	97	6.771	6.764	(0.910)	14322	1.00000	1.0	
	39	1,1-Dichloropropene	75	6.943	6.943	(0.856)	12422	1.00000	1.1	
	40	2-Butanone	43	6.964	6.957	(0.936)	6652	5.00000	3.8(a)	
	41	Benzene	78	7.286	7.286	(0.898)	35265	1.00000	1.1	
*	42	Pentafluorobenzene	168	7.443	7.436	(1.000)	693503	50.0000		
	43	Cyclohexane	56	6.357	6.349	(0.854)	12144	1.00000	1.0	
	44	Ethyl Methacrylate	69	10.524	10.524	(1.297)	5665	1.00000	0.79(a)	
$	45	1,2-Dichloroethane-D4	65	7.472	7.472	(1.004)	488715	50.0000	50.6	
	46	Tertiary-amyl methyl ether	73	7.486	7.479	(1.006)	13064	1.00000	0.87(a)	
	47	1,2-Dichloroethane	62	7.558	7.557	(0.931)	11911	1.00000	1.1	
	48	Trichloroethene	95	8.051	8.058	(0.992)	11445	1.00000	1.2	
*	49	1,4-Difluorobenzene	114	8.115	8.115	(1.000)	1250950	50.0000		
	50	Dibromomethane	93	8.580	8.580	(1.057)	5781	1.00000	1.2	
	51	1,2-Dichloropropane	63	8.701	8.701	(1.072)	7210	1.00000	0.96(a)	
	52	Bromodichloromethane	83	8.794	8.794	(1.084)	10819	1.00000	0.91(a)	
	53	cis-1,3-dichloropropene	75	9.559	9.552	(1.178)	10672	1.00000	0.84(a)	
	54	1,4-Dioxane	88	9.052	9.051	(1.115)	4577	20.0000	34.8	
$	55	Toluene-D8	98	9.766	9.766	(1.203)	1529332	50.0000	50.6	
	56	2-Chloroethylvinylether	63	9.523	9.509	(1.174)	513	1.00000	0.67(TaM)	M6
	57	Toluene	92	9.824	9.823	(1.210)	24184	1.00000	1.2	
	58	4-methyl-2-pentanone	43	10.288	10.288	(1.268)	15587	5.00000	4.2(aM)	M6
	59	Tetrachloroethene	164	10.260	10.259	(0.886)	6735	1.00000	1.00	
	60	trans-1,3-Dichloropropene	75	10.317	10.316	(1.271)	9462	1.00000	0.92(a)	
	61	1,1,2-Trichloroethane	83	10.503	10.502	(1.294)	5933	1.00000	1.0	
	62	Dibromochloromethane	129	10.696	10.702	(0.923)	6475	1.00000	0.81(a)	
	63	1,3-Dichloropropane	76	10.810	10.810	(0.933)	12730	1.00000	1.0	
	64	1,2-Dibromoethane	107	10.967	10.967	(1.351)	7893	1.00000	1.1(M)	M6
	65	2-Hexanone	43	11.268	11.260	(0.973)	8857	5.00000	3.4(a)	
*	66	Chlorobenzene-D5	117	11.582	11.582	(1.000)	1217429	50.0000		
	67	Chlorobenzene	112	11.604	11.603	(1.002)	26278	1.00000	1.1	
	152	1-Chlorohexane	91	11.589	11.589	(1.001)	15975	1.00000	1.1	
	68	Ethylbenzene	106	11.646	11.639	(1.006)	13265	1.00000	1.0	
	69	1,1,1,2-Tetrachloroethane	131	11.696	11.682	(1.010)	6569	1.00000	0.86(a)	
M	70	Xylenes (total)	106				44278	5.00000	(a)	
	71	m+p-Xylenes	106	11.825	11.825	(1.021)	31455	2.00000	2.0	
	72	o-Xylene	106	12.361	12.361	(1.067)	12823	1.00000	0.83(a)	
	73	Styrene	104	12.433	12.432	(1.073)	21990	1.00000	0.86(aM)	M6
	74	Bromoform	173	12.461	12.461	(1.076)	4210	1.00000	0.93(a)	
	75	Isopropylbenzene	105	12.769	12.768	(0.869)	37620	1.00000	0.93(a)	
$	76	P-Bromofluorobenzene	95	13.133	13.133	(1.618)	713970	50.0000	49.8	
	77	cis-1,4-Dichloro-2-Butene	53	13.255	13.240	(0.902)	1230	1.00000	0.68(aM)	M9

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276A.D
Report Date: 30-Dec-2016 15:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.669	13.669	(0.930)	821	1.00000	0.65(a)	
79	Bromobenzene	156	13.269	13.269	(0.903)	11299	1.00000	1.1	
80	N-Propylbenzene	91	13.319	13.319	(0.907)	51778	1.00000	1.0	
81	1,1,2,2-Tetrachloroethane	83	13.433	13.426	(0.914)	9727	1.00000	1.1	
82	1,3,5-Trimethylbenzene	105	13.598	13.597	(0.926)	33068	1.00000	0.93(a)	
83	2-Chlorotoluene	91	13.526	13.526	(0.921)	30804	1.00000	1.0	
84	1,2,3-Trichloropropane	75	13.605	13.597	(0.926)	7548	1.00000	1.2(M)	M6
85	4-Chlorotoluene	91	13.755	13.755	(0.936)	35307	1.00000	1.1	
86	tert-Butylbenzene	119	14.034	14.033	(0.955)	29814	1.00000	0.92(a)	
87	Pentachloroethane	117	14.048	14.055	(0.956)	4320	1.00000	0.72(aM)	M6
88	1,2,4-Trimethylbenzene	105	14.134	14.134	(0.962)	34241	1.00000	0.98(a)	
89	P-Isopropyltoluene	119	14.498	14.498	(0.987)	34273	1.00000	0.92(a)	
90	1,3-Dichlorobenzene	146	14.577	14.577	(0.992)	20781	1.00000	1.1	
* 91	1,4-Dichlorobenzene-D4	152	14.691	14.691	(1.000)	663631	50.0000		
92	1,4-Dichlorobenzene	146	14.713	14.712	(1.001)	23120	1.00000	1.2	
93	N-Butylbenzene	91	15.113	15.113	(1.029)	36474	1.00000	0.95(a)	
94	sec-Butylbenzene	105	14.284	14.284	(0.972)	45459	1.00000	0.99(a)	
95	1,2-Dichlorobenzene	146	15.328	15.327	(1.043)	17863	1.00000	1.0	
96	1,2-Dibromo-3-Chloropropane	75	16.557	16.556	(1.127)	1370	1.00000	1.3	
97	1,3,5-Trichlorobenzene	180	16.607	16.607	(1.130)	12704	1.00000	0.99(a)	
98	Hexachlorobutadiene	225	17.601	17.607	(1.198)	7856	1.00000	1.4	
99	1,2,4-Trichlorobenzene	180	17.629	17.636	(1.200)	8889	1.00000	1.0	
100	1,2,3-Trimethylbenzene	105	14.756	14.755	(1.004)	39713	1.00000	1.1	
101	Naphthalene	128	18.165	18.158	(1.236)	8259	1.00000	0.64(a)	
102	1,2,3-Trichlorobenzene	180	18.458	18.458	(1.256)	6105	1.00000	1.3	
103	Methyl Acetate	43	4.277	4.269	(0.575)	3511	1.00000	0.97(a)	
104	Methylcyclohexane	83	8.022	8.022	(1.078)	15963	1.00000	1.0	
M 153	Total Alkylbenzenes	100				302727	1.00000	(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276A.D
Date : 19-DEC-2016 12:05
Client ID:
Sample Info: WG197097-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18
\\target_server\gg\chem\gcms-c.i\C121916.b\C1276A.D
-Dichlorodifluoromethane (1.718)
-Chloromethane (1.940)
-Vinyl Chloride (1.997)
-Bromomethane (2.340)
-Chloroethane (2.483)
-Trichlorofluoromethane (2.633)
-Diethyl Ether (2.991)
-1,1-Dichloroethene (3.219)+
-Iodomethane (3.391)
-Acrolein (3.741)
-Allyl Chloride (3.841)
-Methylene Chloride (3.991)
-Acetone (4.091)
-trans-1,2-Dichloroethene (4.220)+
-Methyl tert-butyl ether (4.406)
-Tertiary-butyl alcohol (4.613)
-Acetonitrile (4.792)
-Di-isopropyl ether (5.049)
-Chloroprene (5.192)+
-Acrylonitrile (5.342)
-Ethyl tertiary-butyl ethe (5.671)+
-cis-1,2-Dichloroethene (6.086)
-2,2-Dichloropropane (6.229)
-Cyclohexane (6.372)+
-Chloroform (6.507)
-Carbon Tetrachloride (6.650)
-Tetrahydrofuran (6.765)+
-1,1-Dichloropropene (6.944)+
-Benzene (7.287)
-Propionitrile (7.372)+
-Pentafluorobenzene (7.437)+
-1,2-Dichloroethane (7.508)
-Isobutyl Alcohol (7.667)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.030)+
-1,4-Difluorobenzene (8.116)
-Dibromomethane (8.580)
-1,2-Dichloropropane (8.702)
-Bromodichloromethane (8.795)
-Methyl Methacrylate (9.052)+
-Total Alkylbenzenes (9.300)
-cis-1,3-dichloropropene (9.560)+
Toluene-D8 (9.767)+
-Tetrachloroethene (10.260)+
-Ethyl Methacrylate (10.503)+
-Dibromochloromethane (10.703)
-1,3-Dichloropropane (10.811)
-1,2-Dibromoethane (10.968)
-2-Hexanone (11.268)
-1,1,1,2-Tetrachloroethane (11.697)
-m+p-Xylenes (11.826)
Chlorobenzene-D5 (11.583)+
-o-Xylene (12.362)
-Bromoform (12.453)+
-Isopropylbenzene (12.769)
-Xylenes (total) (13.080)
-Bromobenzene (13.320)+
-1,1,2,2-Tetrachloroethane (13.427)
P-Bromofluorobenzene (13.141)
-trans-1,4-Dichloro-2-Bute (13.598)+
-4-Chlorotoluene (13.756)
-tert-Butylbenzene (14.034)+
-1,2,4-Trimethylbenzene (14.134)
-sec-Butylbenzene (14.285)
-P-Isopropyltoluene (14.488)
-1,3-Dichlorobenzene (14.585)
1,4-Dichlorobenzene-D4 (14.692)+
-N-Butylbenzene (15.114)
-1,2-Dichlorobenzene (15.321)
-1,2-Dichloroethylene (tot (16.080)
-1,2-Dibromo-3-Chloropropa (16.550)
-1,2,3-Trichlorobenzene (16.608)
-Hexachlorobutadiene (17.601)+
-Naphthalene (18.202)
-1,2,3-Trichlorobenzene (18.459)

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Report Date: 30-Dec-2016 15:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C121916.b\C1277A.D
Lab Smp Id: WG197097-6
Inj Date : 19-DEC-2016 12:38 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197097-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C121916.b\C6A05(02).m
Meth Date : 20-Dec-2016 10:27 tjordan Quant Type: ISTD
Cal Date : 05-DEC-2016 16:00 Cal File: C1188.D
Als bottle: 5 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.709	1.710	(0.230)	1293143	200.000	164	
2	Chloromethane	50	1.909	1.910	(0.257)	1503610	200.000	174	
3	Vinyl chloride	62	2.002	1.996	(0.269)	1308272	200.000	162	
4	Bromomethane	94	2.345	2.346	(0.315)	833370	200.000	167	
5	Chloroethane	64	2.481	2.482	(0.333)	665247	200.000	165	
6	Trichlorofluoromethane	101	2.638	2.632	(0.355)	1982549	200.000	179	
7	Diethyl Ether	59	2.996	2.997	(0.403)	877975	200.000	188	
8	Tertiary-butyl alcohol	59	4.604	4.612	(0.619)	253173	1000.00	424	
9	1,1-Dichloroethene	96	3.225	3.219	(0.433)	1549252	200.000	170	
10	Carbon Disulfide	76	3.253	3.247	(0.437)	3759682	200.000	172	
11	Freon-113	151	3.275	3.276	(0.440)	1143304	200.000	172	
12	Iodomethane	142	3.396	3.397	(0.456)	1074622	200.000	167	
13	Acrolein	56	3.661	3.662	(0.492)	770283	1000.00	1040(A)	
14	Methylene Chloride	84	3.989	3.990	(0.536)	1829423	200.000	161	
15	Acetone	43	4.075	4.075	(0.548)	1160645	1000.00	715	
16	Isobutyl Alcohol	43	7.678	7.679	(1.032)	281013	4000.00	1440	
17	trans-1,2-Dichloroethene	96	4.218	4.219	(0.567)	1532061	200.000	172	
18	Allyl Chloride	41	3.839	3.840	(0.516)	1242218	200.000	133	
19	Methyl tert-butyl ether	73	4.397	4.405	(0.591)	6302479	400.000	354	
20	Acetonitrile	39	4.797	4.798	(0.645)	160469	2000.00	8620(A)	
21	Di-isopropyl ether	45	5.047	5.048	(0.678)	4163770	200.000	187	
22	Chloroprene	53	5.183	5.177	(0.696)	2175930	200.000	185	
23	Propionitrile	54	7.356	7.343	(0.988)	1019758	2000.00	1930	
24	Methacrylonitrile	41	7.385	7.364	(0.992)	4612656	2000.00	1600	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1277A.D
Report Date: 30-Dec-2016 15:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	5.219	5.220	(0.701)	2644435	200.000	173	
	26 Acrylonitrile	52	5.326	5.320	(0.716)	1454017	1000.00	1040(A)	
	27 Ethyl tertiary-butyl ether	59	5.655	5.663	(0.760)	3585105	200.000	204(A)	
	28 Vinyl Acetate	43	5.683	5.685	(0.700)	2248046	200.000	236(A)	
	29 cis-1,2-Dichloroethene	96	6.084	6.085	(0.818)	1947697	200.000	179	
M	30 1,2-Dichloroethylene (total)	96				3479758	200.000	(a)	
	31 Methyl Methacrylate	41	9.014	9.016	(1.111)	915275	200.000	239(A)	
	32 2,2-Dichloropropane	77	6.234	6.235	(0.838)	2385616	200.000	193	
	33 Bromochloromethane	128	6.377	6.371	(0.857)	730830	200.000	171	
	34 Chloroform	83	6.505	6.507	(0.874)	3083983	200.000	173	
	35 Carbon Tetrachloride	117	6.663	6.664	(0.821)	1839725	200.000	378(A)	
	36 Tetrahydrofuran	42	6.713	6.721	(0.902)	1133361	1000.00	1050(A)	
$	37 Dibromofluoromethane	113	6.763	6.764	(0.909)	465413	50.0000	48.4	
	38 1,1,1-Trichloroethane	97	6.770	6.764	(0.910)	2718557	200.000	181	
	39 1,1-Dichloropropene	75	6.949	6.943	(0.856)	2285288	200.000	180	
	40 2-Butanone	43	6.956	6.957	(0.935)	1664293	1000.00	956	
	41 Benzene	78	7.285	7.286	(0.898)	5567704	200.000	157	
*	42 Pentafluorobenzene	168	7.442	7.436	(1.000)	730753	50.0000		
	43 Cyclohexane	56	6.355	6.349	(0.854)	2220633	200.000	180	
	44 Ethyl Methacrylate	69	10.523	10.524	(1.297)	1667705	200.000	229(A)	
$	45 1,2-Dichloroethane-D4	65	7.478	7.472	(1.005)	493964	50.0000	48.4	
	46 Tertiary-amyl methyl ether	73	7.478	7.479	(1.005)	3257448	200.000	214(A)	
	47 1,2-Dichloroethane	62	7.563	7.557	(0.932)	2052862	200.000	178	
	48 Trichloroethene	95	8.057	8.058	(0.993)	1715007	200.000	158	
*	49 1,4-Difluorobenzene	114	8.114	8.115	(1.000)	1342270	50.0000		
	50 Dibromomethane	93	8.578	8.580	(1.057)	1026196	200.000	188	
	51 1,2-Dichloropropane	63	8.700	8.701	(1.072)	1456232	200.000	183	
	52 Bromodichloromethane	83	8.793	8.794	(1.084)	2427815	200.000	194	
	53 cis-1,3-dichloropropene	75	9.550	9.552	(1.177)	2591246	200.000	198	
	54 1,4-Dioxane	88	9.050	9.051	(1.115)	35225	4000.00	210	
$	55 Toluene-D8	98	9.765	9.766	(1.203)	1630169	50.0000	50.1	
	56 2-Chloroethylvinylether	63	9.500	9.509	(1.171)	288891	200.000	385(A)	
	57 Toluene	92	9.829	9.823	(1.211)	3734241	200.000	160	
	58 4-methyl-2-pentanone	43	10.287	10.288	(1.268)	3461960	1000.00	910	
	59 Tetrachloroethene	164	10.265	10.259	(0.886)	1303740	200.000	186	
	60 trans-1,3-Dichloropropene	75	10.322	10.316	(1.272)	2216176	200.000	205(A)	
	61 1,1,2-Trichloroethane	83	10.501	10.502	(1.294)	1186569	200.000	188	
	62 Dibromochloromethane	129	10.701	10.702	(0.924)	1774493	200.000	224(A)	
	63 1,3-Dichloropropane	76	10.816	10.810	(0.934)	2454030	200.000	186	
	64 1,2-Dibromoethane	107	10.966	10.967	(1.351)	1529306	200.000	195	
	65 2-Hexanone	43	11.266	11.260	(0.973)	2630593	1000.00	1050(A)	
*	66 Chlorobenzene-D5	117	11.581	11.582	(1.000)	1264418	50.0000		
	67 Chlorobenzene	112	11.602	11.603	(1.002)	3926603	200.000	154	
	152 1-Chlorohexane	91	11.595	11.589	(1.001)	2470994	200.000	162	
	68 Ethylbenzene	106	11.652	11.639	(1.006)	2396483	200.000	180	
	69 1,1,1,2-Tetrachloroethane	131	11.688	11.682	(1.009)	1649700	200.000	216(A)	
M	70 Xylenes (total)	106				7924449	600.000	(a)	
	71 m+p-Xylenes	106	11.831	11.825	(1.022)	4987796	400.000	310	
	72 o-Xylene	106	12.367	12.361	(1.068)	2936653	200.000	190	
	73 Styrene	104	12.438	12.432	(1.074)	4495418	200.000	175	
	74 Bromoform	173	12.460	12.461	(1.076)	1064662	200.000	230(A)	
	75 Isopropylbenzene	105	12.774	12.768	(0.870)	6398373	200.000	146	
$	76 P-Bromofluorobenzene	95	13.139	13.133	(1.619)	784603	50.0000	51.1	
	77 cis-1,4-Dichloro-2-Butene	53	13.239	13.240	(0.901)	481885	200.000	264(A)	

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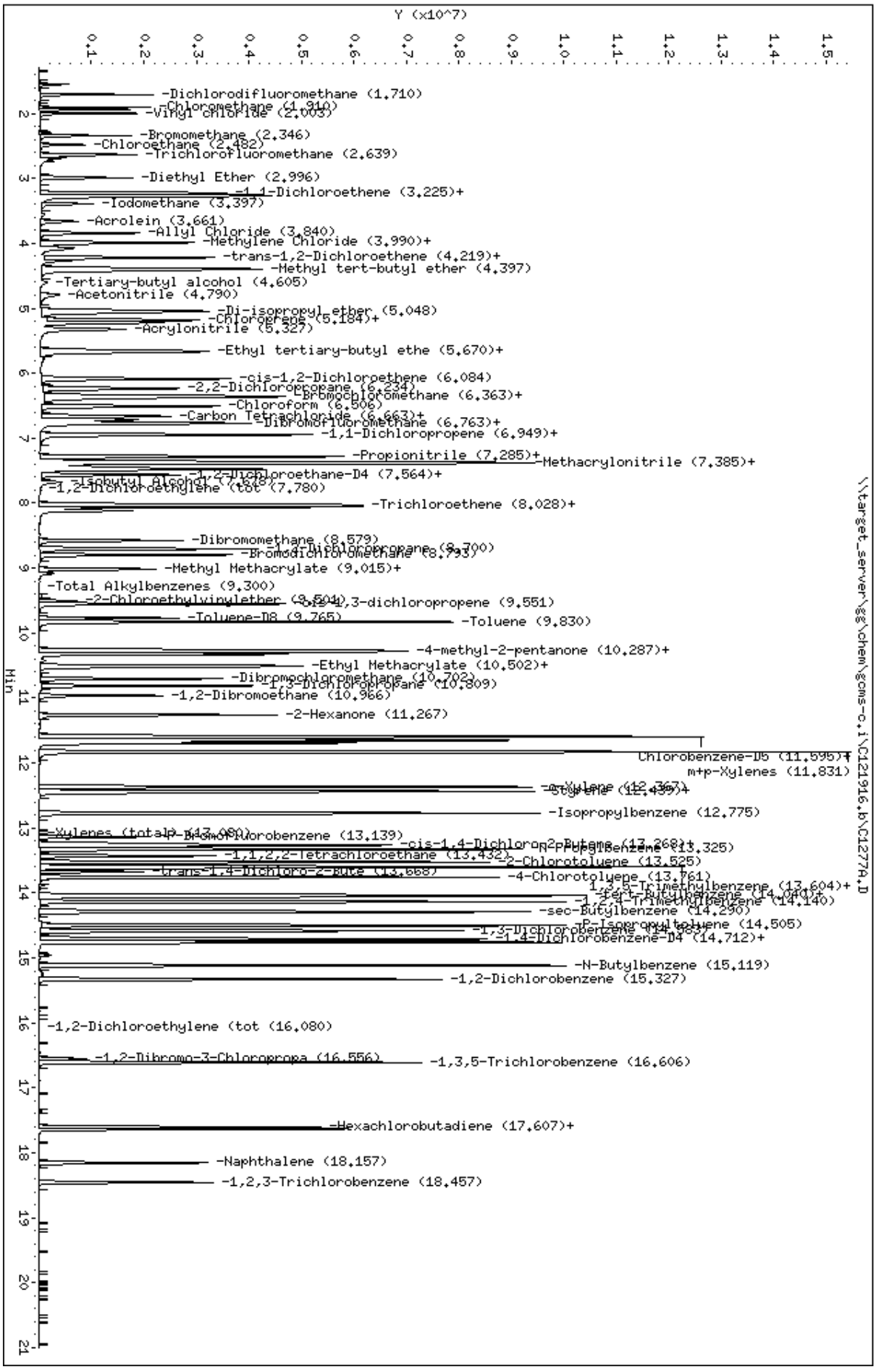
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.668	13.669	(0.930)	368988	200.000	289(A)	
79	Bromobenzene	156	13.275	13.269	(0.904)	2006639	200.000	173	
80	N-Propylbenzene	91	13.325	13.319	(0.907)	7233927	200.000	131	
81	1,1,2,2-Tetrachloroethane	83	13.432	13.426	(0.914)	1795913	200.000	181	
82	1,3,5-Trimethylbenzene	105	13.603	13.597	(0.926)	5530927	200.000	144	
83	2-Chlorotoluene	91	13.525	13.526	(0.921)	5071495	200.000	150	
84	1,2,3-Trichloropropane	75	13.603	13.597	(0.926)	1238307	200.000	167	
85	4-Chlorotoluene	91	13.761	13.755	(0.937)	5308047	200.000	144	
86	tert-Butylbenzene	119	14.032	14.033	(0.955)	5655256	200.000	162	
87	Pentachloroethane	117	14.054	14.055	(0.957)	1388287	200.000	225(A)	
88	1,2,4-Trimethylbenzene	105	14.140	14.134	(0.963)	5644698	200.000	147	
89	P-Isopropyltoluene	119	14.504	14.498	(0.987)	5925723	200.000	148	
90	1,3-Dichlorobenzene	146	14.583	14.577	(0.993)	3463723	200.000	160	
* 91	1,4-Dichlorobenzene-D4	152	14.690	14.691	(1.000)	730248	50.0000		
92	1,4-Dichlorobenzene	146	14.718	14.712	(1.002)	3451067	200.000	155	
93	N-Butylbenzene	91	15.119	15.113	(1.029)	5970978	200.000	143	
94	sec-Butylbenzene	105	14.290	14.284	(0.973)	6935724	200.000	138	
95	1,2-Dichlorobenzene	146	15.326	15.327	(1.043)	3300129	200.000	171	
96	1,2-Dibromo-3-Chloropropane	75	16.556	16.556	(1.127)	267926	200.000	218(A)	
97	1,3,5-Trichlorobenzene	180	16.606	16.607	(1.130)	2485989	200.000	177	
98	Hexachlorobutadiene	225	17.606	17.607	(1.199)	1057141	200.000	158	
99	1,2,4-Trichlorobenzene	180	17.635	17.636	(1.200)	1874217	200.000	197	
100	1,2,3-Trimethylbenzene	105	14.761	14.755	(1.005)	5746254	200.000	144	
101	Naphthalene	128	18.157	18.158	(1.236)	2720771	200.000	227(A)	
102	1,2,3-Trichlorobenzene	180	18.457	18.458	(1.256)	1110172	200.000	199	
103	Methyl Acetate	43	4.268	4.269	(0.574)	779081	200.000	205(A)	
104	Methylcyclohexane	83	8.028	8.022	(1.079)	2914363	200.000	177	
M 153	Total Alkylbenzenes	100				49295606	200.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.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Client ID:
Sample Info: WG197097-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18
\\target_server\gg\chem\gcms-c.i\C121916.b\C1277A.D
Y (x10^7)
Min
-Dichlorodifluoromethane (1.710)
-Chloromethane (1.910)
-Vinyl chloride (2.003)
-Bromomethane (2.346)
-Chloroethane (2.482)
-Trichlorofluoromethane (2.639)
-Diethyl Ether (2.996)
-1,1-Dichloroethene (3.225)+
-Iodomethane (3.397)
-Acrolein (3.661)
-Allyl Chloride (3.840)
-Methylene Chloride (3.990)+
-trans-1,2-Dichloroethene (4.219)+
-Methyl tert-butyl ether (4.397)
-Tertiary-butyl alcohol (4.605)
-Acetonitrile (4.790)
-Di-isopropyl ether (5.048)
-Chloroprene (5.184)+
-Acrylonitrile (5.327)
-Ethyl tertiary-butyl ethe (5.670)+
-cis-1,2-Dichlorpethene (6.084)
-2,2-Dichloropropane (6.234)
-Bromochloromethane (6.363)+
-Chloroform (6.506)
-Carbon Tetrachloride (6.663)+
-Dibromofluoromethane (6.763)+
-1,1-Dichloropropene (6.949)+
-Propionitrile (7.285)+
-Methacrylonitrile (7.385)+
-1,2-Dichloroethane-D4 (7.564)+
-Isobutyl Alcohol (7.648)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.028)+
-Dibromomethane (8.579)
-1,2-Dichloropropane (8.700)
-Bromodichloromethane (8.793)
-Methyl Methacrylate (9.015)+
-Total Alkylbenzenes (9.300)
-2-Chloroethylvinylether (9.504)
-trans-1,3-dichloropropene (9.551)
-Toluene-D8 (9.765)
-Toluene (9.830)
-4-methyl-2-pentanone (10.287)+
-Ethyl Methacrylate (10.502)+
-Dibromochloromethane (10.702)
-1,3-Dichloropropane (10.809)
-1,2-Dibromoethane (10.966)
-2-Hexanone (11.267)
Chlorobenzene-D5 (11.595)+
m+p-Xylenes (11.831)
-o-Xylene (12.367)
-Styrene (12.439)+
-Isopropylbenzene (12.775)
-Xylenes (total) (12.980)
-4-Bromofluorobenzene (13.139)
-cis-1,4-Dichloro-2-Butene (13.268)+
-n-Propylbenzene (13.325)
-1,1,2,2-Tetrachloroethane (13.432)
-2-Chlorotoluene (13.525)
-trans-1,4-Dichloro-2-Bute (13.668)
-4-Chlorotoluene (13.761)
-1,3,5-Trimethylbenzene (13.604)+
-tert-Butylbenzene (14.040)+
-1,2,4-Trimethylbenzene (14.140)
-sec-Butylbenzene (14.290)
-p-Isopropyltoluene (14.505)
-1,3-Dichlorobenzene (14.604)
-1,4-Dichlorobenzene-D4 (14.712)+
-N-Butylbenzene (15.119)
-1,2-Dichlorobenzene (15.327)
-1,2-Dichloroethylene (tot (16.080)
-1,2-Dibromo-3-Chloropropa (16.556)
-1,3,5-Trichlorobenzene (16.606)
-Hexachlorobutadiene (17.607)+
-Naphthalene (18.157)
-1,2,3-Trichlorobenzene (18.457)

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1279A.D
Report Date: 30-Dec-2016 15:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C121916.b\C1279A.D
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Inj Date : 19-DEC-2016 14:03 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197097-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C121916.b\C6A05(02).m
Meth Date : 20-Dec-2016 10:27 tjordan Quant Type: ISTD
Cal Date : 19-DEC-2016 13:12 Cal File: C1278.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.707	1.710	(0.229)	711550	100.000	89.7	
2 Chloromethane	50	1.907	1.910	(0.256)	791408	100.000	90.5	
3 Vinyl chloride	62	2.000	1.996	(0.269)	734226	100.000	90.7	
4 Bromomethane	94	2.343	2.346	(0.315)	446499	100.000	88.9	
5 Chloroethane	64	2.472	2.482	(0.332)	195846	100.000	48.3	
6 Trichlorofluoromethane	101	2.622	2.632	(0.352)	874543	100.000	77.6	
7 Diethyl Ether	59	3.001	2.997	(0.403)	467272	100.000	97.2	
8 Tertiary-butyl alcohol	59	4.616	4.612	(0.621)	212518	500.000	386	
9 1,1-Dichloroethene	96	3.215	3.219	(0.432)	833565	100.000	90.5	
10 Carbon Disulfide	76	3.251	3.247	(0.437)	2164582	100.000	97.9	
11 Freon-113	151	3.272	3.276	(0.440)	634329	100.000	94.4	
12 Iodomethane	142	3.394	3.397	(0.456)	743619	100.000	115	
13 Acrolein	56	3.665	3.662	(0.493)	372843	500.000	480	
14 Methylene Chloride	84	3.987	3.990	(0.536)	988869	100.000	87.0	
15 Acetone	43	4.080	4.075	(0.548)	591658	500.000	371	
16 Isobutyl Alcohol	43	7.675	7.679	(1.032)	260641	2000.00	1470	
17 trans-1,2-Dichloroethene	96	4.216	4.219	(0.567)	885402	100.000	98.0	
18 Allyl Chloride	41	3.837	3.840	(0.516)	996219	100.000	110	
19 Methyl tert-butyl ether	73	4.402	4.405	(0.592)	3484015	200.000	192	
20 Acetonitrile	39	4.795	4.798	(0.645)	78099	1000.00	1070	
21 Di-isopropyl ether	45	5.052	5.048	(0.679)	2347682	100.000	103	
22 Chloroprene	53	5.181	5.177	(0.696)	1236441	100.000	103	
23 Propionitrile	54	7.347	7.343	(0.988)	527173	1000.00	965	
24 Methacrylonitrile	41	7.375	7.364	(0.991)	2576804	1000.00	896	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1279A.D
Report Date: 30-Dec-2016 15:35

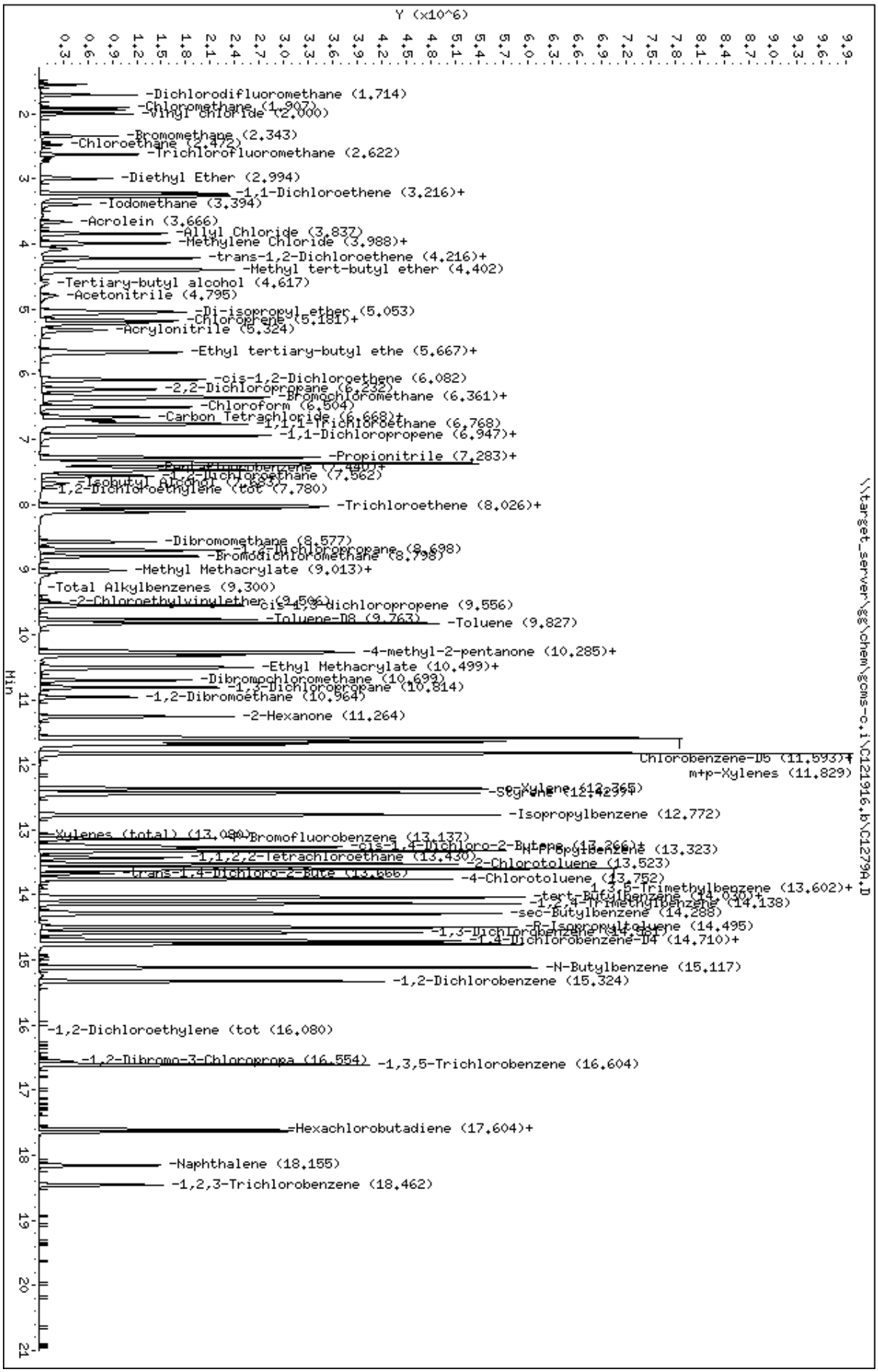
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.216	5.220	(0.701)	1482494	100.000	95.9	
	26	Acrylonitrile	52	5.324	5.320	(0.716)	683354	500.000	464	
	27	Ethyl tertiary-butyl ether	59	5.660	5.663	(0.761)	1905906	100.000	104	
	28	Vinyl Acetate	43	5.681	5.685	(0.700)	1147367	100.000	112	
	29	cis-1,2-Dichloroethene	96	6.081	6.085	(0.817)	1078679	100.000	97.4	
M	30	1,2-Dichloroethylene (total)	96				1964081	100.000	(a)	
	31	Methyl Methacrylate	41	9.012	9.016	(1.111)	454892	100.000	110	
	32	2,2-Dichloropropane	77	6.239	6.235	(0.839)	1284063	100.000	100	
	33	Bromochloromethane	128	6.374	6.371	(0.857)	433994	100.000	101	
	34	Chloroform	83	6.503	6.507	(0.874)	1734885	100.000	96.1	
	35	Carbon Tetrachloride	117	6.660	6.664	(0.821)	986070	100.000	165	
	36	Tetrahydrofuran	42	6.710	6.721	(0.902)	548860	500.000	483	
$	37	Dibromofluoromethane	113	6.760	6.764	(0.909)	482988	50.0000	48.6	
	38	1,1,1-Trichloroethane	97	6.768	6.764	(0.910)	1525130	100.000	99.4	
	39	1,1-Dichloropropene	75	6.946	6.943	(0.856)	1296818	100.000	99.9	
	40	2-Butanone	43	6.953	6.957	(0.935)	846555	500.000	471	
	41	Benzene	78	7.282	7.286	(0.898)	3347196	100.000	94.7	
*	42	Pentafluorobenzene	168	7.440	7.436	(1.000)	760964	50.0000		
	43	Cyclohexane	56	6.353	6.349	(0.854)	1265796	100.000	100	
	44	Ethyl Methacrylate	69	10.520	10.524	(1.297)	873506	100.000	112	
$	45	1,2-Dichloroethane-D4	65	7.475	7.472	(1.005)	494821	50.0000	46.9	
	46	Tertiary-amyl methyl ether	73	7.475	7.479	(1.005)	1688108	100.000	105	
	47	1,2-Dichloroethane	62	7.561	7.557	(0.932)	1087595	100.000	92.3	
	48	Trichloroethene	95	8.054	8.058	(0.993)	964526	100.000	88.8	
*	49	1,4-Difluorobenzene	114	8.111	8.115	(1.000)	1400048	50.0000		
	50	Dibromomethane	93	8.576	8.580	(1.057)	534360	100.000	95.1	
	51	1,2-Dichloropropane	63	8.698	8.701	(1.072)	822081	100.000	101	
	52	Bromodichloromethane	83	8.798	8.794	(1.085)	1337112	100.000	103	
	53	cis-1,3-dichloropropene	75	9.548	9.552	(1.177)	1436967	100.000	105	
	54	1,4-Dioxane	88	9.048	9.051	(1.115)	173003	2000.00	992	
$	55	Toluene-D8	98	9.763	9.766	(1.204)	1689722	50.0000	49.8	
	56	2-Chloroethylvinylether	63	9.505	9.509	(1.172)	105718	100.000	114	
	57	Toluene	92	9.827	9.823	(1.211)	2190826	100.000	93.8	
	58	4-methyl-2-pentanone	43	10.284	10.288	(1.268)	1882536	500.000	483	
	59	Tetrachloroethene	164	10.263	10.259	(0.886)	740817	100.000	102	
	60	trans-1,3-Dichloropropene	75	10.320	10.316	(1.272)	1183442	100.000	104	
	61	1,1,2-Trichloroethane	83	10.499	10.502	(1.294)	635886	100.000	97.9	
	62	Dibromochloromethane	129	10.699	10.702	(0.924)	936887	100.000	110	
	63	1,3-Dichloropropane	76	10.813	10.810	(0.934)	1357578	100.000	99.6	
	64	1,2-Dibromoethane	107	10.963	10.967	(1.352)	783286	100.000	96.1	
	65	2-Hexanone	43	11.264	11.260	(0.973)	1354977	500.000	513	
*	66	Chlorobenzene-D5	117	11.578	11.582	(1.000)	1325070	50.0000		
	67	Chlorobenzene	112	11.600	11.603	(1.002)	2344898	100.000	92.2	
	152	1-Chlorohexane	91	11.592	11.589	(1.001)	1448756	100.000	94.9	
	68	Ethylbenzene	106	11.643	11.639	(1.006)	1370632	100.000	100	
	69	1,1,1,2-Tetrachloroethane	131	11.685	11.682	(1.009)	901844	100.000	111	
M	70	Xylenes (total)	106				4724853	300.000	(a)	
	71	m+p-Xylenes	106	11.828	11.825	(1.022)	3064534	200.000	190	
	72	o-Xylene	106	12.364	12.361	(1.068)	1660319	100.000	104	
	73	Styrene	104	12.429	12.432	(1.073)	2700192	100.000	103	
	74	Bromoform	173	12.457	12.461	(1.076)	536225	100.000	107	
	75	Isopropylbenzene	105	12.772	12.768	(0.870)	4008208	100.000	96.7	
$	76	P-Bromofluorobenzene	95	13.136	13.133	(1.619)	797992	50.0000	49.6	
	77	cis-1,4-Dichloro-2-Butene	53	13.237	13.240	(0.901)	229312	100.000	118	

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1279A.D
Report Date: 30-Dec-2016 15:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.665	13.669	(0.930)	175569	100.000	126	
79	Bromobenzene	156	13.272	13.269	(0.904)	1111933	100.000	98.2	
80	N-Propylbenzene	91	13.322	13.319	(0.907)	4744280	100.000	91.8	
81	1,1,2,2-Tetrachloroethane	83	13.430	13.426	(0.914)	930104	100.000	95.4	
82	1,3,5-Trimethylbenzene	105	13.594	13.597	(0.926)	3487155	100.000	96.0	
83	2-Chlorotoluene	91	13.522	13.526	(0.921)	3081709	100.000	95.7	
84	1,2,3-Trichloropropane	75	13.601	13.597	(0.926)	648960	100.000	90.1	
85	4-Chlorotoluene	91	13.751	13.755	(0.936)	3250113	100.000	93.0	
86	tert-Butylbenzene	119	14.030	14.033	(0.955)	3422121	100.000	101	
87	Pentachloroethane	117	14.059	14.055	(0.957)	758759	100.000	120	
88	1,2,4-Trimethylbenzene	105	14.137	14.134	(0.963)	3484392	100.000	95.8	
89	P-Isopropyltoluene	119	14.495	14.498	(0.987)	3685379	100.000	96.5	
90	1,3-Dichlorobenzene	146	14.580	14.577	(0.993)	2039296	100.000	97.6	
* 91	1,4-Dichlorobenzene-D4	152	14.688	14.691	(1.000)	732443	50.0000		
92	1,4-Dichlorobenzene	146	14.716	14.712	(1.002)	1992794	100.000	93.5	
93	N-Butylbenzene	91	15.116	15.113	(1.029)	3782263	100.000	95.7	
94	sec-Butylbenzene	105	14.287	14.284	(0.973)	4443678	100.000	93.7	
95	1,2-Dichlorobenzene	146	15.324	15.327	(1.043)	1848636	100.000	98.2	
96	1,2-Dibromo-3-Chloropropane	75	16.553	16.556	(1.127)	120528	100.000	96.2	
97	1,3,5-Trichlorobenzene	180	16.603	16.607	(1.130)	1392838	100.000	101	
98	Hexachlorobutadiene	225	17.604	17.607	(1.199)	589658	100.000	91.8	
99	1,2,4-Trichlorobenzene	180	17.633	17.636	(1.201)	963012	100.000	101	
100	1,2,3-Trimethylbenzene	105	14.759	14.755	(1.005)	3559696	100.000	94.1	
101	Naphthalene	128	18.154	18.158	(1.236)	1299766	100.000	96.6	
102	1,2,3-Trichlorobenzene	180	18.462	18.458	(1.257)	525524	100.000	94.1	
103	Methyl Acetate	43	4.266	4.269	(0.573)	387531	100.000	97.6	
104	Methylcyclohexane	83	8.026	8.022	(1.079)	1687402	100.000	101	
M 153	Total Alkylbenzenes	100				31057476	100.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Sample Info: WG197097-5
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Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18
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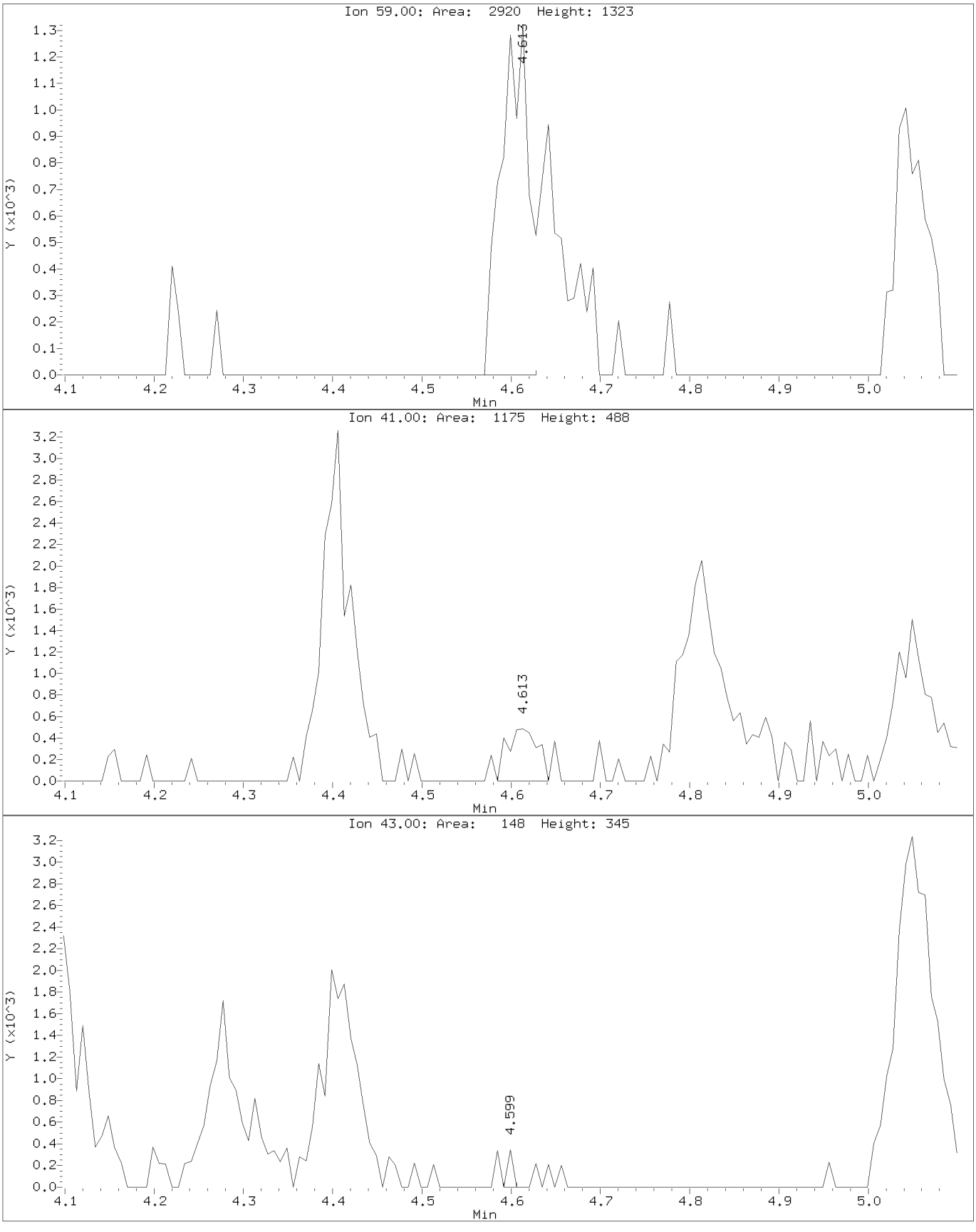
Y (x10^6)
Min
-Dichlorodifluoromethane (1.714)
-Chloromethane (1.907)
-Vinyl Chloride (2.000)
-Bromomethane (2.343)
-Chloroethane (2.472)
-Trichlorofluoromethane (2.622)
-Diethyl Ether (2.994)
-1,1-Dichloroethene (3.216)+
-Iodomethane (3.394)
-Acrolein (3.666)
-Allyl Chloride (3.837)
-Methylene Chloride (3.988)+
-trans-1,2-Dichloroethene (4.216)+
-Methyl tert-butyl ether (4.402)
-Tertiary-butyl alcohol (4.617)
-Acetonitrile (4.795)
-Di-isopropyl ether (5.053)
-Chloroprene (5.181)+
-Acrylonitrile (5.324)
-Ethyl tertiary-butyl ethe (5.667)+
-cis-1,2-Dichloroethene (6.082)
-2,2-Dichloropropane (6.232)
-Bromochloromethane (6.361)+
-Chloroform (6.504)
-Carbon Tetrachloride (6.668)+
1,1,1-Trichloroethane (6.768)
-1,1-Dichloropropene (6.947)+
-Propionitrile (7.283)+
-Isobutyl Alcohol (7.553)+
-1,2-Dichloroethane (7.562)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.026)+
-Dibromomethane (8.577)
-1,2-Dichloropropane (8.698)
-Bromodichloromethane (8.798)
-Methyl Methacrylate (9.013)+
-Total Alkylbenzenes (9.300)
-2-Chloroethylvinylether (9.506)
cis-1,3-Dichloropropene (9.556)
-Toluene-D8 (9.763)
-Toluene (9.827)
-4-methyl-2-pentanone (10.285)+
-Ethyl Methacrylate (10.499)+
-Dibromochloromethane (10.699)
-1,3-Dichloropropane (10.814)
-1,2-Dibromoethane (10.964)
-2-Hexanone (11.264)
Chlorobenzene-D5 (11.593)+
m+p-Xylenes (11.829)
-o-Xylene (12.365)
-Styrene (12.429)+
-Isopropylbenzene (12.772)
-Xylenes (total) (13.080)
-p-Bromofluorobenzene (13.137)
-cis-1,4-Dichloro-2-Butene (13.266)+
-n-Propylbenzene (13.323)
-1,1,2,2-Tetrachloroethane (13.430)
-2-Chlorotoluene (13.523)
-trans-1,4-Dichloro-2-Bute (13.666)
-4-Chlorotoluene (13.752)
-1,3,5-Trimethylbenzene (13.602)+
-tert-Butylbenzene (14.030)+
-1,2,4-Trimethylbenzene (14.138)
-sec-Butylbenzene (14.288)
-p-Isopropyltoluene (14.495)
-1,3-Dichlorobenzene (14.567)
-1,4-Dichlorobenzene-D4 (14.710)+
-N-Butylbenzene (15.117)
-1,2-Dichlorobenzene (15.324)
-1,2-Dichloroethylene (tot (16.080)
-1,2-Dibromo-3-Chloropropa (16.554)
-1,3,5-Trichlorobenzene (16.604)
-Hexachlorobutadiene (17.604)+
-Naphthalene (18.155)
-1,2,3-Trichlorobenzene (18.462)

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Tertiary-butyl alcohol
CAS Number: 75-65-0



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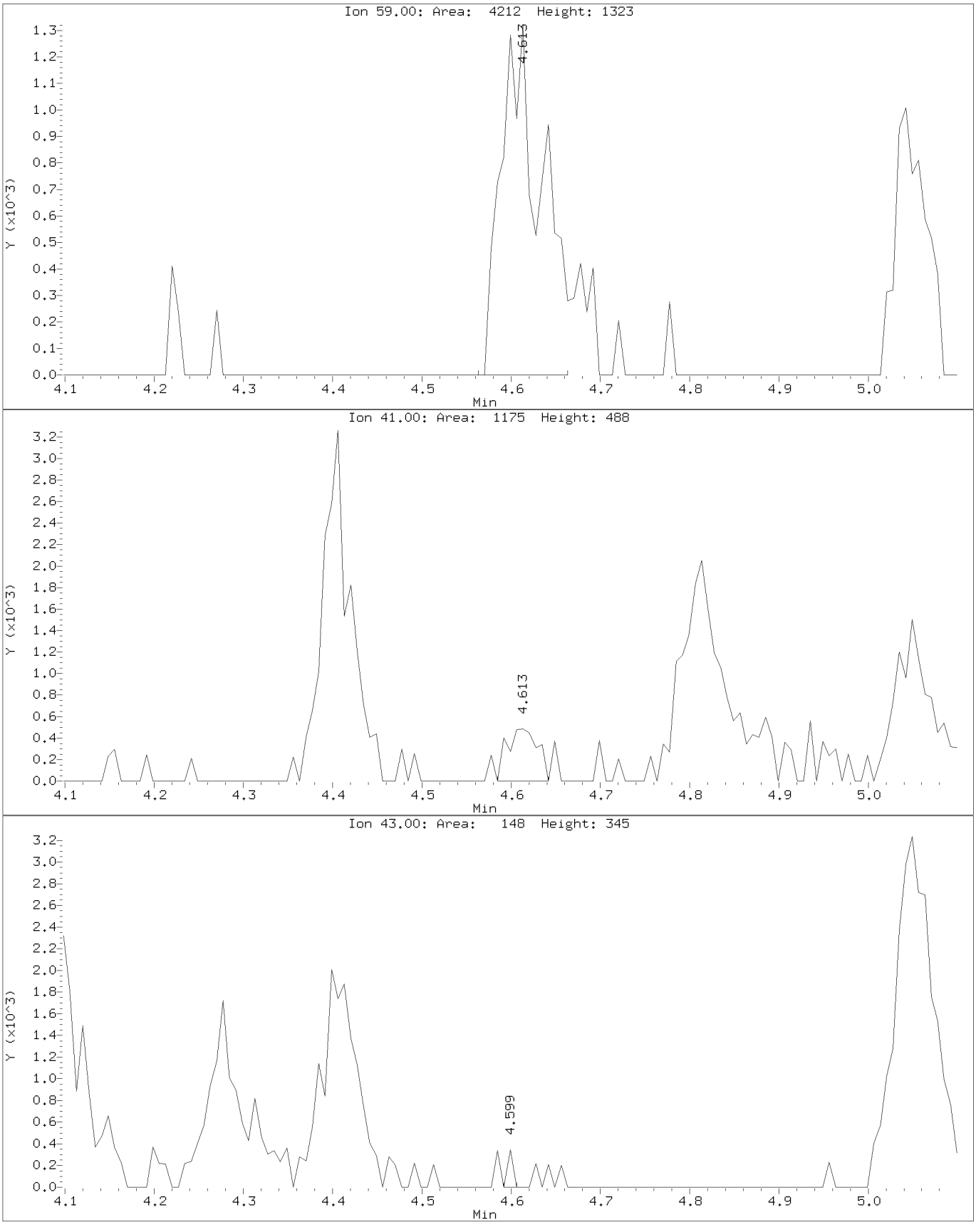
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Tertiary-butyl alcohol
CAS Number: 75-65-0



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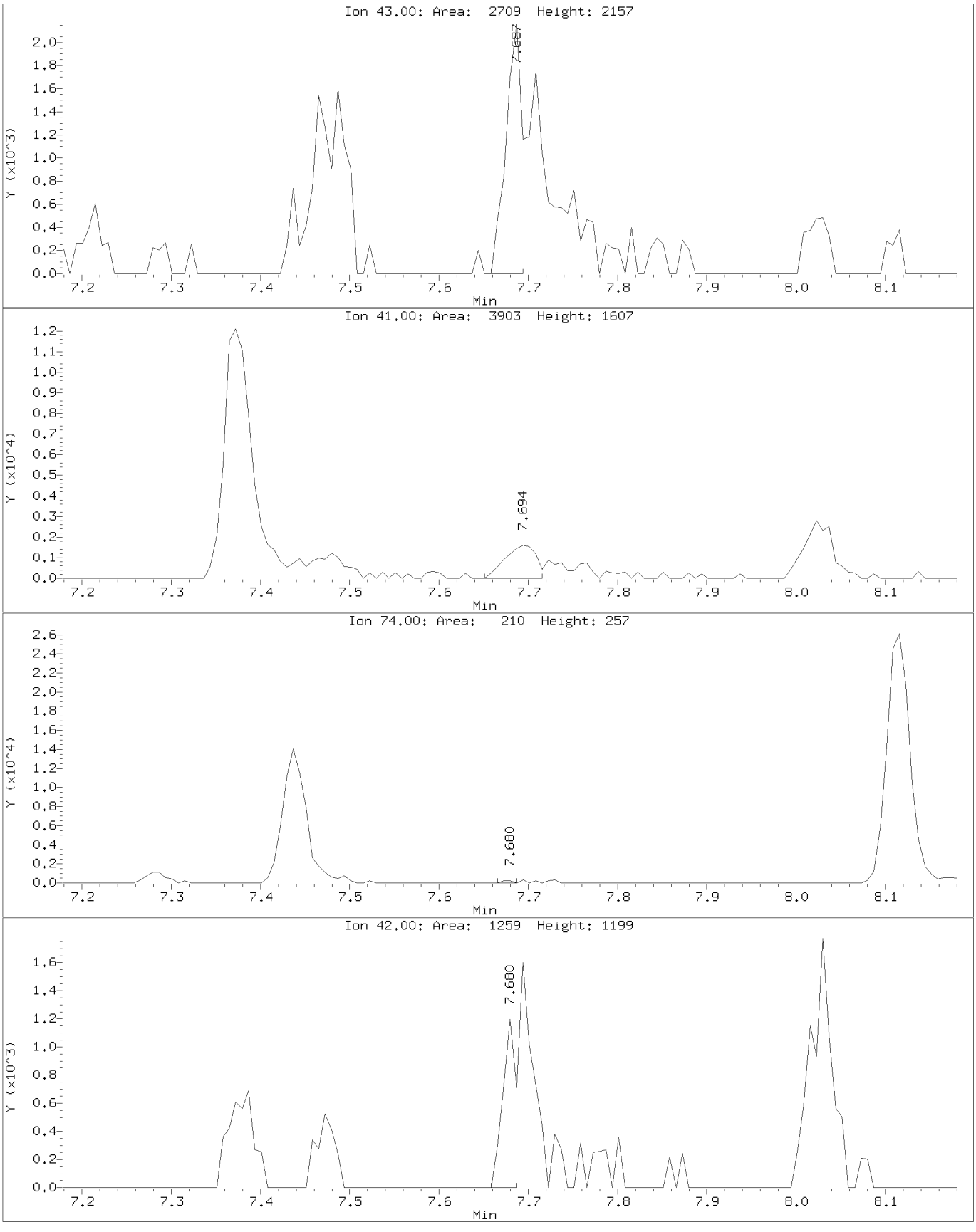
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Isobutyl Alcohol
CAS Number: 78-83-1



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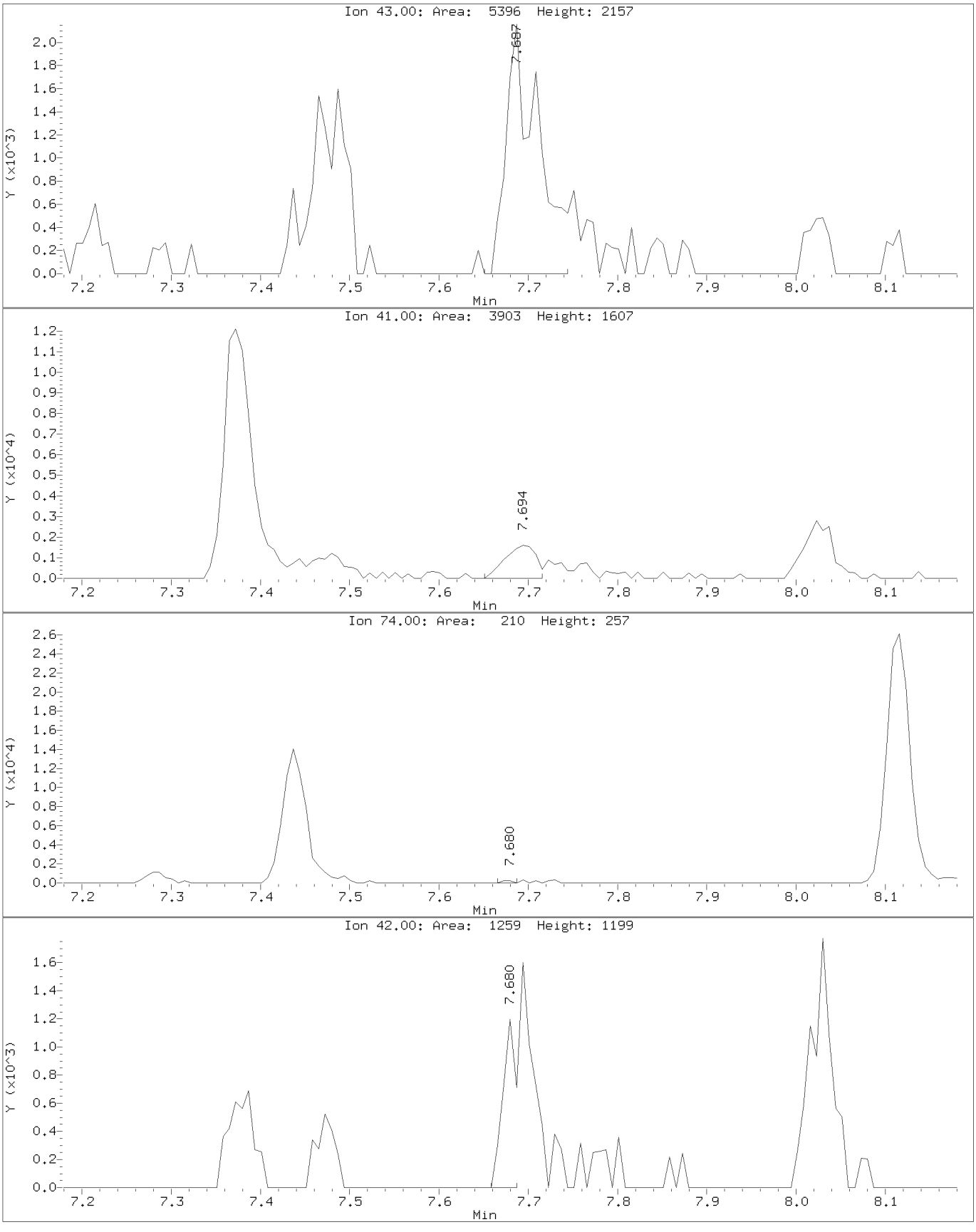
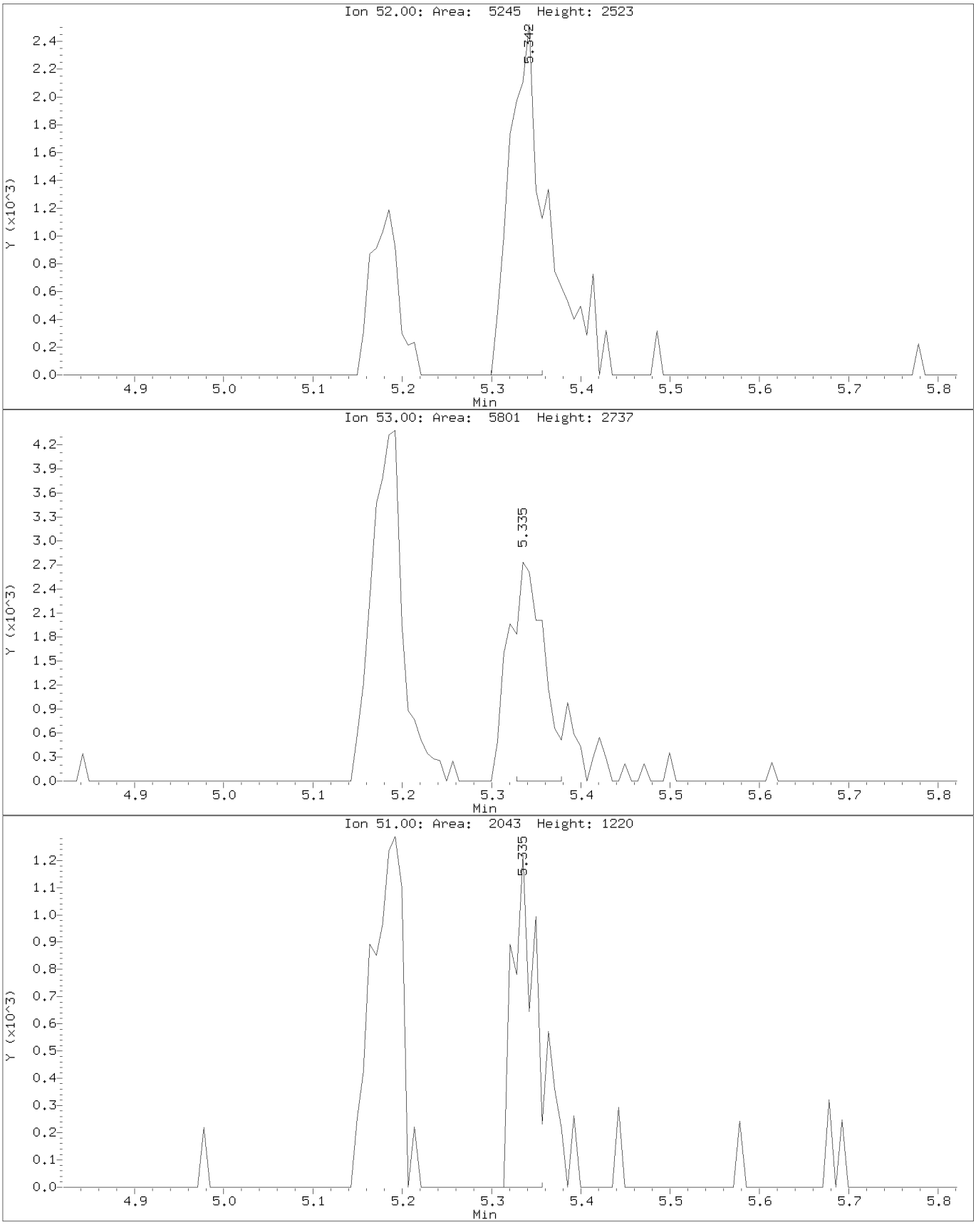
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Isobutyl Alcohol
CAS Number: 78-83-1



Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Acrylonitrile
CAS Number: 107-13-1



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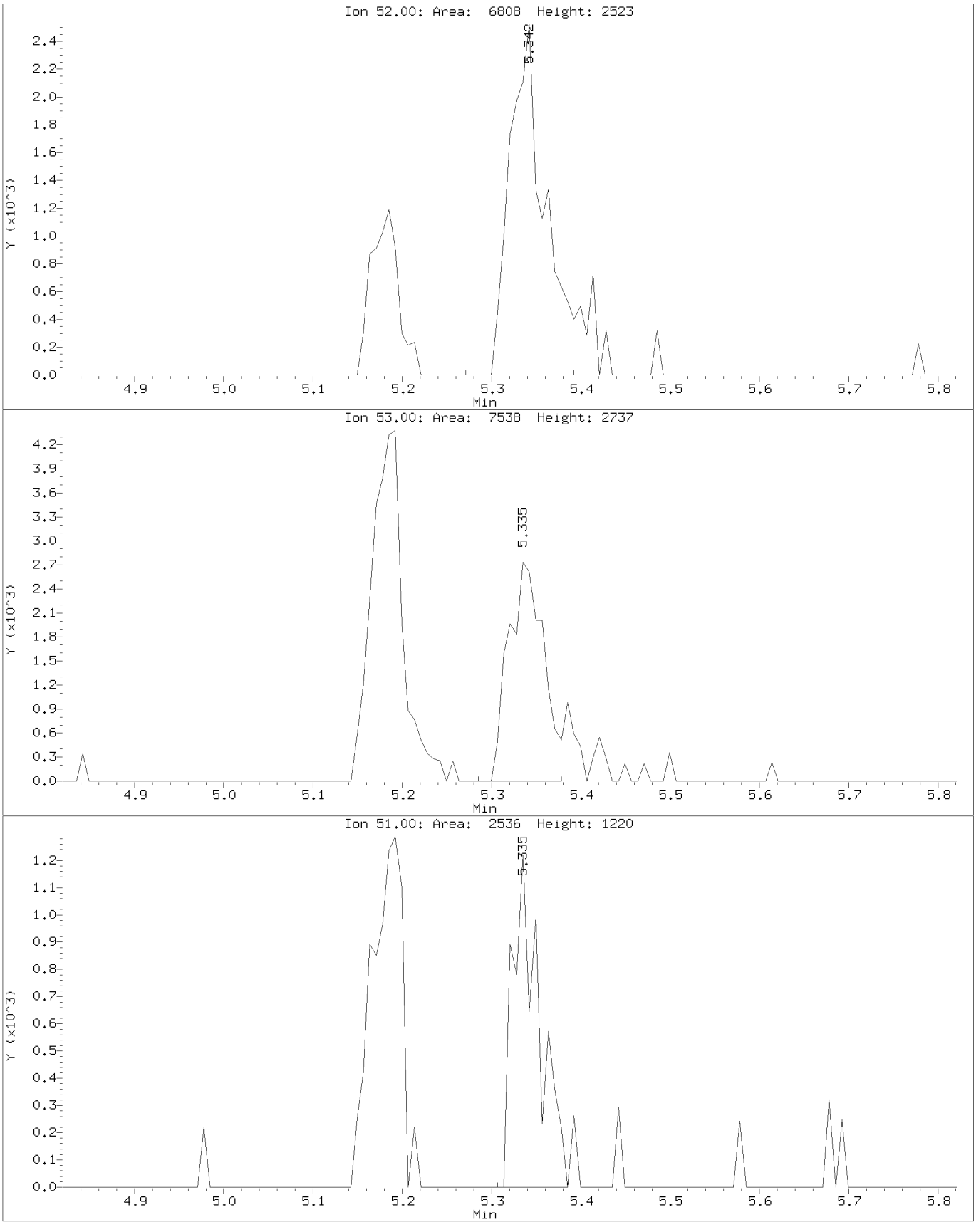
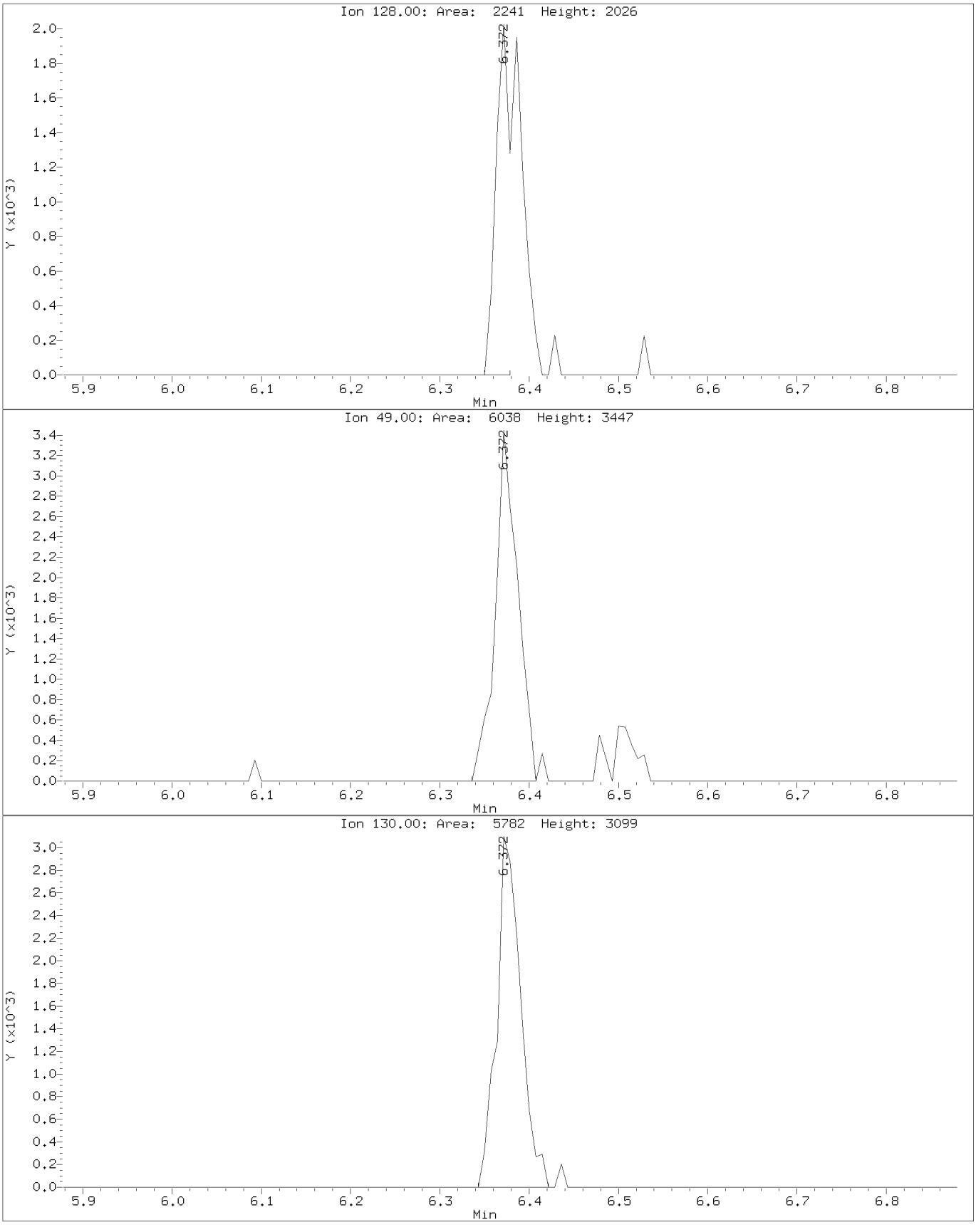
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Acrylonitrile
CAS Number: 107-13-1



Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Bromochloromethane
CAS Number: 74-97-5



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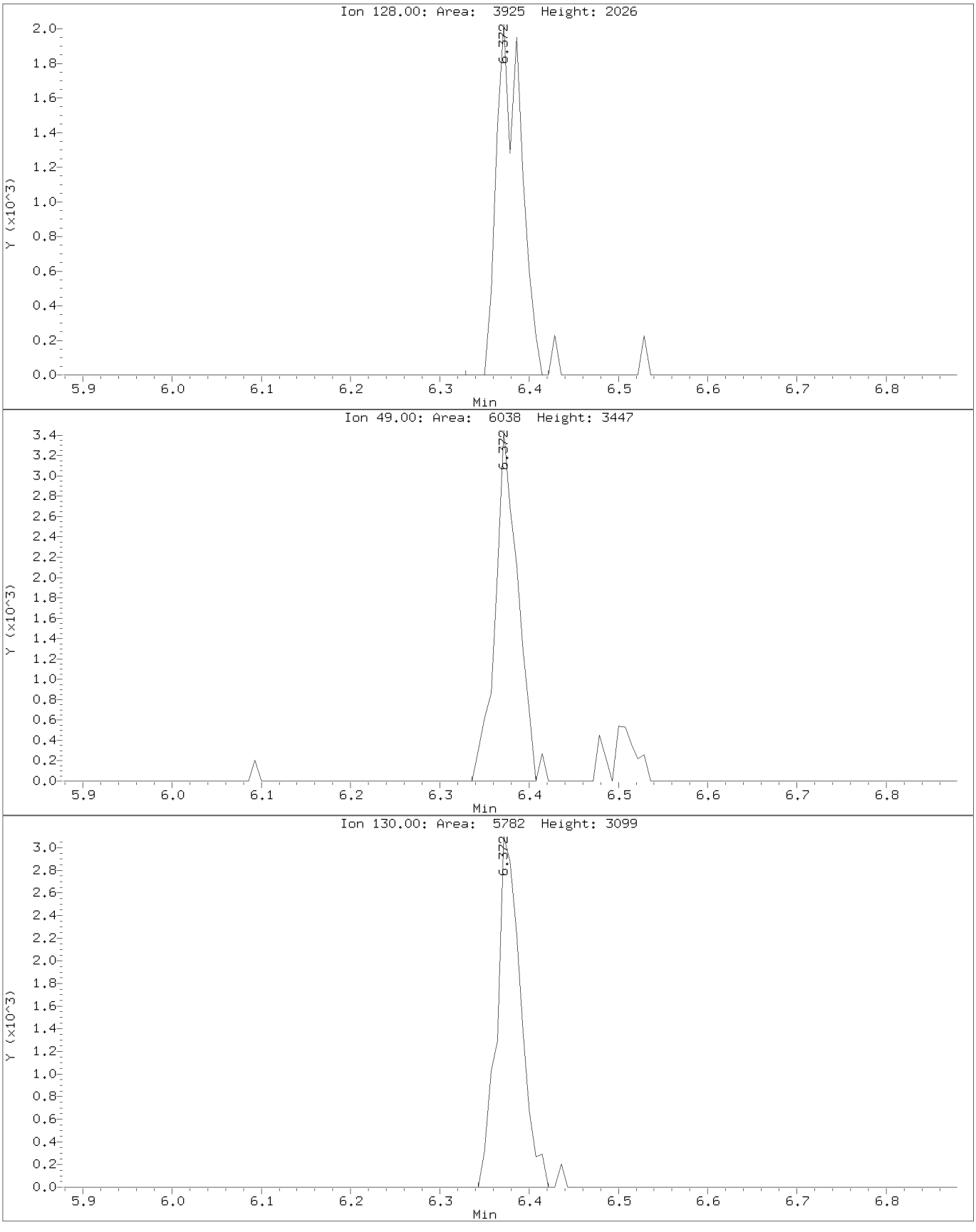
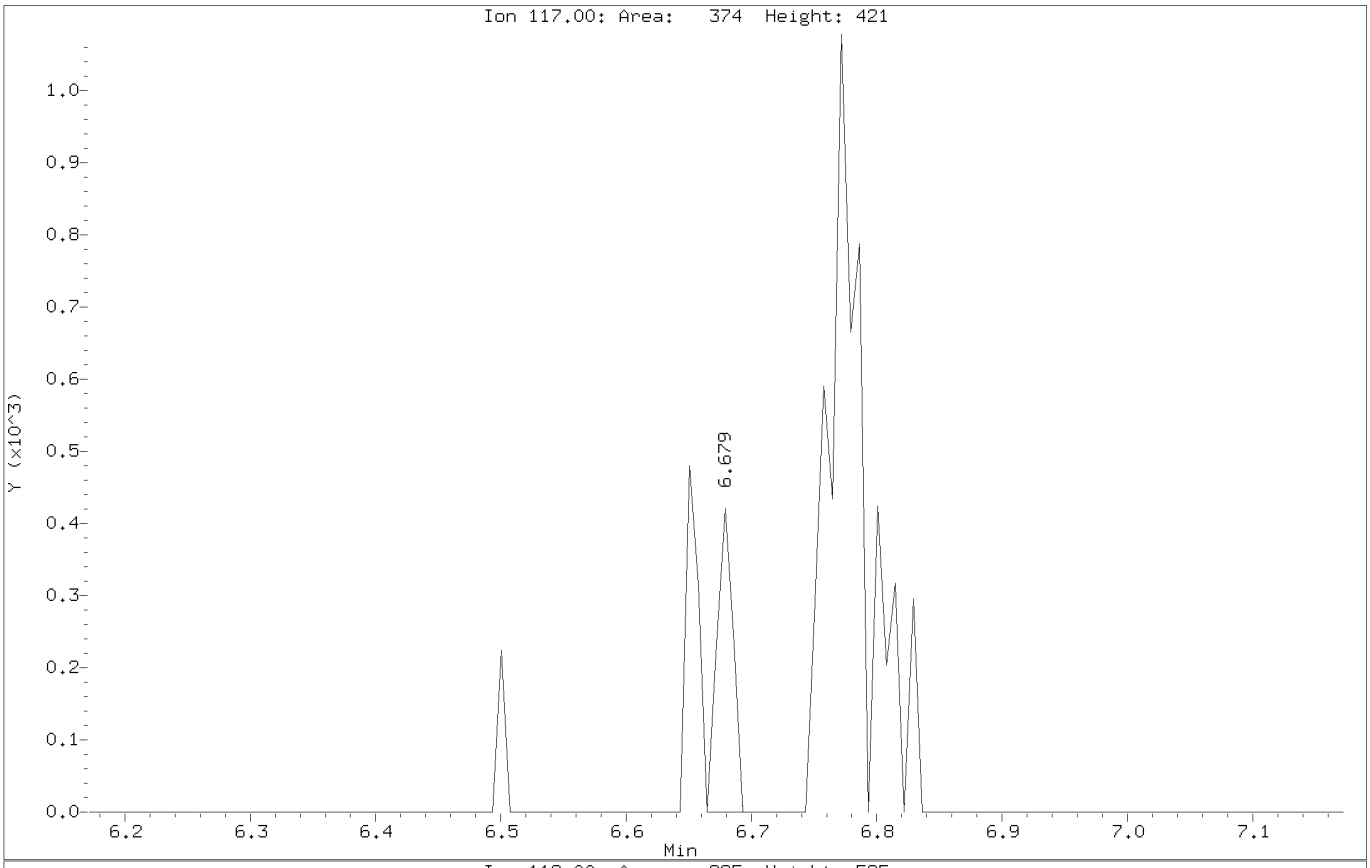
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

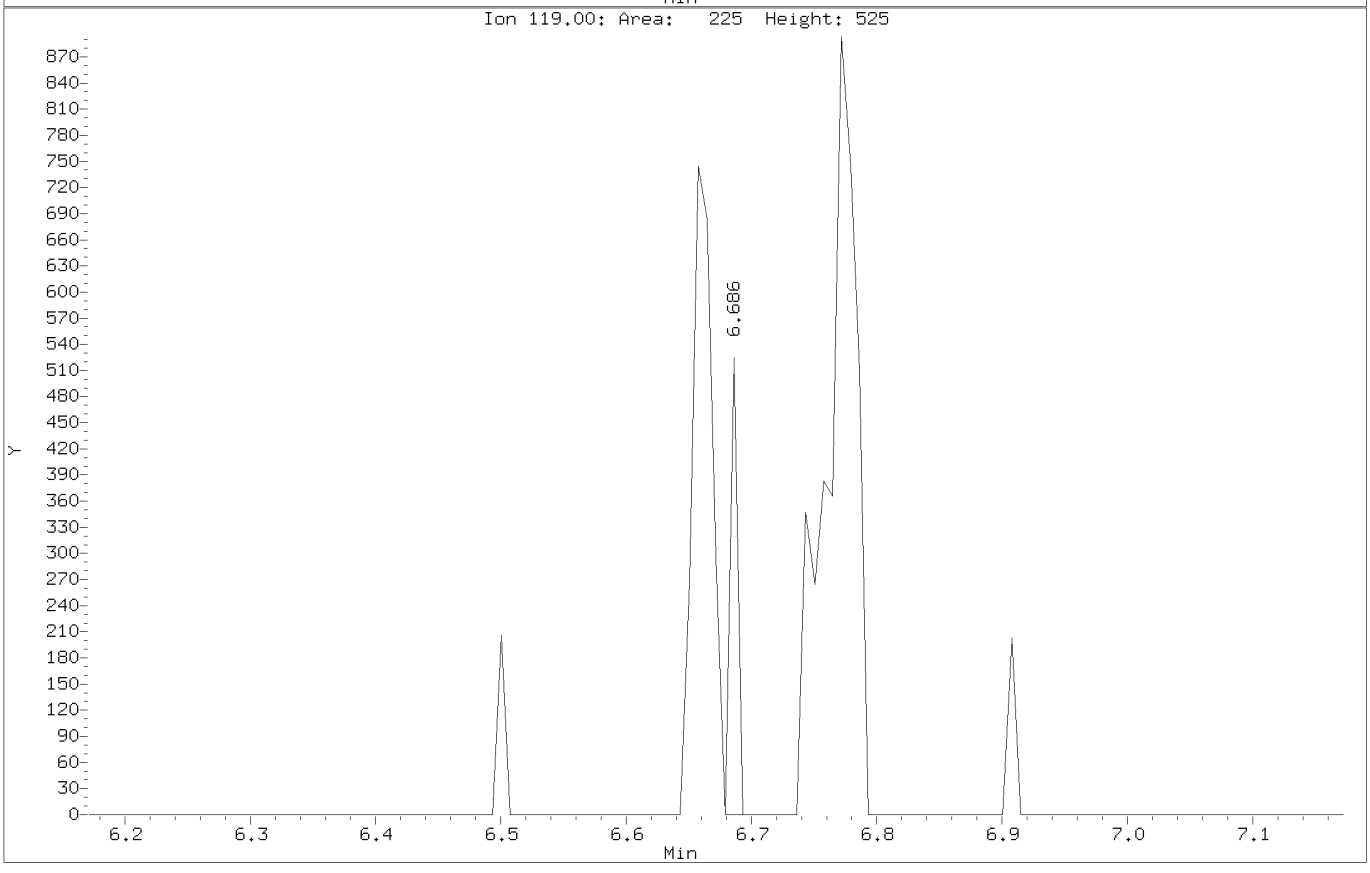
Compound: Bromochloromethane
CAS Number: 74-97-5



Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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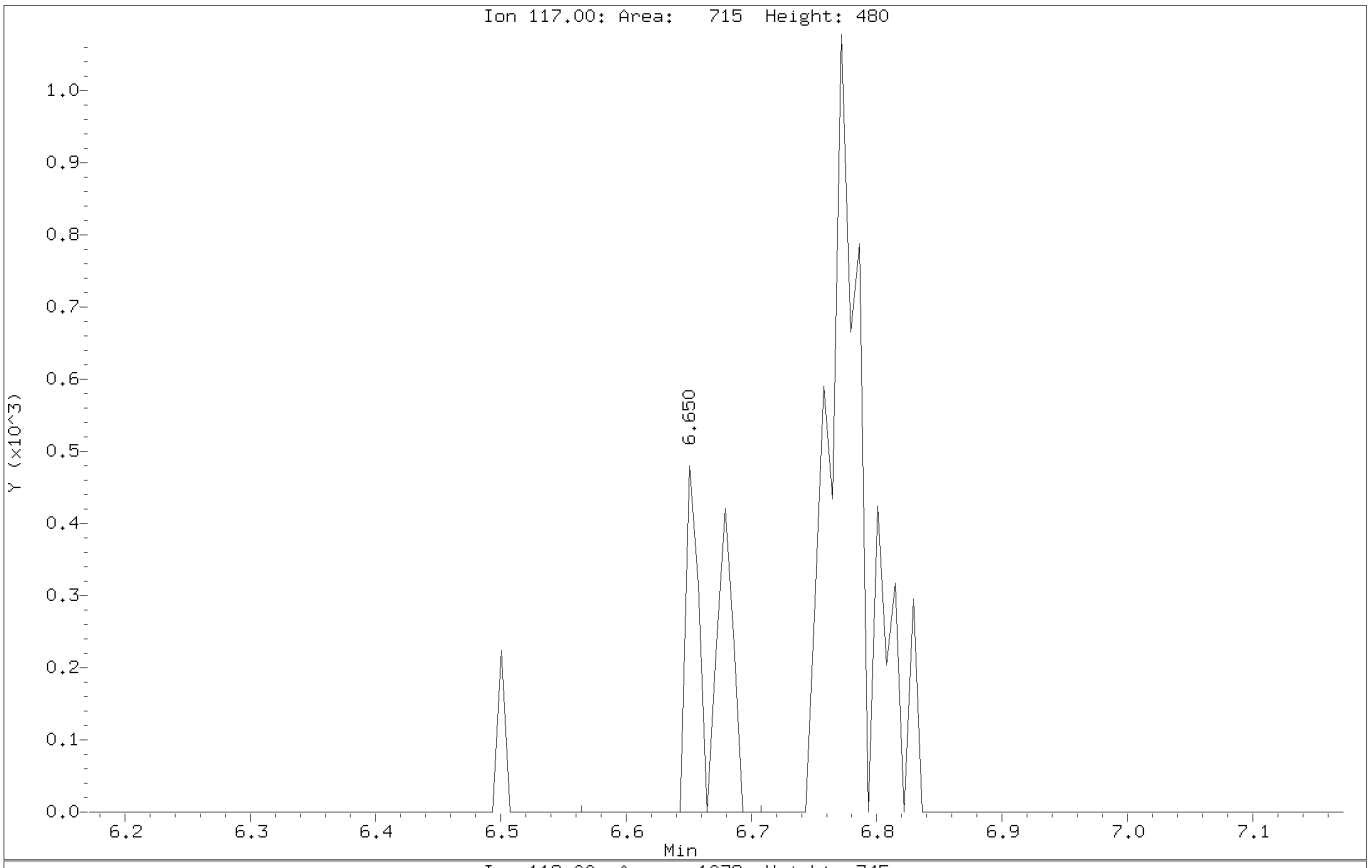
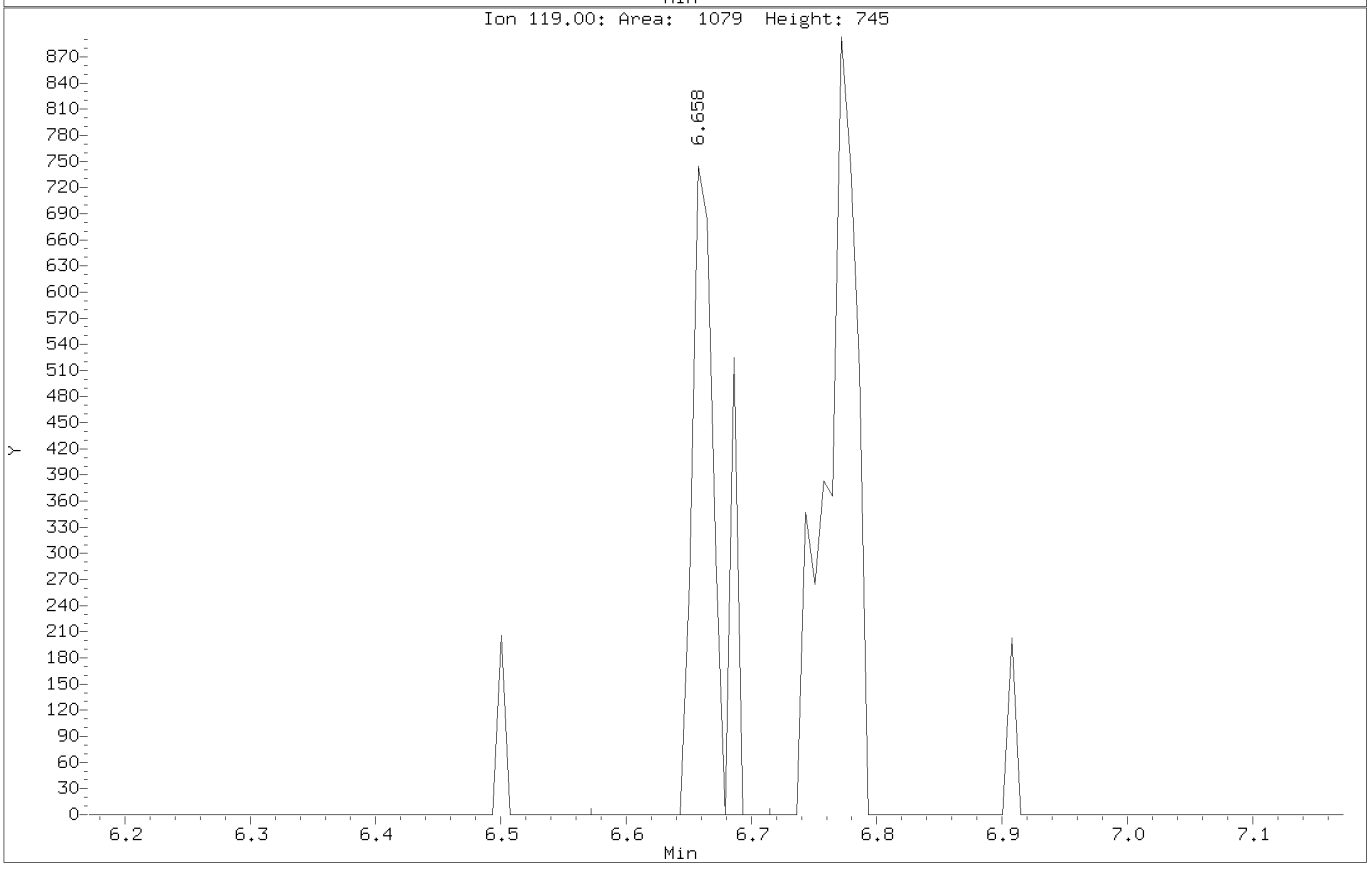
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

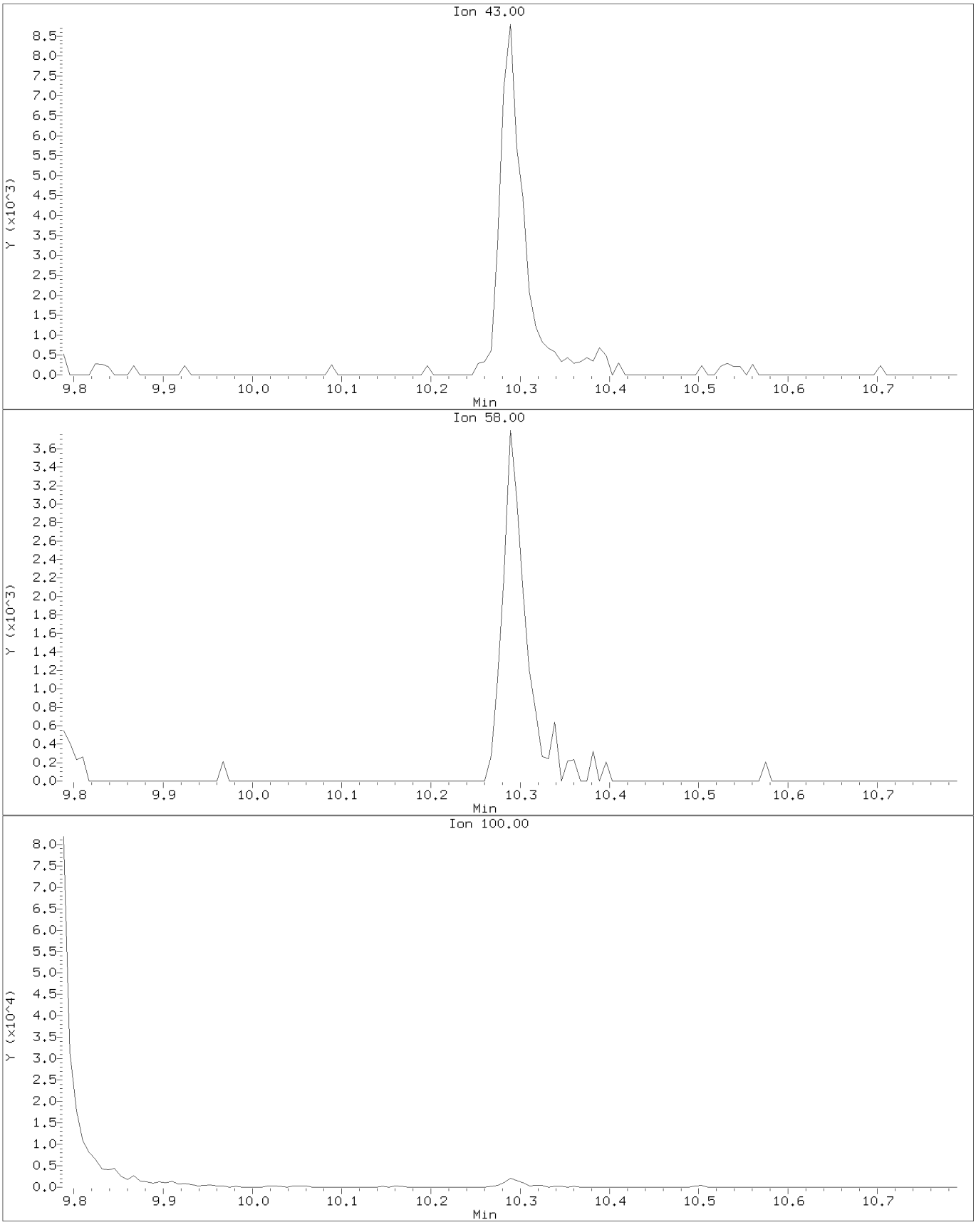
Compound: Carbon Tetrachloride
CAS Number: 56-23-5





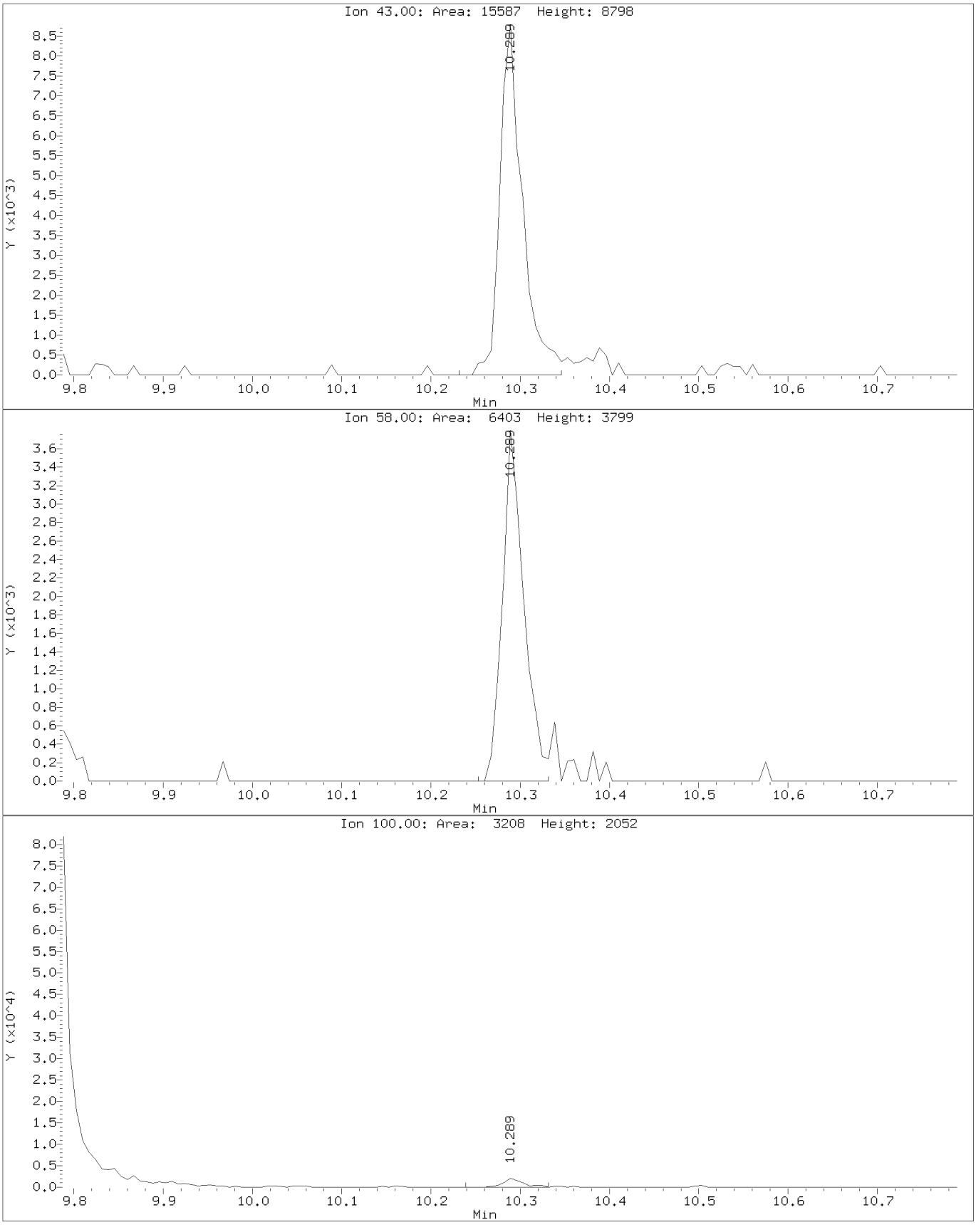
Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: 4-methyl-2-pentanone
CAS Number: 108-10-1



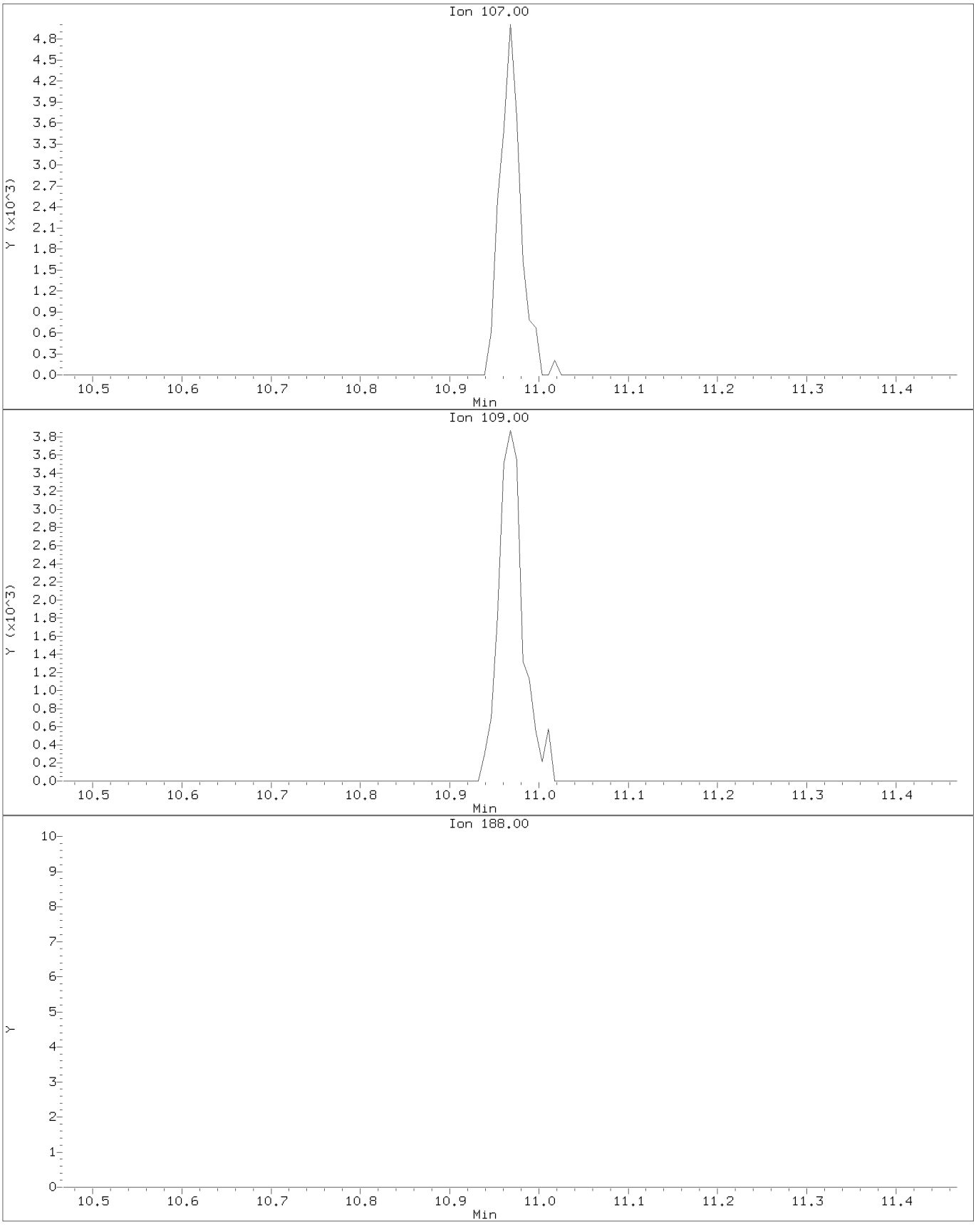
Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: 4-methyl-2-pentanone
CAS Number: 108-10-1



Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: 1,2-Dibromoethane
CAS Number: 106-93-4



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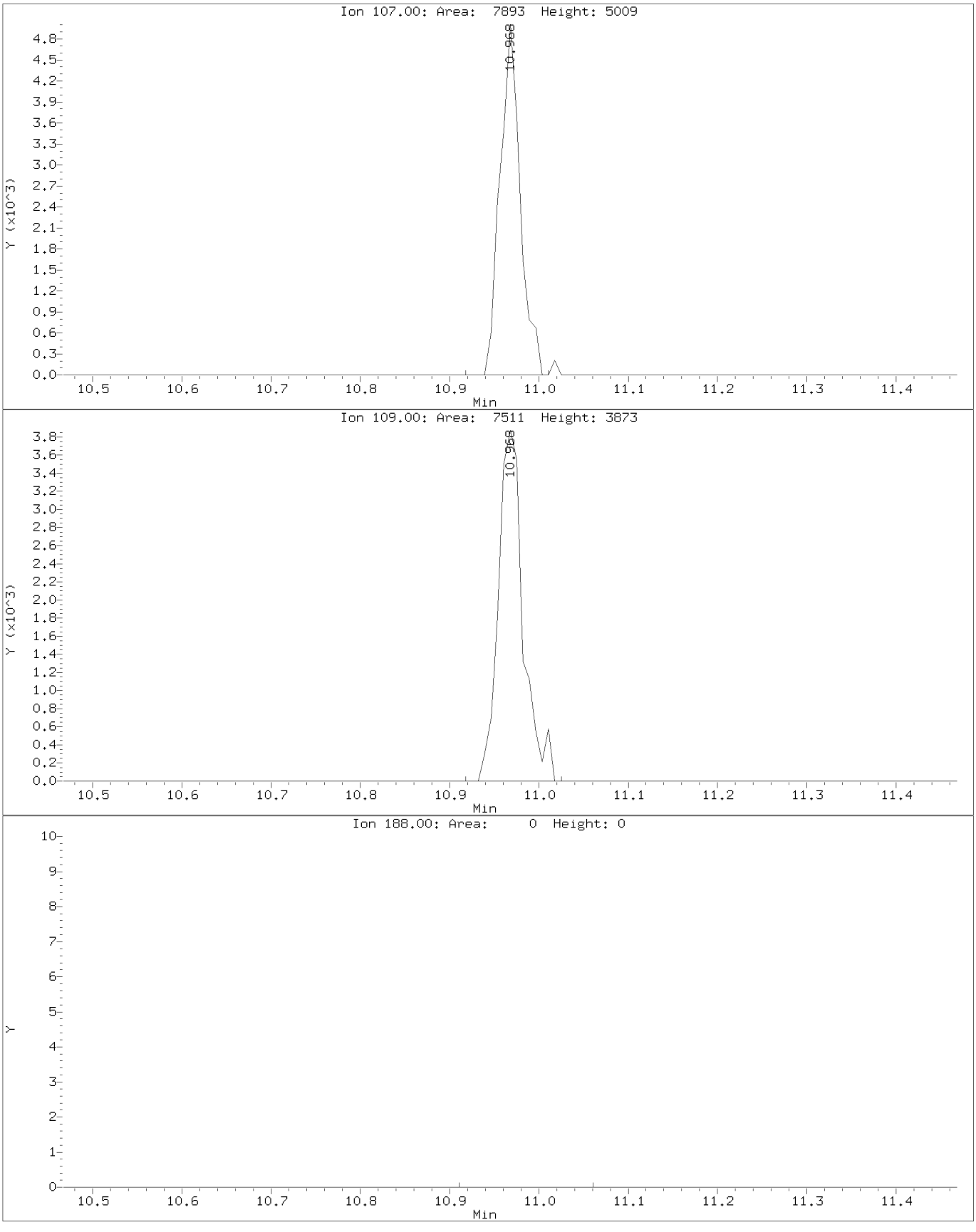
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: 1,2-Dibromoethane
CAS Number: 106-93-4



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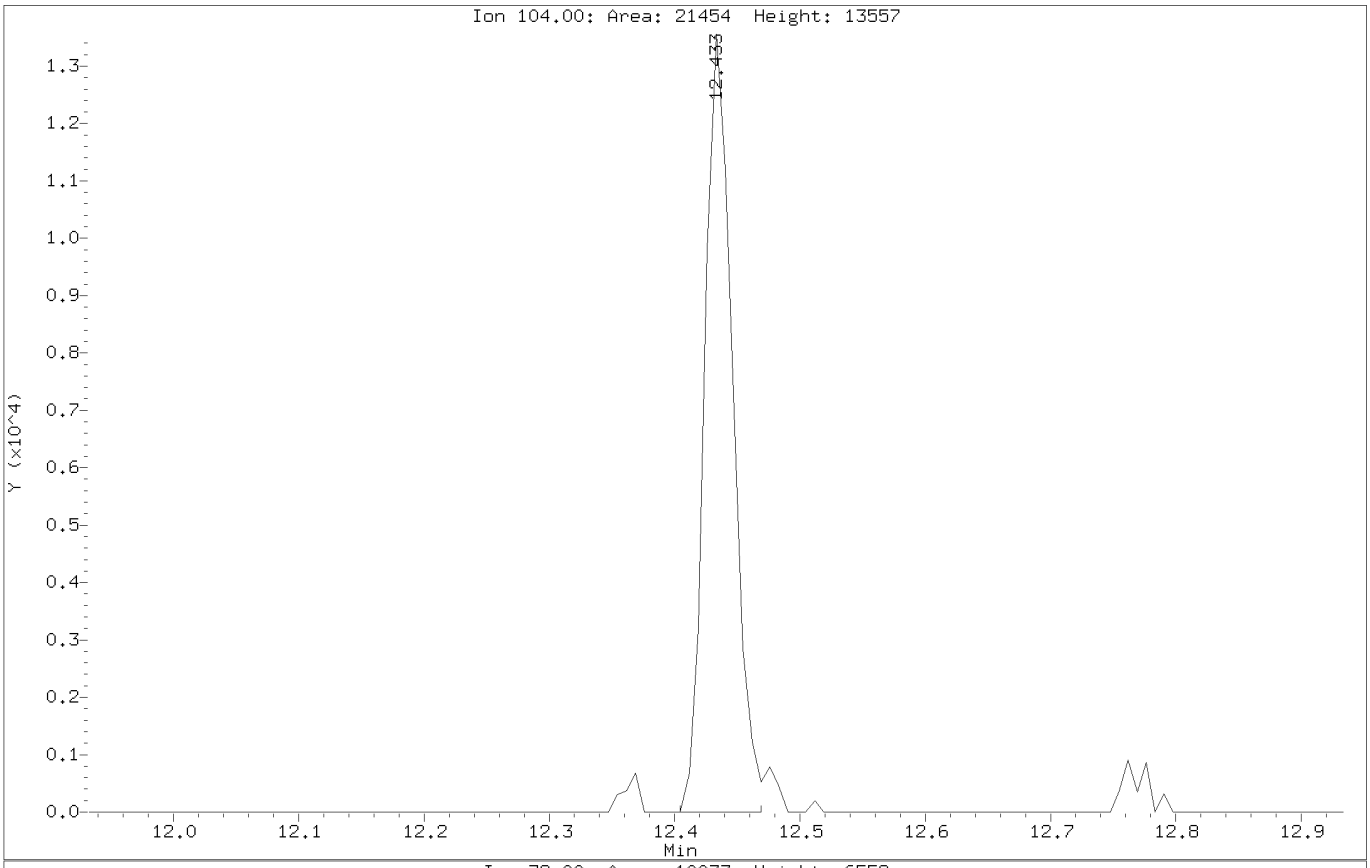
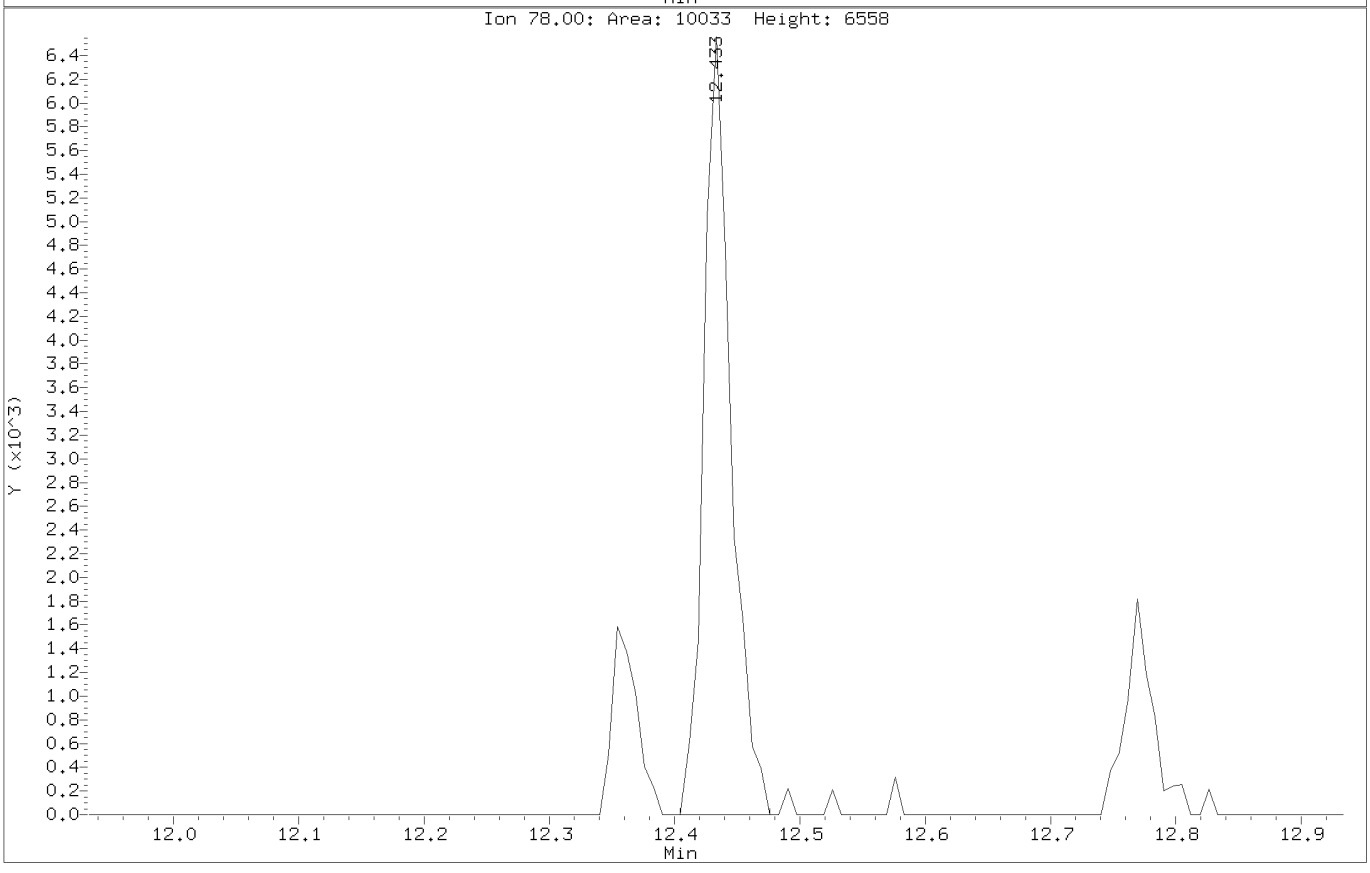
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

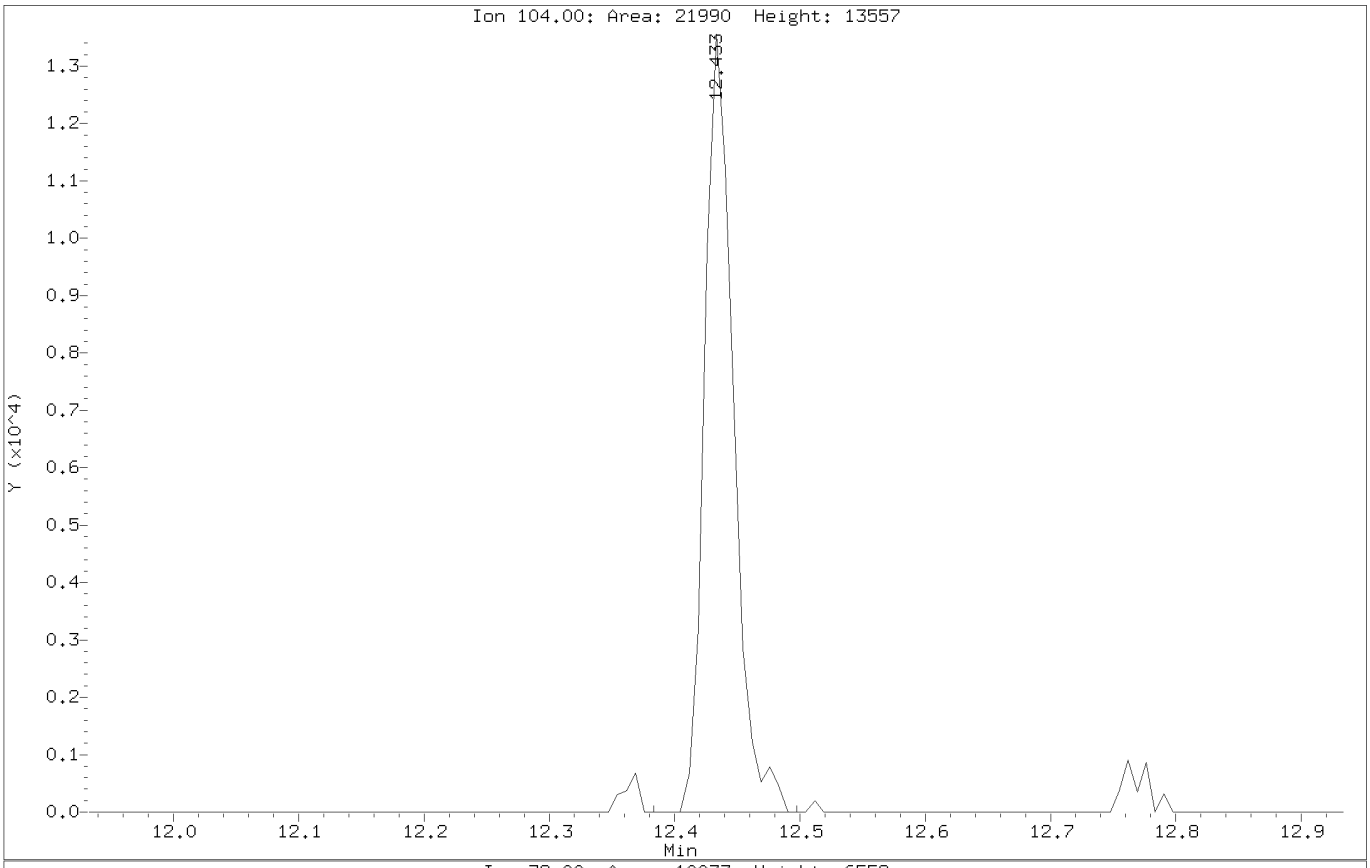
Compound: Styrene
CAS Number: 100-42-5

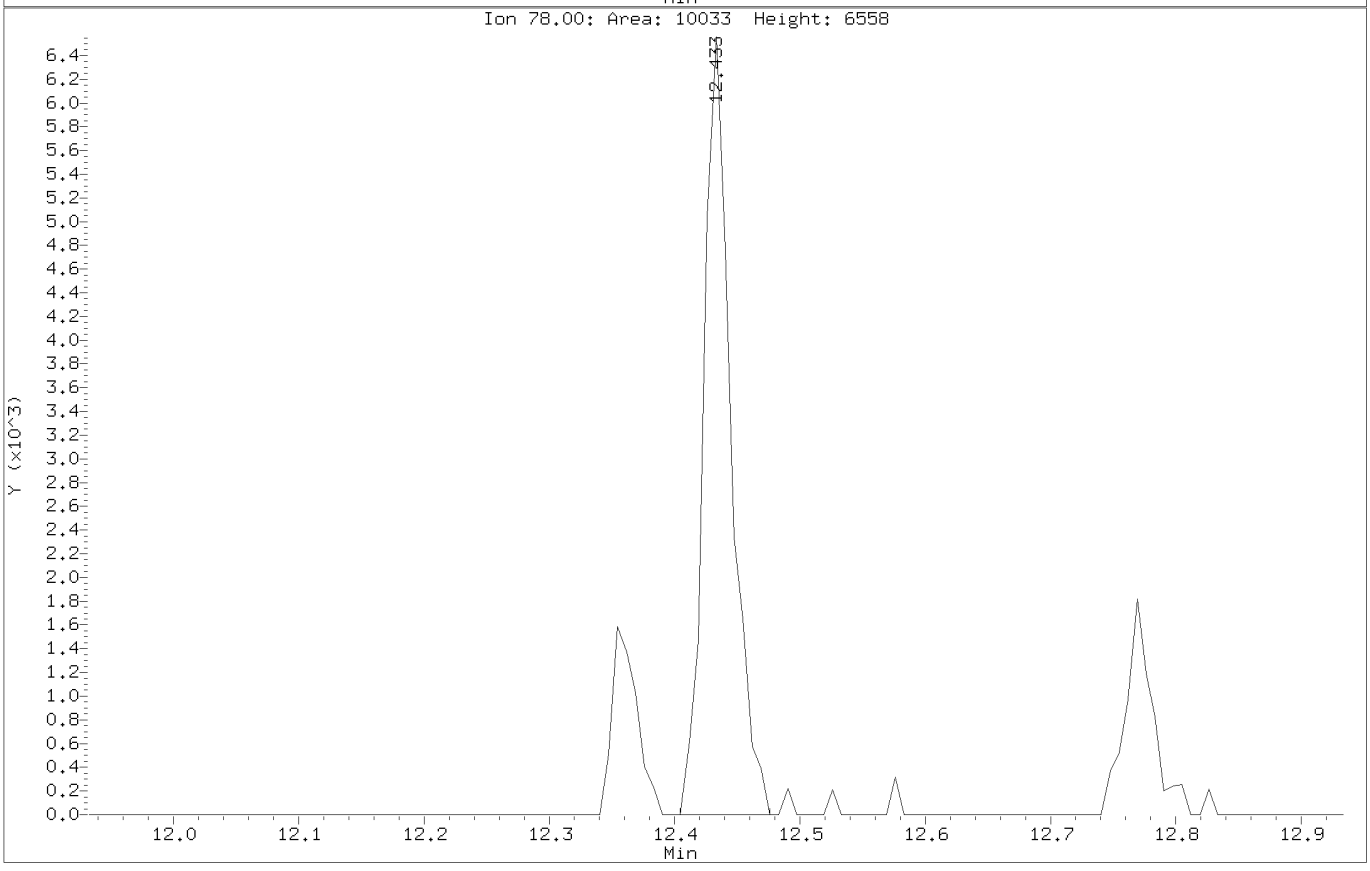




Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

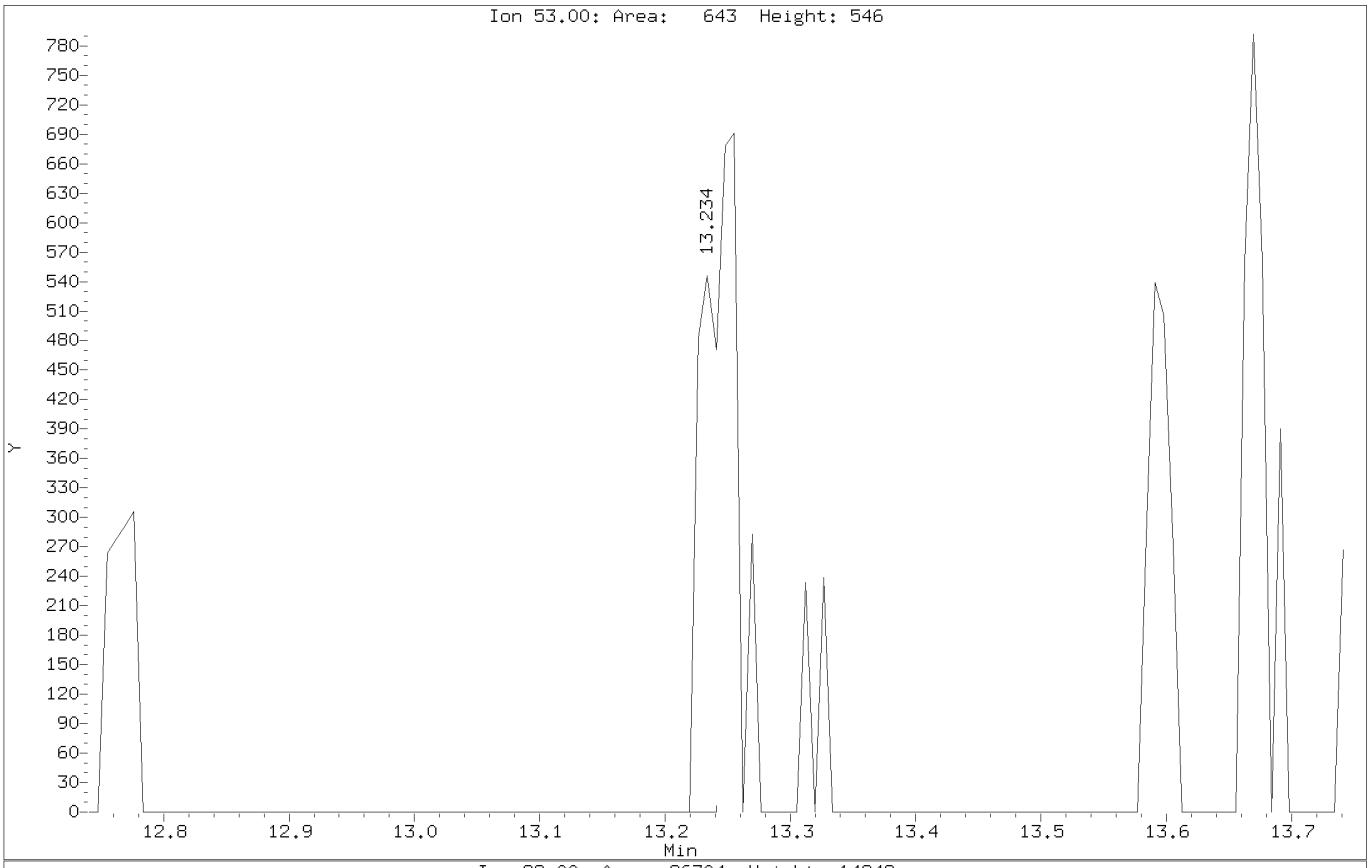
Compound: Styrene
CAS Number: 100-42-5

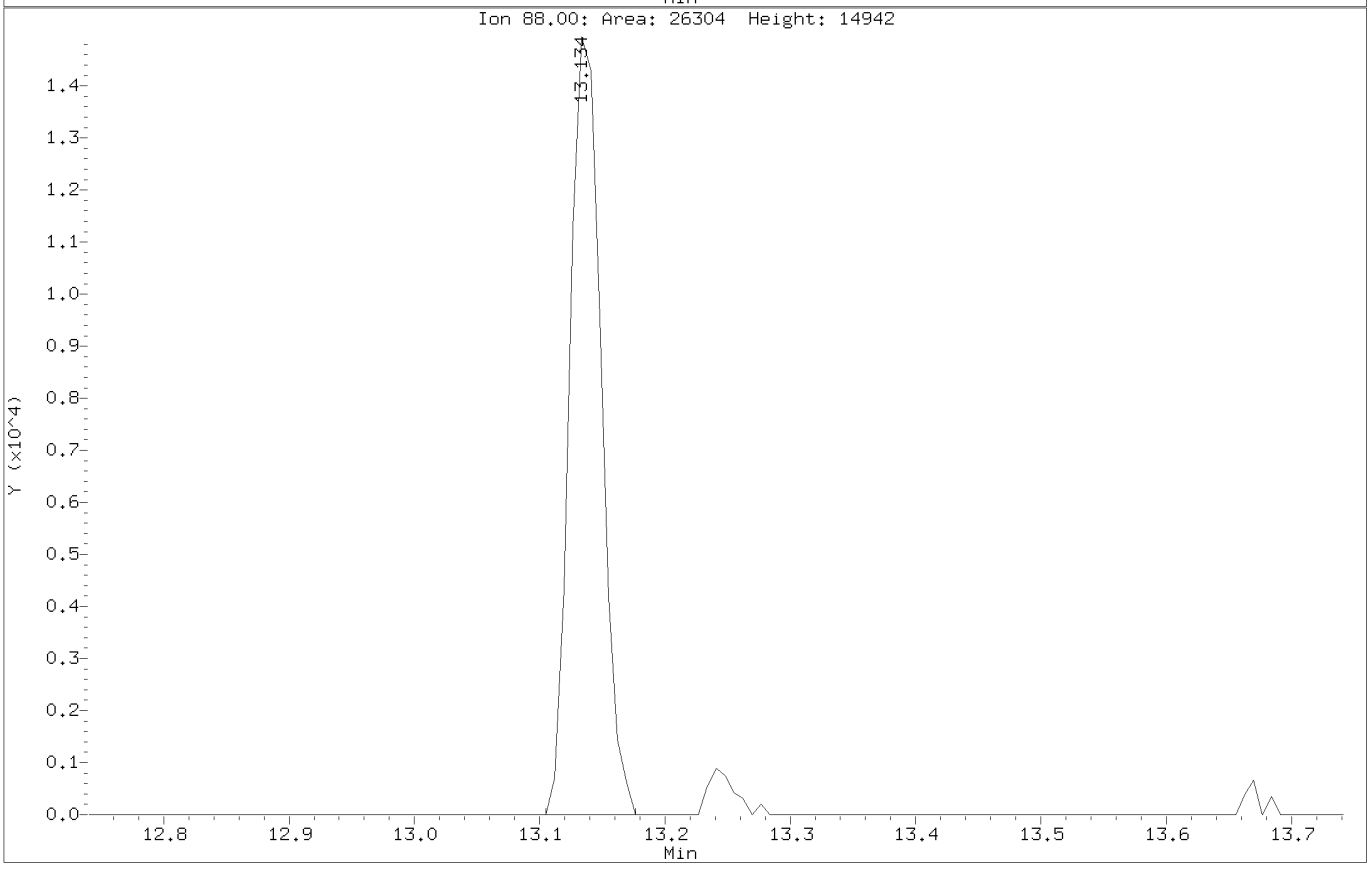




Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

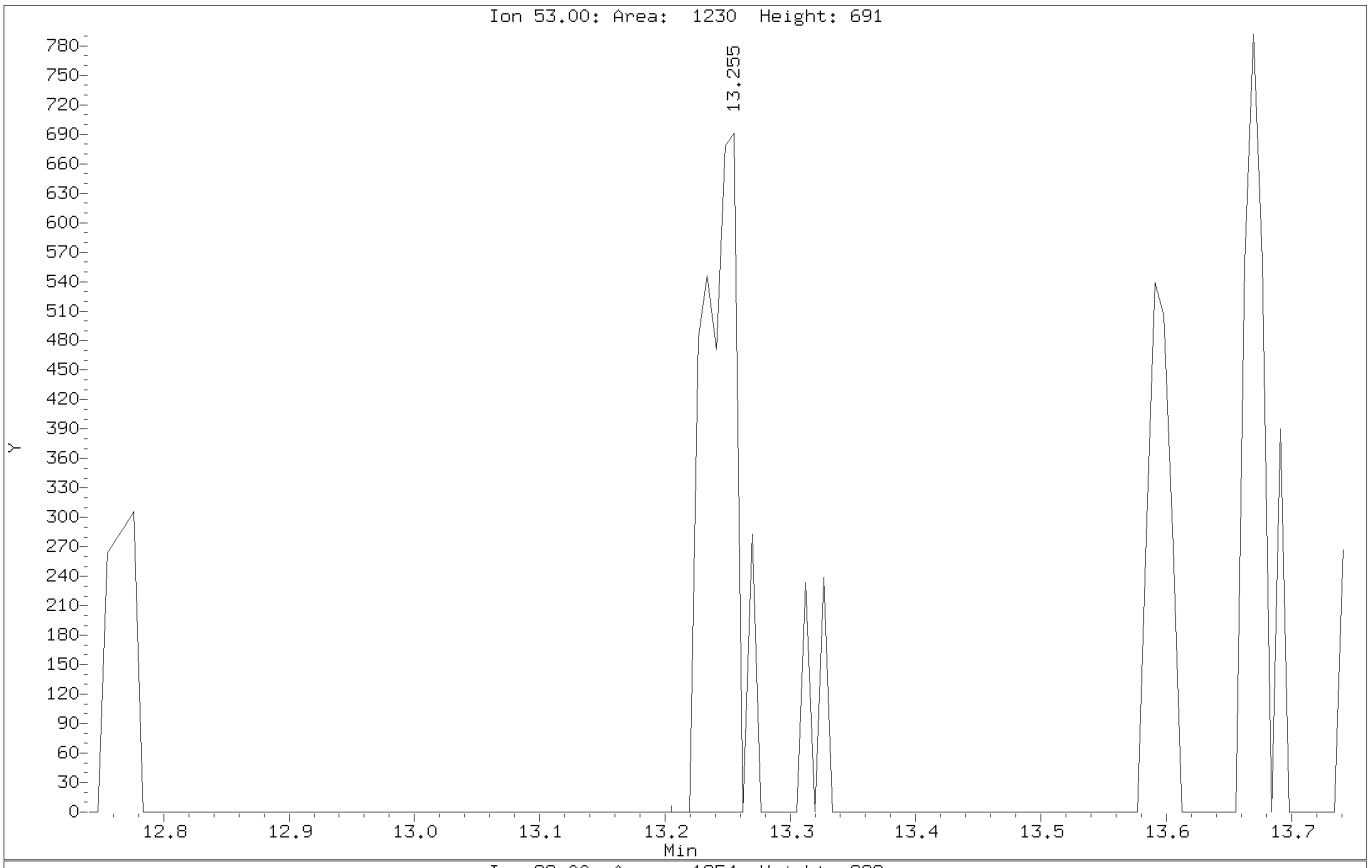
Compound: cis-1,4-Dichloro-2-Butene
CAS Number: 1476-11-5

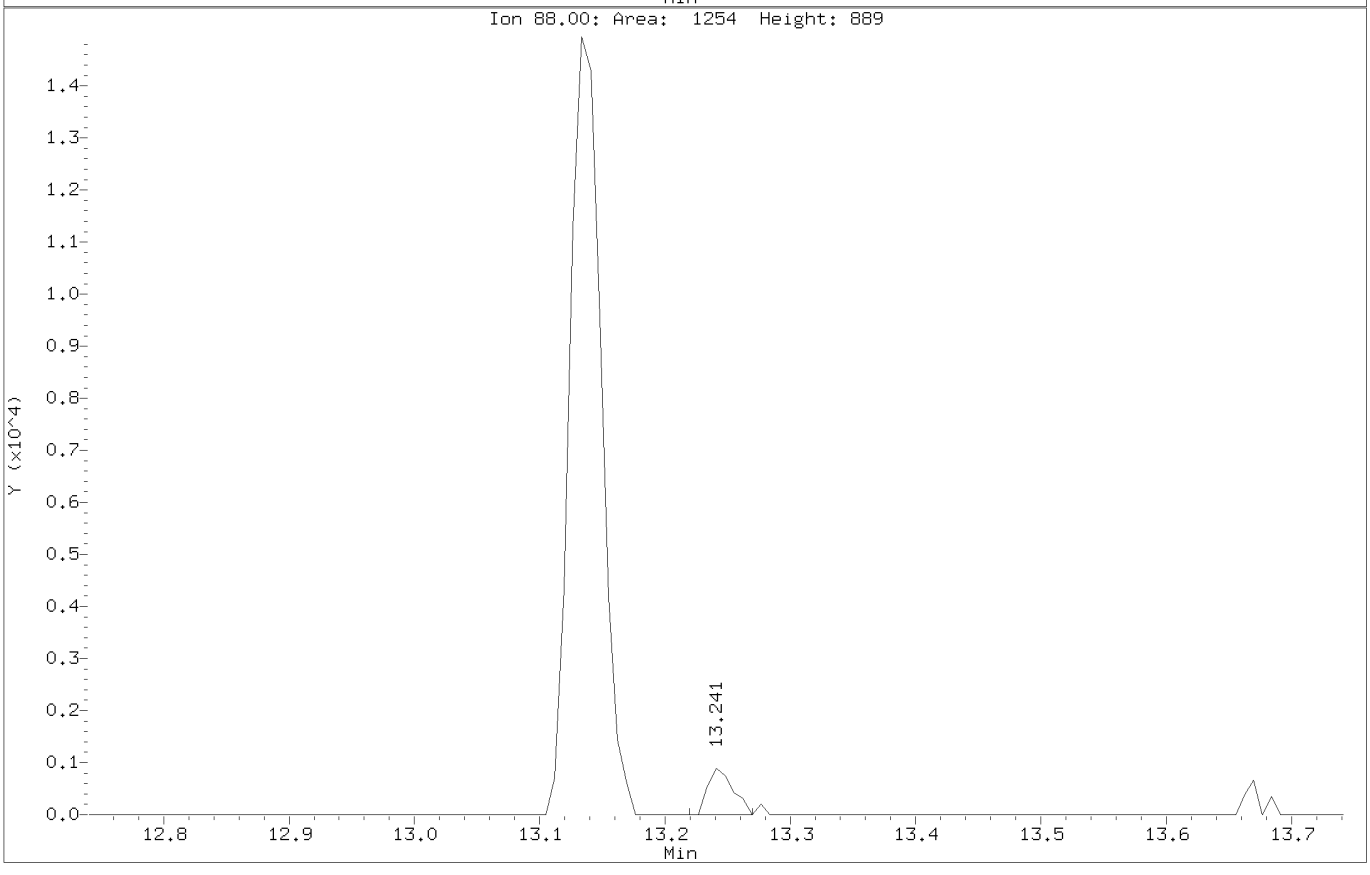




Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: cis-1,4-Dichloro-2-Butene
CAS Number: 1476-11-5





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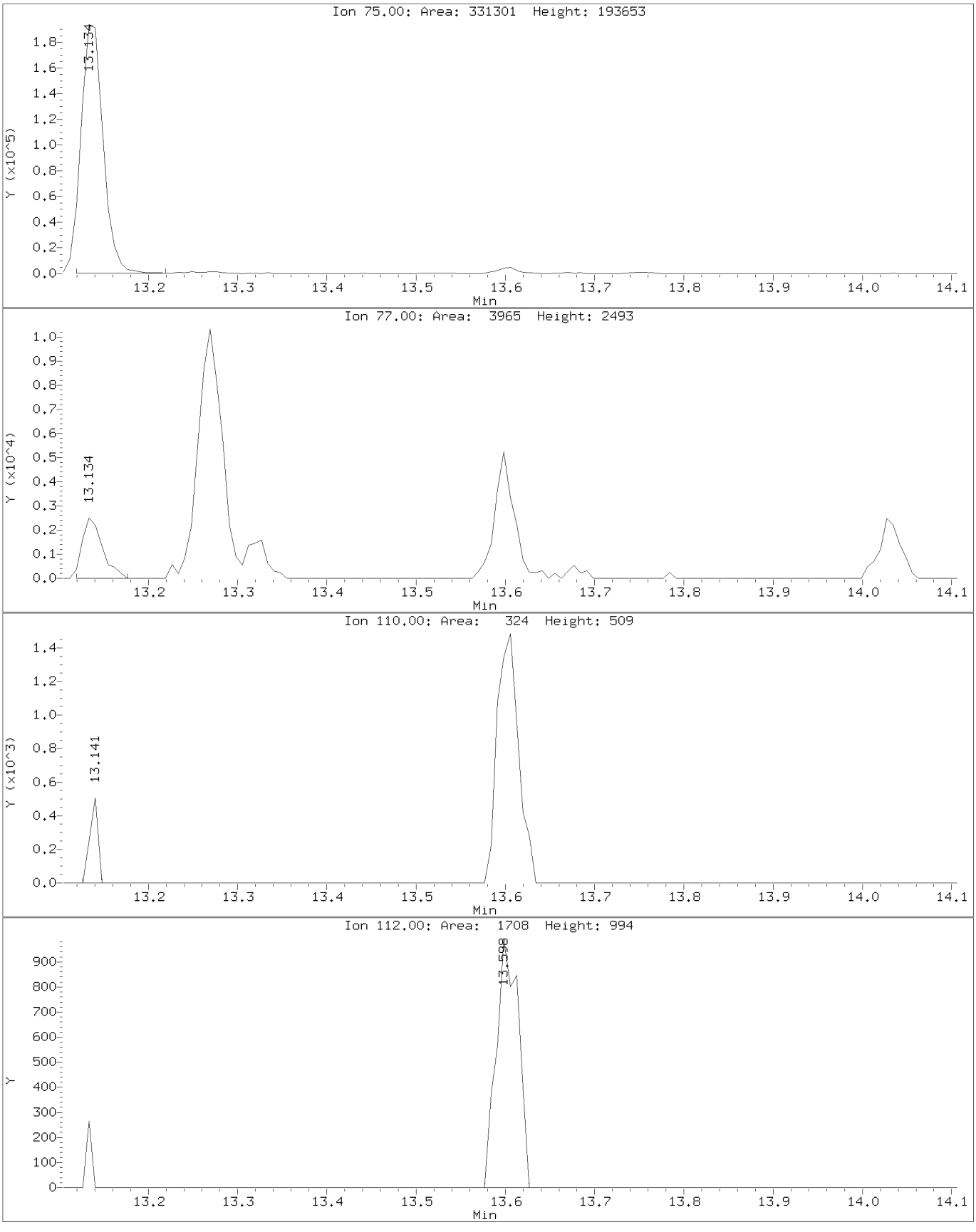
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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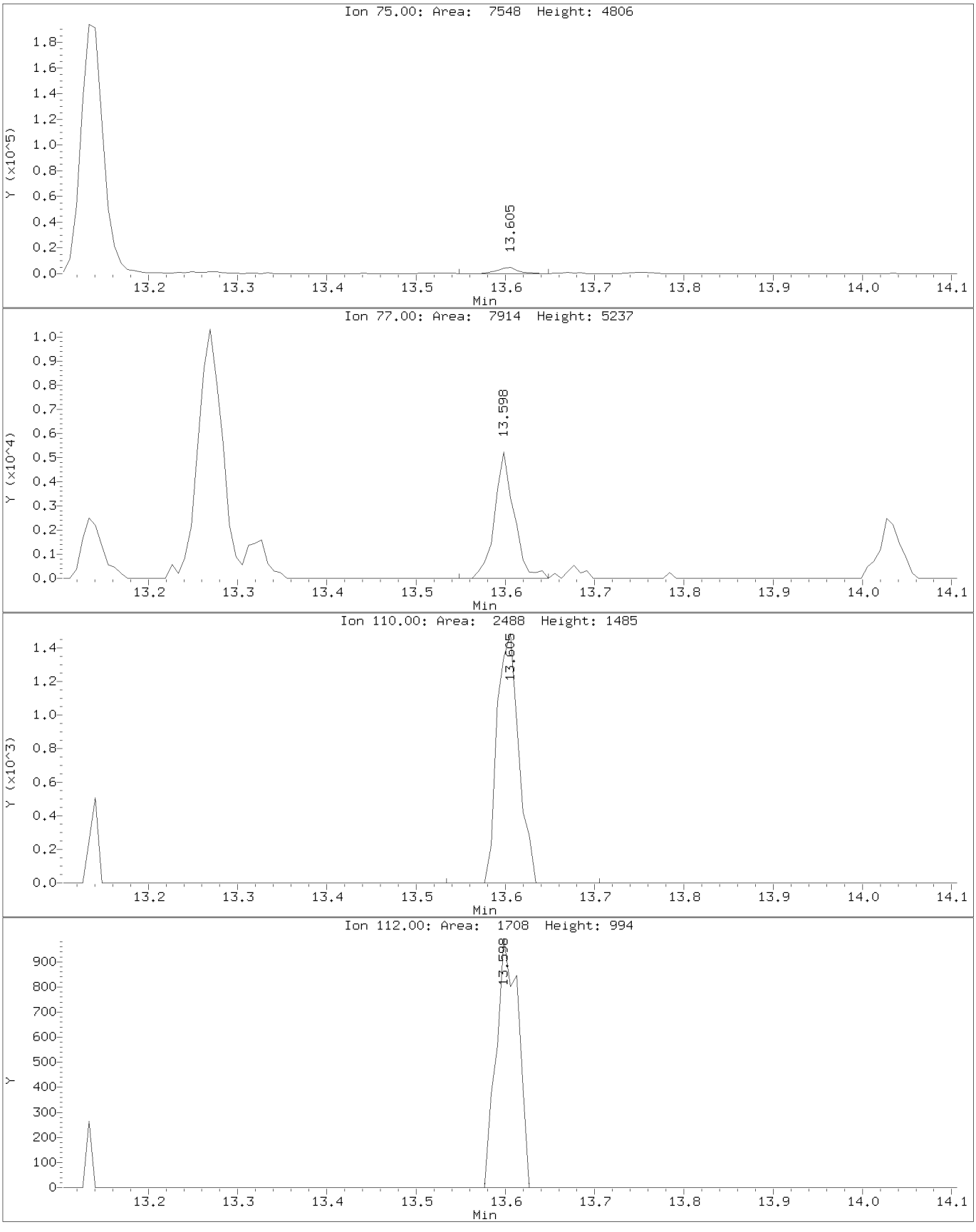
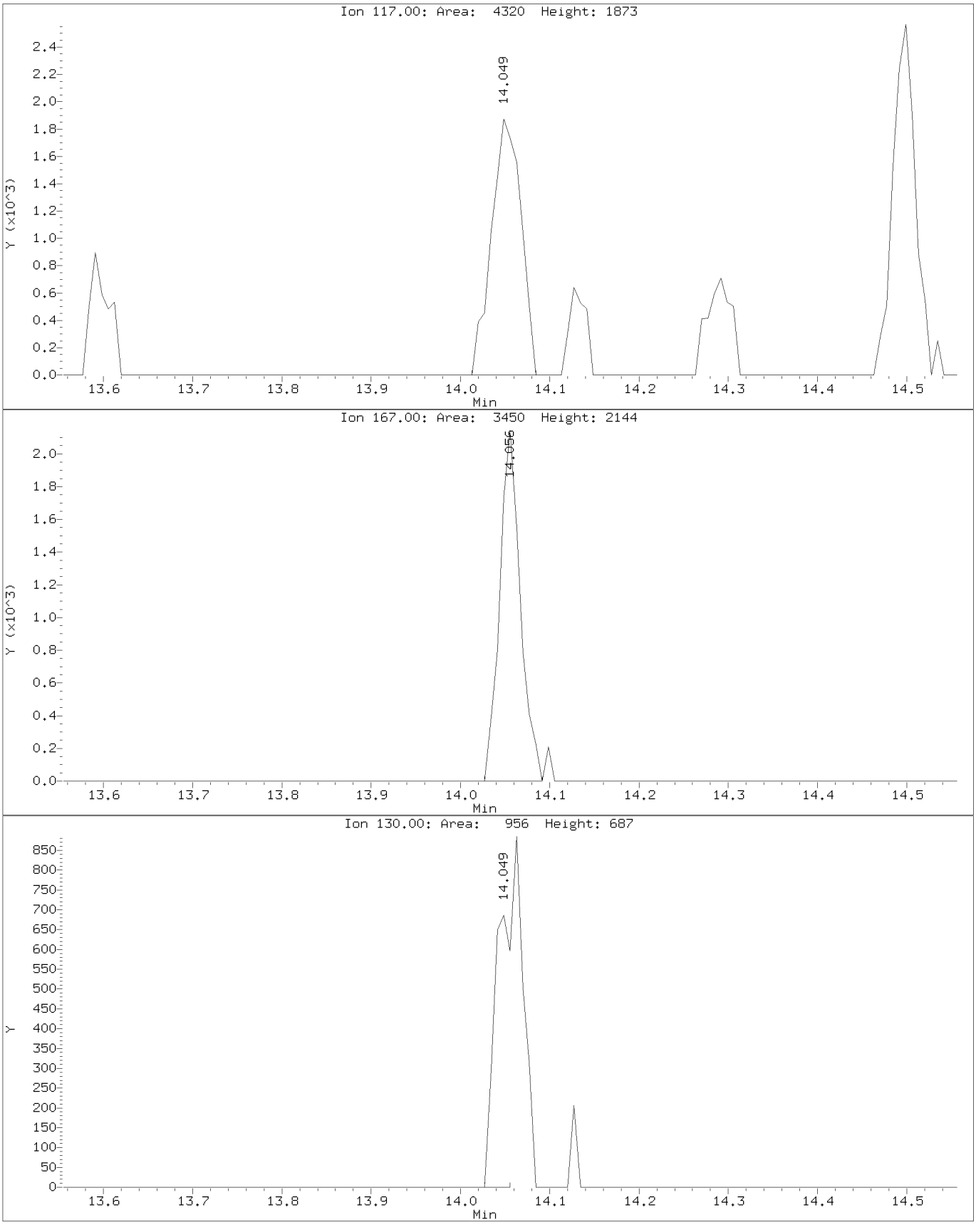
Instrument: gcms-c.i
Client Sample ID:

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



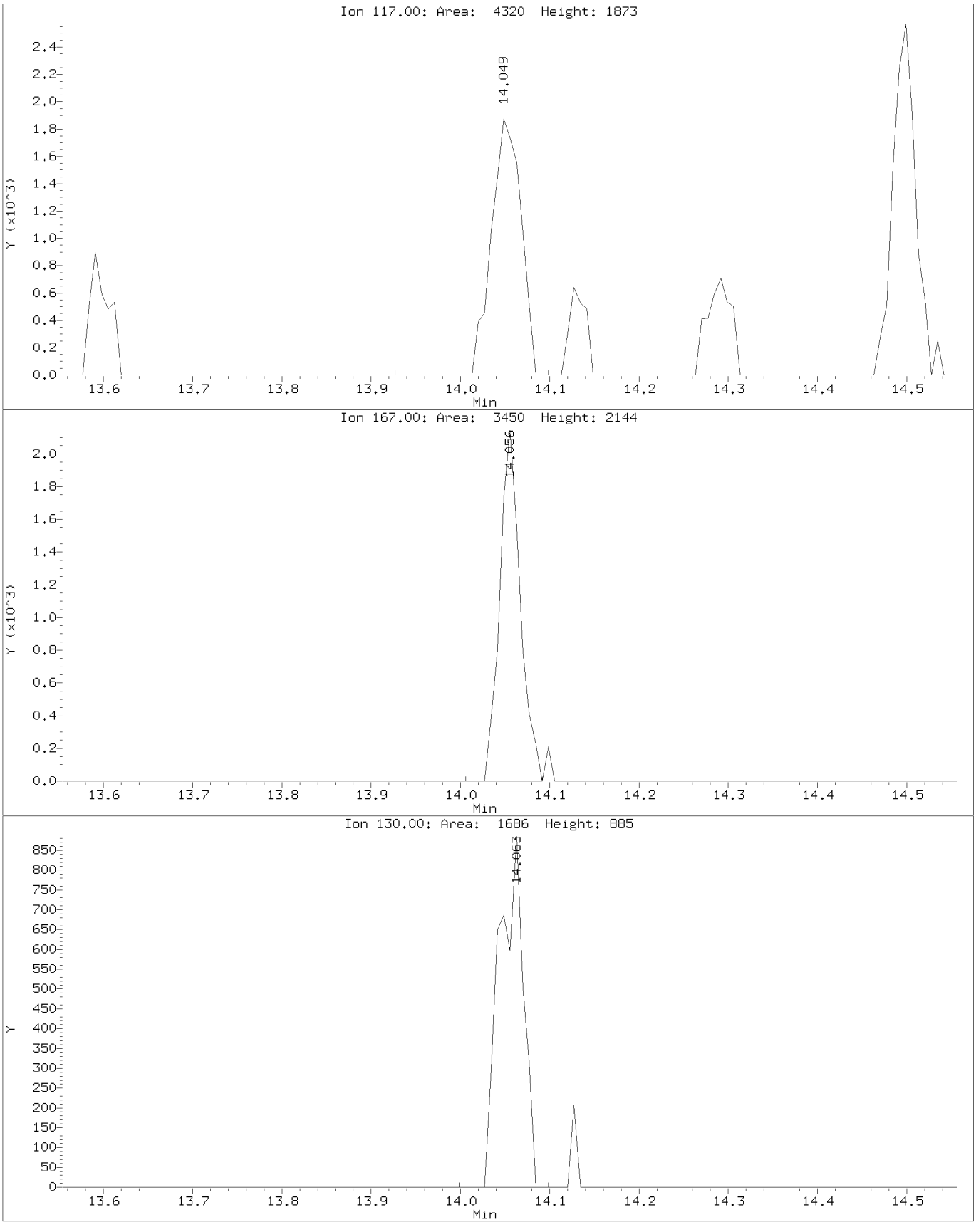
Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Pentachloroethane
CAS Number: 76-01-1



Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\C1276.D
Injection Date: 19-DEC-2016 12:05
Instrument: gcms-c.i
Client Sample ID:

Compound: Pentachloroethane
CAS Number: 76-01-1



Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Report Date: 30-Dec-2016 15:39

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG197007-4
Level: LOW Operator: TBJ
Data Type: MS DATA SampleType: LCS
SpikeList File: E624cc.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Misc Info: WG197007,WG197097-3,TJ0540-1

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
2 Chloromethane	20.0	18.8	93.98*	0-41
3 Vinyl chloride	20.0	19.7	98.50*	1-39
4 Bromomethane	20.0	16.8	83.91*	3-37
5 Chloroethane	20.0	22.2	110.94*	8-32
6 Trichlorofluoromet	20.0	19.6	97.85*	10-30
9 1,1-Dichloroethene	20.0	18.7	93.57*	10-30
14 Methylene Chloride	20.0	18.4	92.24*	12-28
17 trans-1,2-Dichloro	20.0	19.5	97.71*	14-26
25 1,1-Dichloroethane	20.0	19.8	99.23*	15-26
29 cis-1,2-Dichloroet	20.0	19.4	97.23	0-100
34 Chloroform	20.0	19.7	98.30*	14-27
38 1,1,1-Trichloroeth	20.0	19.3	96.55*	15-25
35 Carbon Tetrachlori	20.0	16.6	83.13*	15-25
41 Benzene	20.0	20.2	100.86*	13-27
47 1,2-Dichloroethane	20.0	19.6	98.14*	14-26
48 Trichloroethene	20.0	19.0	95.27*	13-27
51 1,2-Dichloropropan	20.0	19.4	96.81*	7-33
52 Bromodichlorometha	20.0	20.6	103.13*	13-27
56 2-Chloroethylvinyl	20.0	15.4	77.06*	0-45
53 cis-1,3-dichloropr	20.0	20.5	102.66*	5-35
57 Toluene	20.0	19.8	99.16*	15-25
60 trans-1,3-Dichloro	20.0	20.5	102.33*	10-30
61 1,1,2-Trichloroeth	20.0	20.0	100.26*	14-26
59 Tetrachloroethene	20.0	20.1	100.51*	15-25
62 Dibromochlorometha	20.0	20.1	100.40*	14-27
67 Chlorobenzene	20.0	20.0	100.25*	13-27
68 Ethylbenzene	20.0	19.6	98.02*	12-28
74 Bromoform	20.0	19.2	95.92*	14-26
81 1,1,2,2-Tetrachlor	20.0	19.9	99.43*	12-28
90 1,3-Dichlorobenzen	20.0	20.0	99.98*	15-25
92 1,4-Dichlorobenzen	20.0	19.8	99.19*	13-27
95 1,2-Dichlorobenzen	20.0	20.4	101.81*	13-27

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 37 Dibromofluorometha	50.0	50.1	100.22	68-128

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Report Date: 30-Dec-2016 15:39

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 45 1,2-Dichloroethane	50.0	50.4	100.86	67-135
$ 55 Toluene-D8	50.0	49.1	98.16	65-128
$ 76 P-Bromofluorobenze	50.0	48.8	97.66	56-133

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Report Date: 30-Dec-2016 15:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Lab Smp Id: WG197007-4
Inj Date : 20-DEC-2016 11:02 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197007-4,TJ0540
Misc Info : WG197007,WG197097-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Meth Date : 30-Dec-2016 15:05 elittlefie Quant Type: ISTD
Cal Date : 19-DEC-2016 14:03 Cal File: C1279A.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.710	1.710	(0.230)	160273	21.5588	21.6	
2	Chloromethane	50	1.910	1.910	(0.257)	154259	18.7967	18.8(R)	
3	Vinyl chloride	62	1.996	1.996	(0.268)	149756	19.7006	19.7(R)	
4	Bromomethane	94	2.339	2.346	(0.314)	78928	16.7826	16.8(R)	
5	Chloroethane	64	2.482	2.482	(0.334)	78395	22.1883	22.2(R)	
6	Trichlorofluoromethane	101	2.632	2.632	(0.354)	202471	19.5708	19.6(R)	
7	Diethyl Ether	59	2.997	2.997	(0.403)	91043	19.9532	20.0	
8	Tertiary-butyl alcohol	59	4.605	4.612	(0.619)	46651	92.3913	92.4	
9	1,1-Dichloroethene	96	3.218	3.219	(0.432)	161815	18.7148	18.7(R)	
10	Carbon Disulfide	76	3.247	3.247	(0.436)	397086	18.9010	18.9	
11	Freon-113	151	3.276	3.276	(0.440)	122942	19.3683	19.4	
12	Iodomethane	142	3.397	3.397	(0.456)	113793	17.9737	18.0	
13	Acrolein	56	3.662	3.662	(0.492)	68938	93.7338	93.7	
14	Methylene Chloride	84	3.990	3.990	(0.536)	195668	18.4473	18.4(R)	
15	Acetone	43	4.076	4.075	(0.548)	155275	106.743	107	
16	Isobutyl Alcohol	43	7.679	7.679	(1.032)	63733	395.037	395	
17	trans-1,2-Dichloroethene	96	4.219	4.219	(0.567)	167839	19.5428	19.5(R)	
18	Allyl Chloride	41	3.840	3.840	(0.516)	177691	20.2123	20.2	
19	Methyl tert-butyl ether	73	4.405	4.405	(0.592)	671291	39.1349	39.1	
20	Acetonitrile	39	4.784	4.798	(0.643)	13735	169.239	169	
21	Di-isopropyl ether	45	5.048	5.048	(0.678)	434413	19.8388	19.8	
22	Chloroprene	53	5.177	5.177	(0.696)	226612	19.6415	19.6	
23	Propionitrile	54	7.343	7.343	(0.987)	109178	210.761	211	

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Report Date: 30-Dec-2016 15:39

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.364	7.364	(0.989)	567827	210.706	211	
	25	1,1-Dichloroethane	63	5.220	5.220	(0.701)	290489	19.8455	19.8(R)	
	26	Acrylonitrile	52	5.320	5.320	(0.715)	132283	95.3689	95.4	
	27	Ethyl tertiary-butyl ether	59	5.656	5.663	(0.760)	348042	19.7333	19.7	
	28	Vinyl Acetate	43	5.684	5.685	(0.701)	206898	20.9537	21.0	
	29	cis-1,2-Dichloroethene	96	6.085	6.085	(0.818)	204411	19.4451	19.4	
M	30	1,2-Dichloroethylene (total)	96				372250	38.9879	39.0	
	31	Methyl Methacrylate	41	9.015	9.016	(1.111)	79444	19.9909	20.0	
	32	2,2-Dichloropropane	77	6.235	6.235	(0.838)	233453	19.1183	19.1	
	33	Bromochloromethane	128	6.371	6.371	(0.856)	84523	20.5316	20.5	
	34	Chloroform	83	6.506	6.507	(0.874)	336277	19.6603	19.7(R)	
	35	Carbon Tetrachloride	117	6.664	6.664	(0.821)	127876	16.6269	16.6(R)	
	36	Tetrahydrofuran	42	6.721	6.721	(0.903)	109225	101.358	101	
$	37	Dibromofluoromethane	113	6.764	6.764	(0.909)	472868	50.1101	50.1	
	38	1,1,1-Trichloroethane	97	6.764	6.764	(0.909)	282335	19.3109	19.3(R)	
	39	1,1-Dichloropropene	75	6.943	6.943	(0.856)	243748	19.9380	19.9	
	40	2-Butanone	43	6.957	6.957	(0.935)	182756	107.704	108	
	41	Benzene	78	7.286	7.286	(0.898)	665812	20.1716	20.2(R)	
*	42	Pentafluorobenzene	168	7.443	7.436	(1.000)	725749	50.0000		
	43	Cyclohexane	56	6.349	6.349	(0.853)	226983	18.8747	18.9	
	44	Ethyl Methacrylate	69	10.524	10.524	(1.297)	155637	20.7209	20.7	
$	45	1,2-Dichloroethane-D4	65	7.471	7.472	(1.004)	502375	50.4305	50.4	
	46	Tertiary-amyl methyl ether	73	7.471	7.479	(1.004)	296087	19.1260	19.1	
	47	1,2-Dichloroethane	62	7.557	7.557	(0.931)	215005	19.6279	19.6(R)	
	48	Trichloroethene	95	8.050	8.058	(0.992)	191226	19.0534	19.0(R)	
*	49	1,4-Difluorobenzene	114	8.115	8.115	(1.000)	1318791	50.0000		
	50	Dibromomethane	93	8.572	8.580	(1.056)	98628	18.7927	18.8	
	51	1,2-Dichloropropane	63	8.701	8.701	(1.072)	149089	19.3626	19.4(R)	
	52	Bromodichloromethane	83	8.794	8.794	(1.084)	252867	20.6252	20.6(R)	
	53	cis-1,3-dichloropropene	75	9.552	9.552	(1.177)	266267	20.5330	20.5(R)	
	54	1,4-Dioxane	88	9.051	9.051	(1.115)	42132	285.107	285	
$	55	Toluene-D8	98	9.766	9.766	(1.203)	1568499	49.0786	49.1	
	56	2-Chloroethylvinylether	63	9.509	9.509	(1.172)	12158	15.4127	15.4(R)	
	57	Toluene	92	9.823	9.823	(1.211)	431646	19.8324	19.8(R)	
	58	4-methyl-2-pentanone	43	10.281	10.288	(1.267)	399573	109.477	109	
	59	Tetrachloroethene	164	10.259	10.259	(0.886)	140882	20.1013	20.1(R)	
	60	trans-1,3-Dichloropropene	75	10.316	10.316	(1.271)	220231	20.4661	20.5(R)	
	61	1,1,2-Trichloroethane	83	10.502	10.502	(1.294)	122242	20.0516	20.0(R)	
	62	Dibromochloromethane	129	10.702	10.702	(0.924)	167016	20.0805	20.1(R)	
	63	1,3-Dichloropropane	76	10.810	10.810	(0.933)	266468	20.3075	20.3	
	64	1,2-Dibromoethane	107	10.967	10.967	(1.351)	147295	19.3174	19.3	
	65	2-Hexanone	43	11.260	11.260	(0.972)	274976	107.582	108	
*	66	Chlorobenzene-D5	117	11.582	11.582	(1.000)	1276004	50.0000		
	67	Chlorobenzene	112	11.603	11.603	(1.002)	484464	20.0500	20.0(R)	
	152	1-Chlorohexane	91	11.589	11.589	(1.557)	264963	18.3491	18.3	
	68	Ethylbenzene	106	11.646	11.639	(1.006)	257693	19.6033	19.6(R)	
	69	1,1,1,2-Tetrachloroethane	131	11.682	11.682	(1.009)	160533	20.1531	20.2	
M	70	Xylenes (total)	106				941893	61.0926	61.1	
	71	m+p-Xylenes	106	11.825	11.825	(1.021)	628437	40.8743	40.9	
	72	o-Xylene	106	12.361	12.361	(1.067)	313456	20.2183	20.2	
	73	Styrene	104	12.432	12.432	(1.073)	523655	20.6052	20.6	
	74	Bromoform	173	12.454	12.461	(1.075)	93404	19.1843	19.2(R)	
	75	Isopropylbenzene	105	12.768	12.768	(0.869)	841931	21.2494	21.2	
$	76	P-Bromofluorobenzene	95	13.140	13.133	(1.619)	739198	48.8299	48.8	

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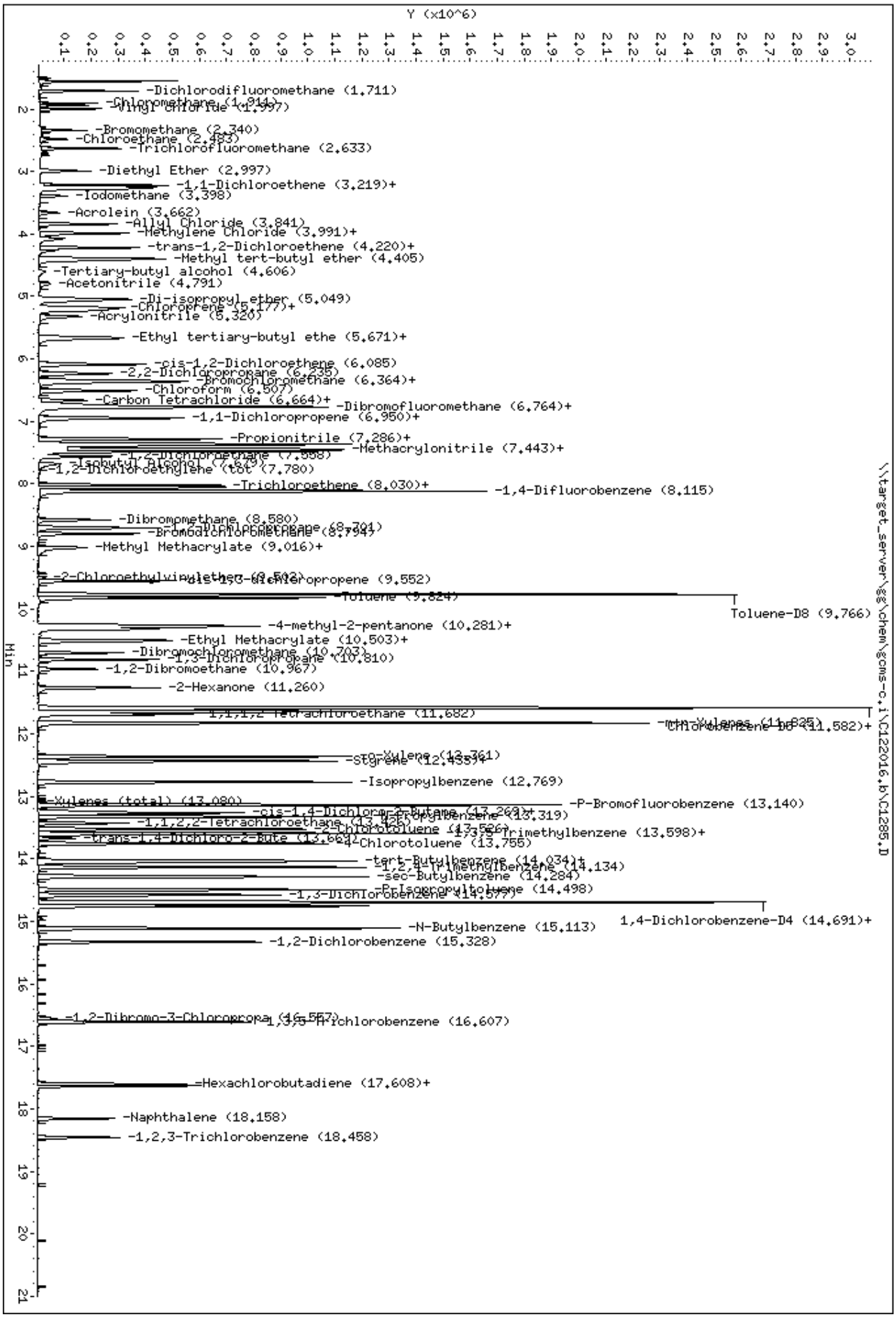
1000076

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Report Date: 30-Dec-2016 15:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	13.240	13.240	(0.901)	37206	19.3026	19.3	
78	trans-1,4-Dichloro-2-Butene	53	13.669	13.669	(0.930)	27571	19.7326	19.7	
79	Bromobenzene	156	13.268	13.269	(0.903)	219975	20.2626	20.3	
80	N-Propylbenzene	91	13.319	13.319	(0.907)	1040697	21.2378	21.2	
81	1,1,2,2-Tetrachloroethane	83	13.426	13.426	(0.914)	184966	19.8865	19.9(R)	
82	1,3,5-Trimethylbenzene	105	13.597	13.597	(0.926)	750196	21.6299	21.6	
83	2-Chlorotoluene	91	13.526	13.526	(0.921)	643550	20.9455	20.9	
84	1,2,3-Trichloropropane	75	13.597	13.597	(0.926)	135825	19.9467	19.9	
85	4-Chlorotoluene	91	13.755	13.755	(0.936)	691193	20.8117	20.8	
86	tert-Butylbenzene	119	14.033	14.033	(0.955)	680232	20.9261	20.9	
87	Pentachloroethane	117	14.055	14.055	(0.957)	128923	20.4888	20.5	
88	1,2,4-Trimethylbenzene	105	14.133	14.134	(0.962)	728228	20.9739	21.0	
89	P-Isopropyltoluene	119	14.498	14.498	(0.987)	769203	21.0810	21.1	
90	1,3-Dichlorobenzene	146	14.584	14.577	(0.993)	400092	19.9956	20.0(R)	
* 91	1,4-Dichlorobenzene-D4	152	14.691	14.691	(1.000)	704165	50.0000		
92	1,4-Dichlorobenzene	146	14.712	14.712	(1.001)	401982	19.8374	19.8(R)	
93	N-Butylbenzene	91	15.113	15.113	(1.029)	814105	21.5770	21.6	
94	sec-Butylbenzene	105	14.284	14.284	(0.972)	947753	21.0124	21.0	
95	1,2-Dichlorobenzene	146	15.327	15.327	(1.043)	367347	20.3611	20.4(R)	
96	1,2-Dibromo-3-Chloropropane	75	16.557	16.556	(1.127)	19888	16.6143	16.6	
97	1,3,5-Trichlorobenzene	180	16.607	16.607	(1.130)	267108	20.1380	20.1	
98	Hexachlorobutadiene	225	17.607	17.607	(1.199)	109215	17.9262	17.9	
99	1,2,4-Trichlorobenzene	180	17.629	17.636	(1.200)	175444	19.1227	19.1	
100	1,2,3-Trimethylbenzene	105	14.755	14.755	(1.004)	749127	20.8040	20.8	
101	Naphthalene	128	18.158	18.158	(1.236)	231456	20.1902	20.2	
102	1,2,3-Trichlorobenzene	180	18.458	18.458	(1.256)	97550	18.3604	18.4	
103	Methyl Acetate	43	4.269	4.269	(0.574)	73792	19.5648	19.6	
104	Methylcyclohexane	83	8.022	8.022	(1.078)	322548	20.1640	20.2	
M 153	Total Alkylbenzenes	100				6572345	169.687	170	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Y (x10^6)
Min
-Dichlorodifluoromethane (1.711)
-Chloromethane (1.914)
-Vinyl chloride (1.997)
-Bromomethane (2.340)
-Chloroethane (2.483)
-Trichlorofluoromethane (2.633)
-Diethyl Ether (2.997)
-1,1-Dichloroethene (3.219)+
-Iodomethane (3.398)
-Acrolein (3.662)
-Allyl Chloride (3.841)
-Methylene Chloride (3.991)+
-trans-1,2-Dichloroethene (4.220)+
-Methyl tert-butyl ether (4.405)
-Tertiary-butyl alcohol (4.606)
-Acetonitrile (4.791)
-Di-isopropyl ether (5.049)
-Chloroprene (5.177)+
-Acrylonitrile (5.320)
-Ethyl tertiary-butyl ethe (5.671)+
-cis-1,2-Dichloroethene (6.085)
-2,2-Dichloropropane (6.235)
-Bromochloromethane (6.364)+
-Chloroform (6.507)
-Carbon Tetrachloride (6.664)+
-Dibromofluoromethane (6.764)+
-1,1-Dichloropropene (6.950)+
-Propionitrile (7.286)+
-Methacrylonitrile (7.443)+
-1,2-Dichloroethane (7.588)
-Isobutyl Alcohol (7.649)
-1,2-Trichloroethylene (tot (7.780)
-Trichloroethene (8.030)+
-1,4-Difluorobenzene (8.115)
-Dibrompmethane (8.580)
-1,1,2-Trichloropropane (8.701)
-Bromodichloromethane (8.794)
-Methyl Methacrylate (9.016)+
-2-Chloroethylvinylether (9.502)
-cis-1,3-Dichloropropene (9.552)
-Toluene (9.824)
Toluene-D8 (9.766)
-4-methyl-2-pentanone (10.281)+
-Ethyl Methacrylate (10.503)+
-Dibromochloromethane (10.703)
-1,3-Dichloropropane (10.810)
-1,2-Dibromoethane (10.967)
-2-Hexanone (11.260)
-1,1,1,2-Tetrachloroethane (11.682)
-m,p-Xylenes (11.825)
Chlorobenzene-D5 (11.582)+
-o-Xylene (12.361)
-Styrene (12.435)+
-Isopropylbenzene (12.769)
-Xylenes (total) (13.080)
-P-Bromofluorobenzene (13.140)
-cis-1,4-Dichloro-2-Butene (13.269)+
-n-Propylbenzene (13.319)
-1,1,2,2-Tetrachloroethane (13.426)
-2-Chlorotoluene (13.566)
-1,3,5-Trimethylbenzene (13.598)+
-trans-1,4-Dichloro-2-Bute (13.664)+
-4-Chlorotoluene (13.755)
-tert-Butylbenzene (14.034)+
-1,2,4-Trimethylbenzene (14.134)
-sec-Butylbenzene (14.284)
-P-Isopropyltoluene (14.498)
-1,3-Dichlorobenzene (14.577)
1,4-Dichlorobenzene-D4 (14.691)+
-N-Butylbenzene (15.113)
-1,2-Dichlorobenzene (15.328)
-1,2-Dibromo-3-Chloroprop (16.557)
-1,3,5-Trichlorobenzene (16.607)
-Hexachlorobutadiene (17.608)+
-Naphthalene (18.158)
-1,2,3-Trichlorobenzene (18.458)
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Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1285.D
Date : 20-DEC-2016 11:02
Client ID:
Sample Info: WG197007-4,TJO540
Instrument: gcms-c.i

Data File: \\target_server\gg\chem\gcms-c.i\C121916.b\CB505.D Page 2

Date : 19-DEC-2016 10:01

Client ID:

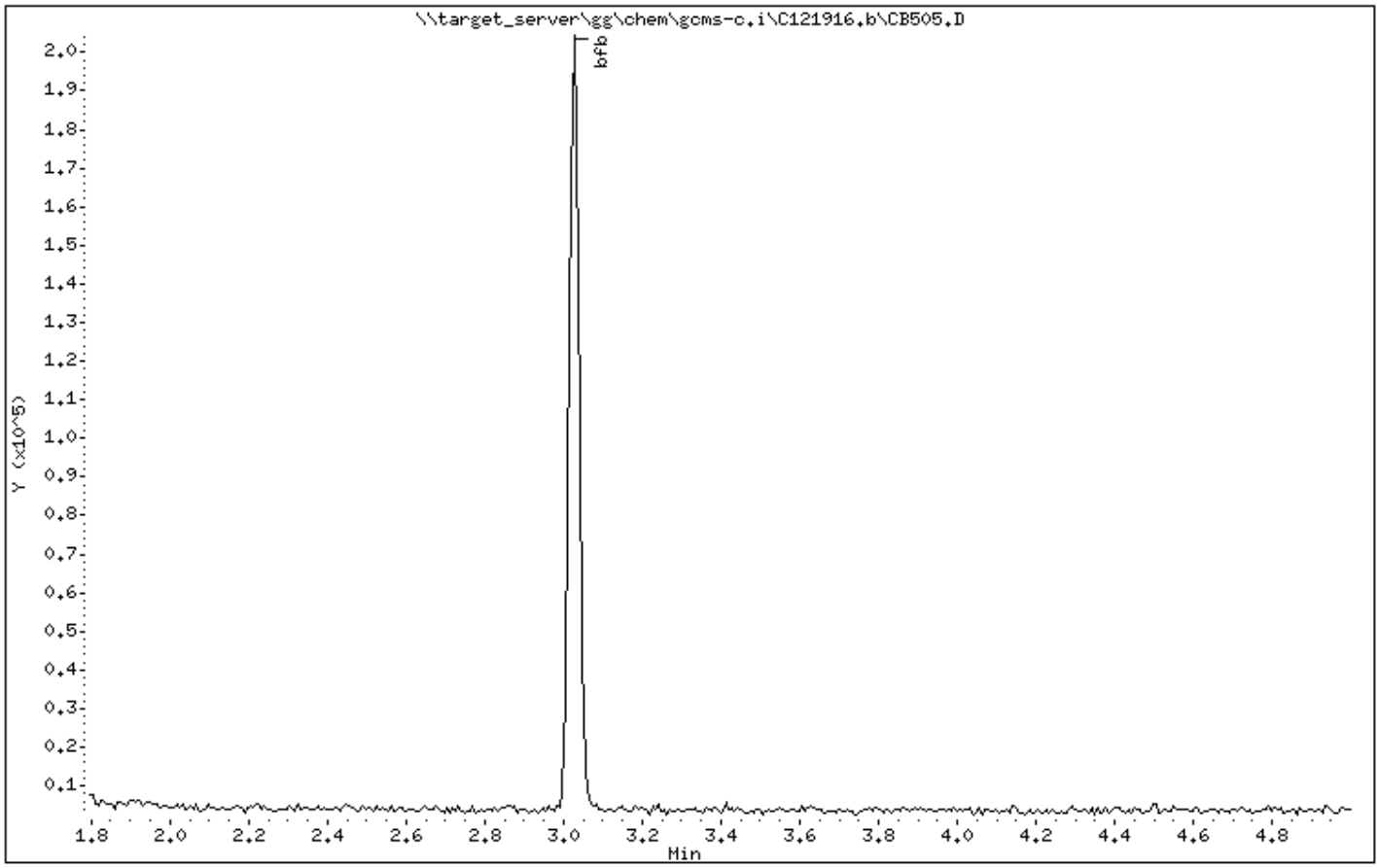
Instrument: gcms-c.i

Sample Info: WG197097-7,TJ0540

Operator: TBJ

Column phase: RTX-VMS

Column diameter: 0.18



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Date : 19-DEC-2016 10:01

Client ID:

Instrument: gcms-c.i

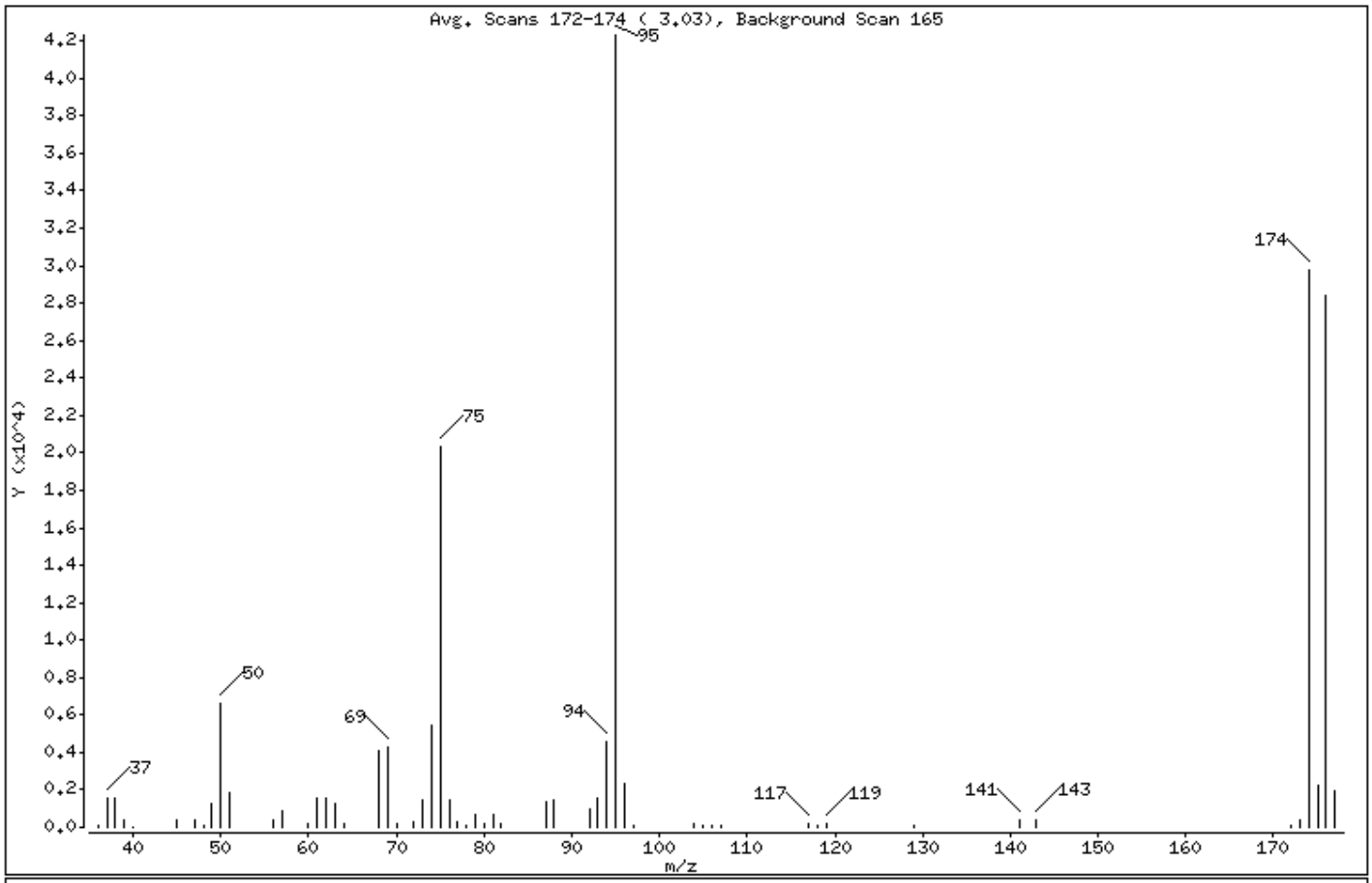
Sample Info: WG197097-7,TJ0540

Operator: TBJ

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.72
75	30.00 - 60.00% of mass 95	48.16
96	5.00 - 9.00% of mass 95	5.54
173	Less than 2.00% of mass 174	0.90 (1.28)
174	Greater than 50.00% of mass 95	70.28
175	5.00 - 9.00% of mass 174	5.32 (7.57)
176	95.00 - 101.00% of mass 174	67.23 (95.67)
177	5.00 - 9.00% of mass 176	4.61 (6.86)

Date : 19-DEC-2016 10:01

Client ID: Instrument: gcms-c.i

Sample Info: WG197097-7,TJ0540

Operator: TBJ

Column phase: RTX-VMS Column diameter: 0.18

Data File: CB505.D
Spectrum: Avg. Scans 172-174 (3.03), Background Scan 165
Location of Maximum: 95.00
Number of points: 56

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	82	62.00	1562	81.00	635	118.00	101
37.00	1570	63.00	1282	82.00	176	119.00	181
38.00	1512	64.00	184	87.00	1363	129.00	69
39.00	424	68.00	4073	88.00	1415	141.00	366
40.00	47	69.00	4276	92.00	1010	143.00	352
45.00	415	70.00	242	93.00	1552	172.00	73
47.00	366	72.00	263	94.00	4611	173.00	382
48.00	72	73.00	1432	95.00	42312	174.00	29736
49.00	1220	74.00	5410	96.00	2342	175.00	2250
50.00	6650	75.00	20376	97.00	69	176.00	28448
51.00	1854	76.00	1498	104.00	176	177.00	1951
56.00	434	77.00	294	105.00	88		
57.00	870	78.00	93	106.00	81		
60.00	233	79.00	729	107.00	81		
61.00	1573	80.00	232	117.00	158		

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\CB506.D Page 2

Date : 20-DEC-2016 10:05

Client ID:

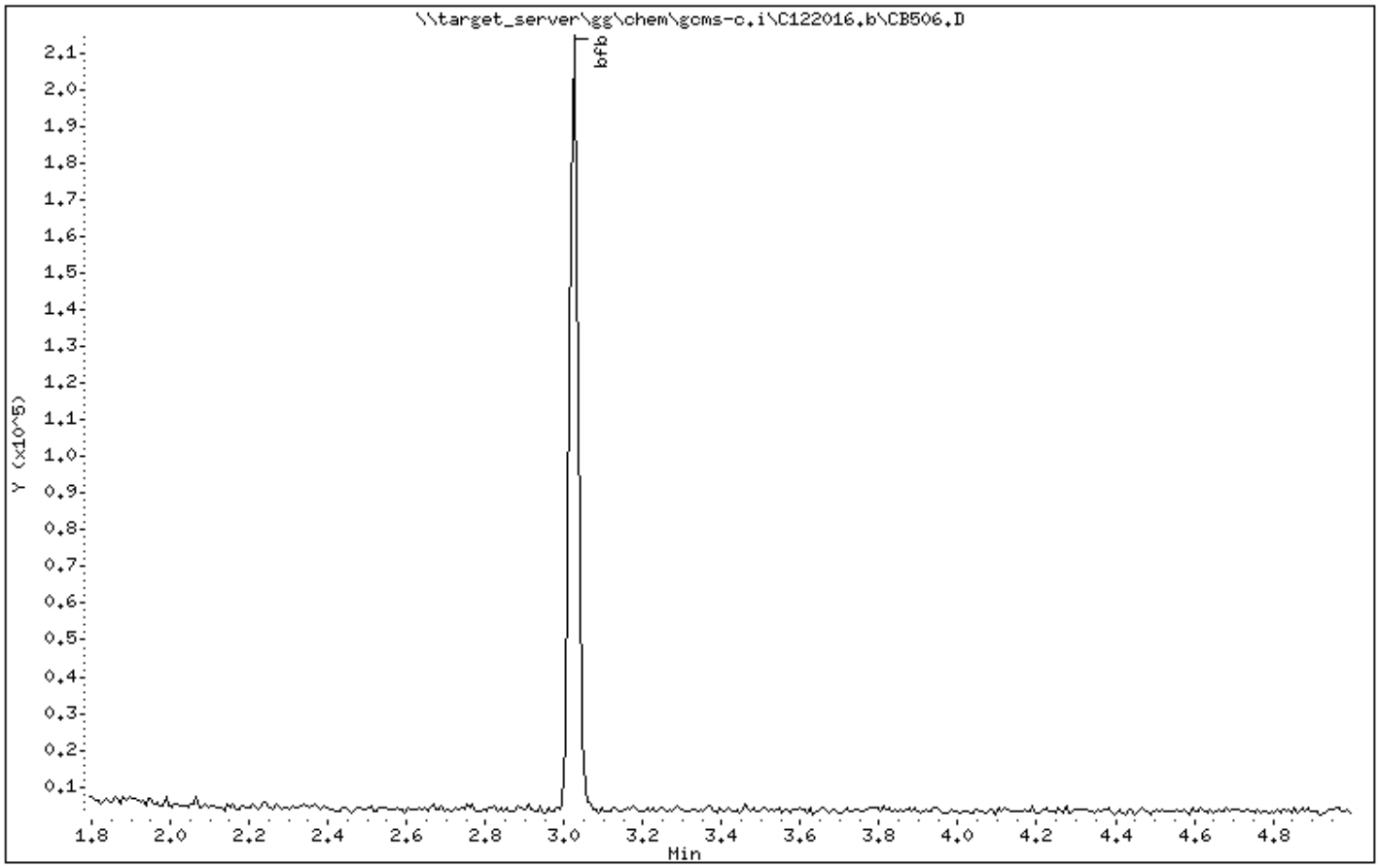
Instrument: gcms-c.i

Sample Info: WG197007-3,TJ0540

Operator: TBJ

Column phase: RTX-VMS

Column diameter: 0.18



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Date : 20-DEC-2016 10:05

Client ID:

Instrument: gcms-c.i

Sample Info: WG197007-3,TJ0540

Operator: TBJ

Column phase: RTX-VMS

Column diameter: 0.18

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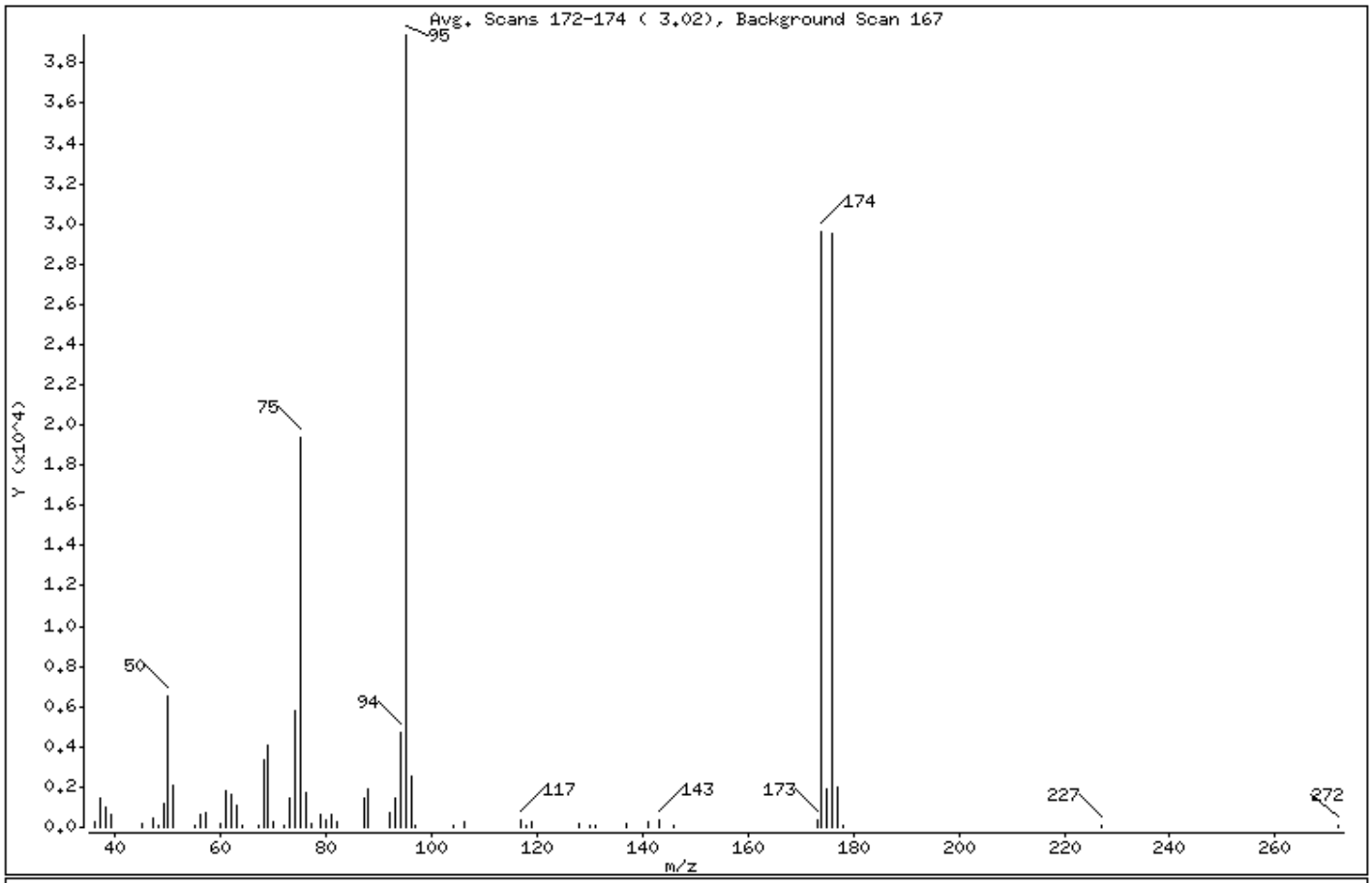

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.45
75	30.00 - 60.00% of mass 95	49.25
96	5.00 - 9.00% of mass 95	6.47
173	Less than 2.00% of mass 174	0.97 (1.30)
174	Greater than 50.00% of mass 95	75.26
175	5.00 - 9.00% of mass 174	4.72 (6.27)
176	95.00 - 101.00% of mass 174	74.92 (99.54)
177	5.00 - 9.00% of mass 176	5.11 (6.81)

Date : 20-DEC-2016 10:05

Client ID: Instrument: gcms-c.i

Sample Info: WG197007-3,TJ0540

Operator: TBJ

Column phase: RTX-VMS Column diameter: 0.18

Data File: CB506.D
Spectrum: Avg. Scans 172-174 (3.02), Background Scan 167
Location of Maximum: 95.00
Number of points: 60

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	255	63.00	1108	87.00	1455	137.00	152
37.00	1404	64.00	72	88.00	1934	141.00	229
38.00	1007	67.00	101	92.00	763	143.00	382
39.00	657	68.00	3361	93.00	1422	146.00	86
45.00	204	69.00	4044	94.00	4699	173.00	384
47.00	447	70.00	292	95.00	39392	174.00	29648
48.00	90	72.00	84	96.00	2549	175.00	1859
49.00	1175	73.00	1466	97.00	78	176.00	29512
50.00	6480	74.00	5776	104.00	87	177.00	2011
51.00	2120	75.00	19400	106.00	232	178.00	78
55.00	105	76.00	1702	117.00	319	227.00	72
56.00	626	77.00	193	118.00	85	272.00	88
57.00	695	79.00	650	119.00	259		
60.00	147	80.00	318	128.00	195		
61.00	1834	81.00	671	130.00	101		
62.00	1585	82.00	309	131.00	74		

Raw QC Data Section

Report of Analytical Results

Client:
Lab ID: WG197007-2
Client ID: Method Blank Sample
Project:
SDG: TJ0540
Lab File ID: C1288.D

Sample Date:
Received Date:
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 30-DEC-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	5.0	ug/L	1	5	5.0	0.24	1.0
Chloromethane	U	5.0	ug/L	1	5	5.0	0.36	1.0
Vinyl Chloride	U	5.0	ug/L	1	5	5.0	0.25	1.0
Bromomethane	U	5.0	ug/L	1	5	5.0	0.49	1.0
Chloroethane	U	5.0	ug/L	1	5	5.0	0.55	1.0
Trichlorofluoromethane	U	5.0	ug/L	1	5	5.0	0.24	1.0
1,1-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.35	0.50
Methylene Chloride	U	10	ug/L	1	10	10.	1.1	2.5
trans-1,2-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.25	0.50
1,1-Dichloroethane	U	5.0	ug/L	1	5	5.0	0.21	0.50
Chloroform	U	5.0	ug/L	1	5	5.0	0.32	0.50
1,1,1-Trichloroethane	U	5.0	ug/L	1	5	5.0	0.20	0.50
Carbon Tetrachloride	U	5.0	ug/L	1	5	5.0	0.22	0.50
Benzene	U	5.0	ug/L	1	5	5.0	0.26	0.50
1,2-Dichloroethane	U	5.0	ug/L	1	5	5.0	0.20	0.50
Trichloroethene	U	5.0	ug/L	1	5	5.0	0.28	0.50
1,2-Dichloropropane	U	5.0	ug/L	1	5	5.0	0.25	0.50
Bromodichloromethane	U	5.0	ug/L	1	5	5.0	0.33	0.50
cis-1,3-Dichloropropene	U	5.0	ug/L	1	5	5.0	0.19	0.50
Toluene	U	5.0	ug/L	1	5	5.0	0.27	0.50
trans-1,3-Dichloropropene	U	5.0	ug/L	1	5	5.0	0.20	0.50
1,1,2-Trichloroethane	U	5.0	ug/L	1	5	5.0	0.33	0.50
Tetrachloroethene	U	5.0	ug/L	1	5	5.0	0.40	0.50
Dibromochloromethane	U	5.0	ug/L	1	5	5.0	0.30	0.50
Chlorobenzene	U	5.0	ug/L	1	5	5.0	0.22	0.50
Ethylbenzene	U	5.0	ug/L	1	5	5.0	0.21	0.50
Bromoform	U	5.0	ug/L	1	5	5.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	1	5	5.0	0.38	0.50
1,3-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.26	0.50
1,4-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.24	0.50
1,2-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	0.15	0.50
cis-1,2-Dichloroethene	U	5.0	ug/L	1	5	5.0	0.21	0.50
Freon-113	U	5.0	ug/L	1	5	5.0	0.31	0.50
Acetone	U	10	ug/L	1	10	10.	2.2	2.5

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Report of Analytical Results

Client:
Lab ID: WG197007-2
Client ID: Method Blank Sample
Project:
SDG: TJ0540
Lab File ID: C1288.D

Sample Date:
Received Date:
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 30-DEC-16

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Carbon Disulfide	J	0.51	ug/L	1	5	5.0	0.25	0.50
Methyl tert-butyl Ether	U	5.0	ug/L	1	5	5.0	0.36	0.50
1,2-Dichloroethylene (Total)	U	10	ug/L	1	10	10.	0.21	1.0
2-Butanone	U	10	ug/L	1	10	10.	1.3	2.5
Cyclohexane	U	5.0	ug/L	1	5	5.0	0.31	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
1,2-Dibromoethane	U	5.0	ug/L	1	5	5.0	0.22	0.50
Xylenes (Total)	U	15	ug/L	1	15	15.	0.25	1.5
M+P-Xylenes	U	10	ug/L	1	10	10.	0.59	1.0
o-Xylene	U	5.0	ug/L	1	5	5.0	0.25	0.50
Styrene	U	5.0	ug/L	1	5	5.0	0.23	0.50
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	1	5	5.0	0.50	0.50
1,2,4-Trichlorobenzene	U	5.0	ug/L	1	5	5.0	0.37	0.50
Isopropylbenzene	U	5.0	ug/L	1	5	5.0	0.23	0.50
Methyl Acetate	U	5.0	ug/L	1	5	5.0	0.53	0.75
Methylcyclohexane	U	5.0	ug/L	1	5	5.0	0.30	0.50
1,2-Dichloroethane-D4		106.	%					
Toluene-D8		99.6	%					
P-Bromofluorobenzene		100.	%					
Dibromofluoromethane		105.	%					

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Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1288.D
Report Date: 30-Dec-2016 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C122016.b\C1288.D
Lab Smp Id: WG197007-2
Inj Date : 20-DEC-2016 13:03 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197007-2,TJ0540
Misc Info : WG197007,WG197097-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Meth Date : 30-Dec-2016 15:05 elittlefie Quant Type: ISTD
Cal Date : 19-DEC-2016 14:03 Cal File: C1279A.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

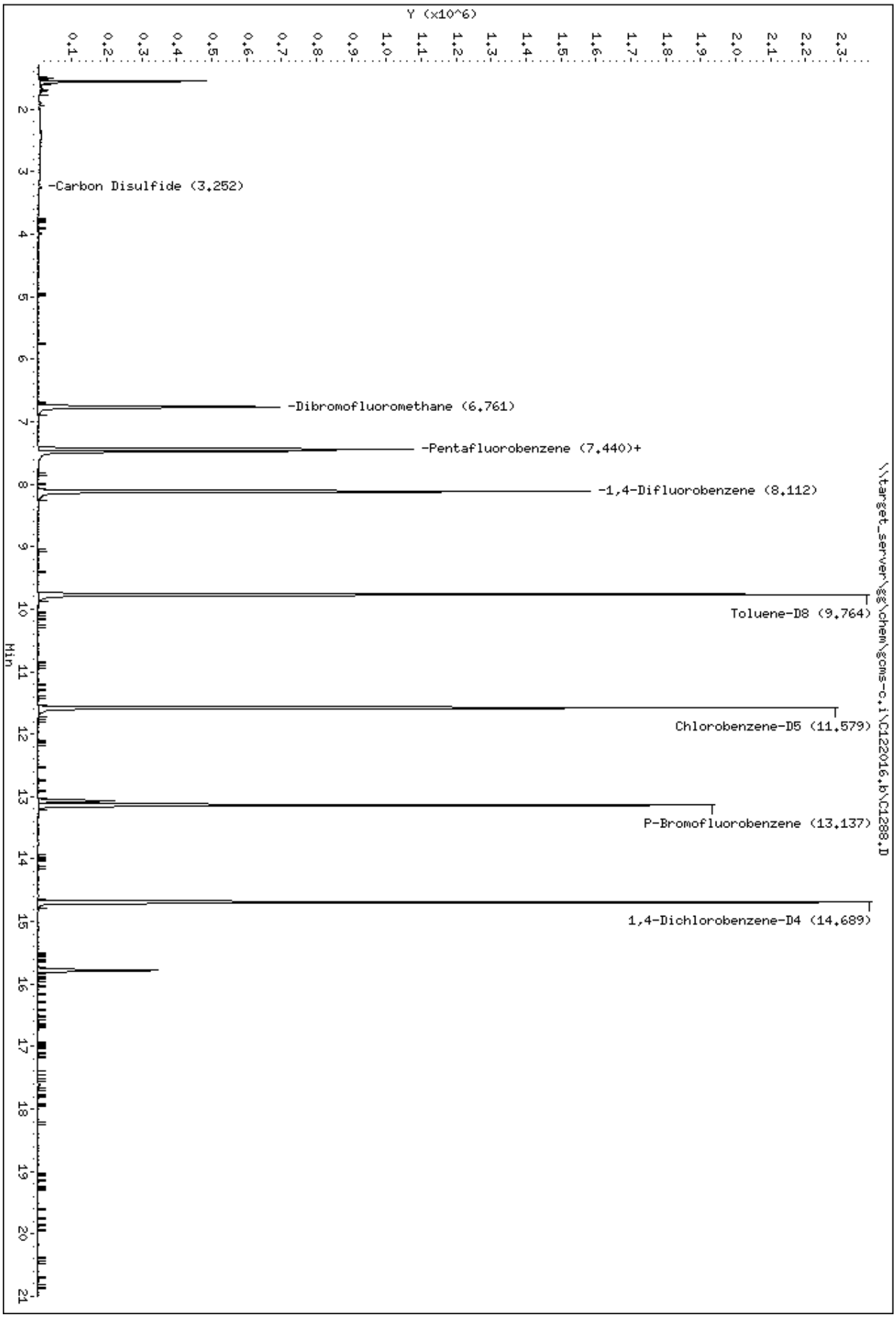
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	10 Carbon Disulfide	76	3.251	3.247	(0.437)	9808	0.50627	0.51(a)	
$	37 Dibromofluoromethane	113	6.761	6.764	(0.909)	457731	52.6013	52.6	
*	42 Pentafluorobenzene	168	7.440	7.436	(1.000)	669245	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.469	7.472	(1.004)	486481	52.9582	53.0	
*	49 1,4-Difluorobenzene	114	8.112	8.115	(1.000)	1247374	50.0000		
$	55 Toluene-D8	98	9.763	9.766	(1.204)	1506129	49.8253	49.8	
*	66 Chlorobenzene-D5	117	11.579	11.582	(1.000)	1230273	50.0000		
$	76 P-Bromofluorobenzene	95	13.137	13.133	(1.619)	720156	50.2957	50.3	
*	91 1,4-Dichlorobenzene-D4	152	14.688	14.691	(1.000)	661863	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1288.D
Date : 20-DEC-2016 13:03
Client ID:
Sample Info: WG197007-2,TJ0540
Instrument: gcms-c.i
Y (x10^6)
Min
-Carbon Disulfide (3.252)
-Dibromofluoromethane (6.761)
-Pentafluorobenzene (7.440)+
-1,4-Difluorobenzene (8.112)
Toluene-D8 (9.764)
Chlorobenzene-D5 (11.579)
P-Bromofluorobenzene (13.137)
1,4-Dichlorobenzene-D4 (14.689)
\\target_server\gg\chem\gcms-c.i\C122016.b\C1288.D

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1288.D

Date : 20-DEC-2016 13:03

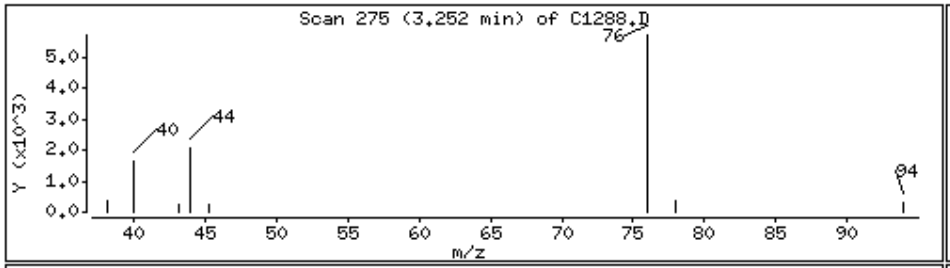
Client ID:

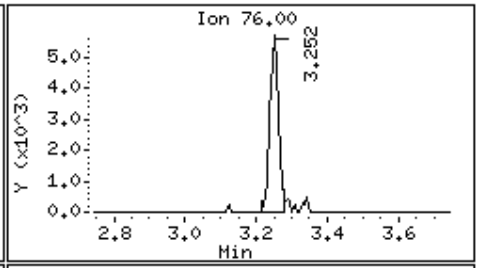
Instrument: gcms-c.i

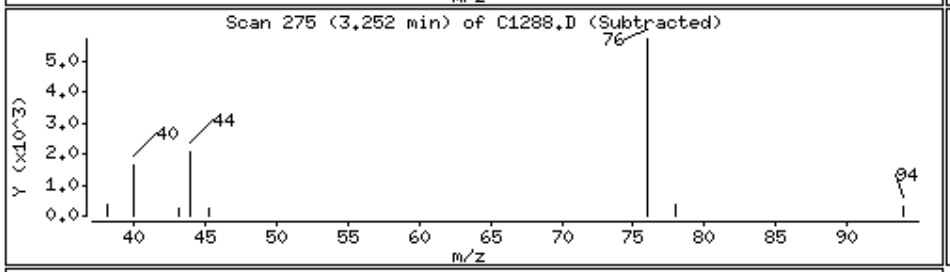
Sample Info: WG197007-2,TJ0540

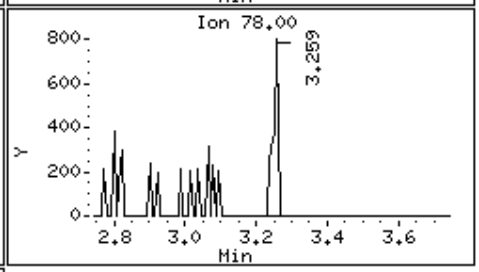
10 Carbon Disulfide

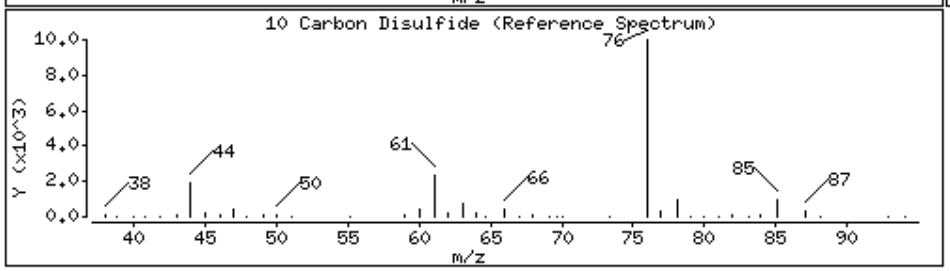
Concentration: 0.51 ug/l











LCS Recovery Report

Client:
Lab ID: WG197007-1
Client ID: LCS
Project:
SDG: TJ0540
LCS File ID: C1286.D

Sample Date:
Received Date:
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 30-DEC-16

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Dichlorodifluoromethane	61.0	20.0	12.2	ug/L	29-164
Chloromethane	77.0	20.0	15.4	ug/L	0-273
Vinyl Chloride	85.5	20.0	17.1	ug/L	0-251
Bromomethane	75.5	20.0	15.1	ug/L	0-242
Chloroethane	102.	20.0	20.3	ug/L	14-230
Trichlorofluoromethane	92.5	20.0	18.5	ug/L	17-181
1,1-Dichloroethene	84.0	20.0	16.8	ug/L	0-234
Methylene Chloride	85.5	20.0	17.1	ug/L	0-221
trans-1,2-Dichloroethene	94.5	20.0	18.9	ug/L	54-156
1,1-Dichloroethane	96.0	20.0	19.2	ug/L	59-155
Chloroform	100.	20.0	20.0	ug/L	51-138
1,1,1-Trichloroethane	95.5	20.0	19.1	ug/L	52-162
Carbon Tetrachloride	85.0	20.0	17.0	ug/L	70-140
Benzene	96.0	20.0	19.2	ug/L	37-151
1,2-Dichloroethane	99.5	20.0	19.9	ug/L	49-155
Trichloroethene	96.5	20.0	19.3	ug/L	71-157
1,2-Dichloropropane	97.0	20.0	19.4	ug/L	0-210
Bromodichloromethane	102.	20.0	20.4	ug/L	35-155
cis-1,3-Dichloropropene	107.	20.0	21.4	ug/L	0-227
Toluene	97.5	20.0	19.5	ug/L	47-150
trans-1,3-Dichloropropene	111.	20.0	22.2	ug/L	17-183
1,1,2-Trichloroethane	102.	20.0	20.4	ug/L	52-150
Tetrachloroethene	98.5	20.0	19.7	ug/L	64-148
Dibromochloromethane	104.	20.0	20.7	ug/L	53-149
Chlorobenzene	99.0	20.0	19.8	ug/L	37-160
Ethylbenzene	96.0	20.0	19.2	ug/L	37-162
Bromoform	104.	20.0	20.7	ug/L	45-169
1,1,2,2-Tetrachloroethane	101.	20.0	20.2	ug/L	46-157
1,3-Dichlorobenzene	100.	20.0	20.0	ug/L	59-156
1,4-Dichlorobenzene	100.	20.0	20.0	ug/L	18-190
1,2-Dichlorobenzene	103.	20.0	20.6	ug/L	18-190
cis-1,2-Dichloroethene	88.5	20.0	17.7	ug/L	85-123
Freon-113	94.5	20.0	18.9	ug/L	73-126
Acetone	108.	20.0	21.5	ug/L	62-172
Carbon Disulfide	104.	20.0	20.8	ug/L	71-129

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LCS Recovery Report

Client:
Lab ID: WG197007-1
Client ID: LCS
Project:
SDG: TJ0540
LCS File ID: C1286.D

Sample Date:
Received Date:
Extract Date: 20-DEC-16
Extracted By: TBJ
Extraction Method: EPA 624
Lab Prep Batch: WG197007

Analysis Date: 20-DEC-16
Analyst: TBJ
Analysis Method: EPA 624
Matrix: AQ
% Solids: NA
Report Date: 30-DEC-16

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Methyl tert-butyl Ether	99.5	40.0	39.8	ug/L	81-125
1,2-Dichloroethylene (Total)	91.5	40.0	36.6	ug/L	84-121
2-Butanone	107.	20.0	21.4	ug/L	71-132
Cyclohexane	99.5	20.0	19.9	ug/L	71-133
4-Methyl-2-Pentanone	112.	20.0	22.4	ug/L	83-122
2-Hexanone	97.0	20.0	19.4	ug/L	80-124
1,2-Dibromoethane	99.0	20.0	19.8	ug/L	84-116
Xylenes (Total)	103.	60.0	61.9	ug/L	89-116
M+P-Xylenes	103.	40.0	41.2	ug/L	88-116
o-Xylene	104.	20.0	20.8	ug/L	90-116
Styrene	102.	20.0	20.5	ug/L	88-117
1,2-Dibromo-3-Chloropropane	95.0	20.0	19.0	ug/L	67-124
1,2,4-Trichlorobenzene	97.0	20.0	19.4	ug/L	76-126
Isopropylbenzene	106.	20.0	21.3	ug/L	96-136
Methyl Acetate	94.5	20.0	18.9	ug/L	70-132
Methylcyclohexane	98.5	20.0	19.7	ug/L	73-125
1,2-Dichloroethane-D4	101.				67-135
Toluene-D8	99.1				65-128
P-Bromofluorobenzene	99.6				56-133
Dibromofluoromethane	101.				68-128

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Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286.D
Report Date: 30-Dec-2016 15:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C122016.b\C1286.D
Lab Smp Id: WG197007-1
Inj Date : 20-DEC-2016 11:44 MS Autotune Date: 16-AUG-2016 07:25
Operator : TBJ Inst ID: gcms-c.i
Smp Info : WG197007-1,TJ0540
Misc Info : WG197007,WG197097-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-c.i\C122016.b\C6A05(02).m
Meth Date : 30-Dec-2016 15:05 elittlefie Quant Type: ISTD
Cal Date : 19-DEC-2016 14:03 Cal File: C1279A.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.708	1.710	(0.230)	90470	12.2574	12.2	
2	Chloromethane	50	1.908	1.910	(0.256)	125464	15.3985	15.4	
3	Vinyl chloride	62	2.001	1.996	(0.269)	129109	17.1073	17.1	
4	Bromomethane	94	2.344	2.346	(0.315)	70344	15.0655	15.1	
5	Chloroethane	64	2.480	2.482	(0.333)	71252	20.3124	20.3	
6	Trichlorofluoromethane	101	2.630	2.632	(0.353)	190239	18.5213	18.5	
7	Diethyl Ether	59	2.994	2.997	(0.402)	94275	20.8109	20.8	
8	Tertiary-butyl alcohol	59	4.610	4.612	(0.620)	39298	78.3915	78.4	
9	1,1-Dichloroethene	96	3.216	3.219	(0.432)	144470	16.8296	16.8	
10	Carbon Disulfide	76	3.245	3.247	(0.436)	434901	20.8506	20.8	
11	Freon-113	151	3.273	3.276	(0.440)	119027	18.8871	18.9	
12	Iodomethane	142	3.395	3.397	(0.456)	95274	15.1574	15.2	
13	Acrolein	56	3.659	3.662	(0.492)	70586	96.6684	96.7	
14	Methylene Chloride	84	3.988	3.990	(0.536)	179831	17.0767	17.1	
15	Acetone	43	4.081	4.075	(0.548)	31107	21.5390	21.5	
16	Isobutyl Alcohol	43	7.676	7.679	(1.032)	39340	245.604	246	
17	trans-1,2-Dichloroethene	96	4.217	4.219	(0.567)	161350	18.9230	18.9	
18	Allyl Chloride	41	3.838	3.840	(0.516)	179498	20.5654	20.6	
19	Methyl tert-butyl ether	73	4.403	4.405	(0.592)	677611	39.7889	39.8	
20	Acetonitrile	39	4.796	4.798	(0.645)	15288	189.737	190	
21	Di-isopropyl ether	45	5.046	5.048	(0.678)	438027	20.1485	20.1	
22	Chloroprene	53	5.182	5.177	(0.696)	225447	19.6818	19.7	
23	Propionitrile	54	7.340	7.343	(0.987)	109669	213.240	213	
24	Methacrylonitrile	41	7.369	7.364	(0.990)	592056	221.285	221	

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286.D
Report Date: 30-Dec-2016 15:30

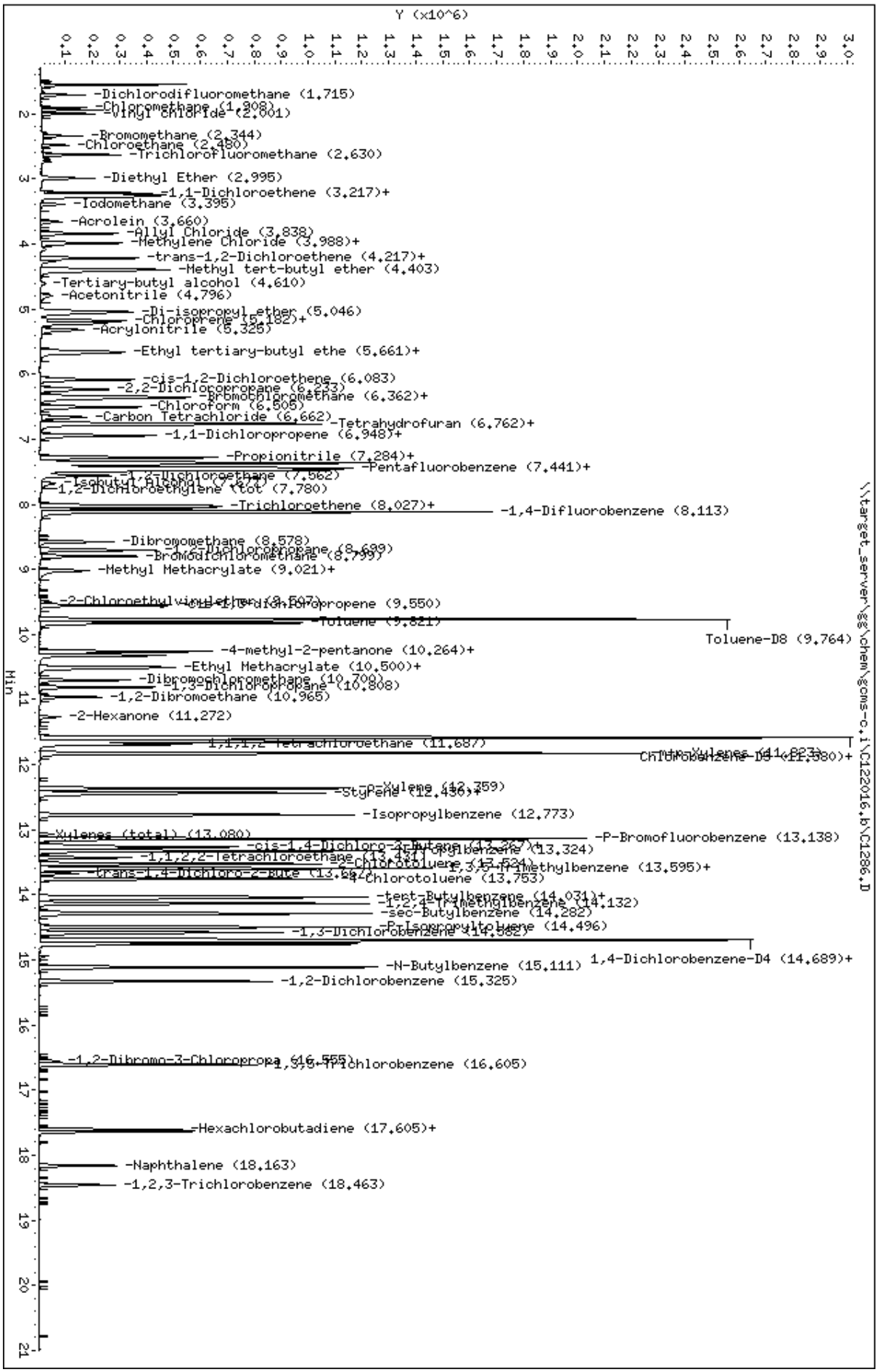
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	5.217	5.220	(0.701)	278949	19.1949	19.2	
	26	Acrylonitrile	52	5.325	5.320	(0.716)	142842	103.726	104	
	27	Ethyl tertiary-butyl ether	59	5.661	5.663	(0.761)	336603	19.2227	19.2	
	28	Vinyl Acetate	43	5.682	5.685	(0.700)	250214	25.4690	25.5	
	29	cis-1,2-Dichloroethene	96	6.082	6.085	(0.817)	184550	17.6827	17.7	
M	30	1,2-Dichloroethylene (total)	96				345900	36.6057	36.6	
	31	Methyl Methacrylate	41	9.020	9.016	(1.112)	78670	19.8964	19.9	
	32	2,2-Dichloropropane	77	6.232	6.235	(0.838)	224815	18.5440	18.5	
	33	Bromochloromethane	128	6.375	6.371	(0.857)	82356	20.1498	20.1	
	34	Chloroform	83	6.504	6.507	(0.874)	340159	20.0310	20.0	
	35	Carbon Tetrachloride	117	6.661	6.664	(0.821)	130361	16.9690	17.0	
	36	Tetrahydrofuran	42	6.726	6.721	(0.904)	22246	20.7929	20.8	
$	37	Dibromofluoromethane	113	6.761	6.764	(0.909)	473575	50.5478	50.5	
	38	1,1,1-Trichloroethane	97	6.769	6.764	(0.910)	277458	19.1145	19.1	
	39	1,1-Dichloropropene	75	6.947	6.943	(0.856)	234580	19.2853	19.3	
	40	2-Butanone	43	6.969	6.957	(0.937)	36018	21.3799	21.4	
	41	Benzene	78	7.283	7.286	(0.898)	632390	19.2561	19.2	
*	42	Pentafluorobenzene	168	7.440	7.436	(1.000)	720540	50.0000		
	43	Cyclohexane	56	6.354	6.349	(0.854)	237847	19.9211	19.9	
	44	Ethyl Methacrylate	69	10.521	10.524	(1.297)	162321	21.7203	21.7	
$	45	1,2-Dichloroethane-D4	65	7.469	7.472	(1.004)	498589	50.4123	50.4	
	46	Tertiary-amyl methyl ether	73	7.476	7.479	(1.005)	288883	18.7955	18.8	
	47	1,2-Dichloroethane	62	7.562	7.557	(0.932)	216763	19.8886	19.9	
	48	Trichloroethene	95	8.055	8.058	(0.993)	193163	19.3439	19.3	
*	49	1,4-Difluorobenzene	114	8.112	8.115	(1.000)	1312143	50.0000		
	50	Dibromomethane	93	8.577	8.580	(1.057)	103838	19.8856	19.9	
	51	1,2-Dichloropropane	63	8.699	8.701	(1.072)	149053	19.4560	19.4	
	52	Bromodichloromethane	83	8.799	8.794	(1.085)	249329	20.4396	20.4	
	53	cis-1,3-dichloropropene	75	9.549	9.552	(1.177)	276772	21.4512	21.4	
	54	1,4-Dioxane	88	9.049	9.051	(1.115)	29198	198.583	198(R)	
$	55	Toluene-D8	98	9.764	9.766	(1.204)	1576241	49.5708	49.6	
	56	2-Chloroethylvinylether	63	9.499	9.509	(1.171)	18544	23.6273	23.6	
	57	Toluene	92	9.828	9.823	(1.211)	423010	19.5341	19.5	
	58	4-methyl-2-pentanone	43	10.285	10.288	(1.268)	81323	22.3942	22.4	
	59	Tetrachloroethene	164	10.264	10.259	(0.886)	139094	19.7171	19.7	
	60	trans-1,3-Dichloropropene	75	10.321	10.316	(1.272)	237430	22.1762	22.2	
	61	1,1,2-Trichloroethane	83	10.500	10.502	(1.294)	123922	20.4302	20.4	
	62	Dibromochloromethane	129	10.700	10.702	(0.924)	173160	20.6839	20.7	
	63	1,3-Dichloropropane	76	10.807	10.810	(0.933)	262886	19.9043	19.9	
	64	1,2-Dibromoethane	107	10.964	10.967	(1.352)	149840	19.7507	19.8	
	65	2-Hexanone	43	11.265	11.260	(0.973)	50019	19.4422	19.4	
*	66	Chlorobenzene-D5	117	11.579	11.582	(1.000)	1284352	50.0000		
	67	Chlorobenzene	112	11.601	11.603	(1.002)	482861	19.8538	19.8	
	152	1-Chlorohexane	91	11.586	11.589	(1.557)	282705	19.7193	19.7	
	68	Ethylbenzene	106	11.644	11.639	(1.006)	253427	19.1535	19.2	
	69	1,1,1,2-Tetrachloroethane	131	11.686	11.682	(1.009)	158325	19.7468	19.7	
M	70	Xylenes (total)	106				961127	61.9327	61.9	
	71	m+p-Xylenes	106	11.822	11.825	(1.021)	637166	41.1726	41.2	
	72	o-Xylene	106	12.358	12.361	(1.067)	323961	20.7601	20.8	
	73	Styrene	104	12.430	12.432	(1.073)	524339	20.4981	20.5	
	74	Bromoform	173	12.458	12.461	(1.076)	101458	20.7030	20.7	
	75	Isopropylbenzene	105	12.773	12.768	(0.870)	842119	21.2905	21.3	
$	76	P-Bromofluorobenzene	95	13.137	13.133	(1.619)	749952	49.7913	49.8	
	77	cis-1,4-Dichloro-2-Butene	53	13.238	13.240	(0.901)	38462	19.9884	20.0	

Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286.D
Report Date: 30-Dec-2016 15:30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.666	13.669	(0.930)	30457	21.8355	21.8	
79	Bromobenzene	156	13.266	13.269	(0.903)	210136	19.3895	19.4	
80	N-Propylbenzene	91	13.323	13.319	(0.907)	1069300	21.8589	21.8	
81	1,1,2,2-Tetrachloroethane	83	13.431	13.426	(0.914)	188049	20.2526	20.2	
82	1,3,5-Trimethylbenzene	105	13.595	13.597	(0.926)	710619	20.5239	20.5	
83	2-Chlorotoluene	91	13.523	13.526	(0.921)	640728	20.8894	20.9	
84	1,2,3-Trichloropropane	75	13.602	13.597	(0.926)	137799	20.2713	20.3	
85	4-Chlorotoluene	91	13.752	13.755	(0.936)	681666	20.5600	20.6	
86	tert-Butylbenzene	119	14.031	14.033	(0.955)	686191	21.1456	21.1	
87	Pentachloroethane	117	14.052	14.055	(0.957)	131760	20.9756	21.0	
88	1,2,4-Trimethylbenzene	105	14.131	14.134	(0.962)	737499	21.2773	21.3	
89	P-Isopropyltoluene	119	14.496	14.498	(0.987)	764465	20.9871	21.0	
90	1,3-Dichlorobenzene	146	14.581	14.577	(0.993)	400033	20.0268	20.0	
* 91	1,4-Dichlorobenzene-D4	152	14.689	14.691	(1.000)	702961	50.0000		
92	1,4-Dichlorobenzene	146	14.710	14.712	(1.001)	404346	19.9882	20.0	
93	N-Butylbenzene	91	15.110	15.113	(1.029)	785899	20.8651	20.9	
94	sec-Butylbenzene	105	14.281	14.284	(0.972)	967266	21.4817	21.5	
95	1,2-Dichlorobenzene	146	15.325	15.327	(1.043)	372027	20.6558	20.6	
96	1,2-Dibromo-3-Chloropropane	75	16.554	16.556	(1.127)	22754	19.0411	19.0	
97	1,3,5-Trichlorobenzene	180	16.604	16.607	(1.130)	264421	19.9695	20.0	
98	Hexachlorobutadiene	225	17.605	17.607	(1.199)	104715	17.2170	17.2	
99	1,2,4-Trichlorobenzene	180	17.634	17.636	(1.200)	177796	19.4122	19.4	
100	1,2,3-Trimethylbenzene	105	14.760	14.755	(1.005)	744227	20.7033	20.7	
101	Naphthalene	128	18.162	18.158	(1.236)	242429	21.1837	21.2	
102	1,2,3-Trichlorobenzene	180	18.463	18.458	(1.257)	92244	17.3915	17.4	
103	Methyl Acetate	43	4.267	4.269	(0.573)	70708	18.8827	18.9	
104	Methylcyclohexane	83	8.027	8.022	(1.079)	313516	19.7410	19.7	
M 153	Total Alkylbenzenes	100				6563358	169.430	169	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-c.i\C122016.b\C1286.D
Date : 20-DEC-2016 11:44
Client ID:
Sample Info: WG197007-1,TJ0540
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-c.i
Operator: TBJ
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-c.i\C122016.b\C1286.D
-Dichlorodifluoromethane (1.715)
-Chloromethane (1.908)
-Vinyl Chloride (2.001)
-Bromomethane (2.344)
-Chloroethane (2.480)
-Trichlorofluoromethane (2.630)
-Diethyl Ether (2.995)
-1,1-Dichloroethene (3.217)+
-Iodomethane (3.395)
-Acrolein (3.660)
-Allyl Chloride (3.838)
-Methylene Chloride (3.988)+
-trans-1,2-Dichloroethene (4.217)+
-Methyl tert-butyl ether (4.403)
-Tertiary-butyl alcohol (4.610)
-Acetonitrile (4.796)
-Di-isopropyl ether (5.046)
-Chloroprene (5.182)+
-Acrylonitrile (5.326)
-Ethyl tertiary-butyl ethe (5.661)+
-cis-1,2-Dichloroethene (6.083)
-2,2-Dichloropropane (6.233)
-Bromochloromethane (6.362)+
-Chloroform (6.505)
-Carbon Tetrachloride (6.662)
-Tetrahydrofuran (6.762)+
-1,1-Dichloropropene (6.948)+
-Propionitrile (7.284)+
-Pentafluorobenzene (7.441)+
-1,2-Dichloroethane (7.562)
-Isobutyl Alcohol (7.621)
-1,2-Dichloroethylene (tot (7.780)
-Trichloroethene (8.027)+
-1,4-Difluorobenzene (8.113)
-Dibromomethane (8.578)
-1,2-Dichloropropane (8.699)
-Bromodichloromethane (8.799)
-Methyl Methacrylate (9.021)+
-2-Chloroethyl vinyl ether (9.507)
-cis-1,3-Dichloropropene (9.550)
-Toluene (9.821)
Toluene-D8 (9.764)
-4-methyl-2-pentanone (10.264)+
-Ethyl Methacrylate (10.500)+
-Dibromochloromethane (10.709)
-1,3-Dichloropropane (10.808)
-1,2-Dibromoethane (10.965)
-2-Hexanone (11.272)
1,1,1,2-Tetrachloroethane (11.687)
Chlorobenzene-D5 (11.880)+
-Styrene (12.436)+
-Isopropylbenzene (12.773)
-P-Bromofluorobenzene (13.138)
-1,1,2,2-Tetrachloroethane (13.431)
-n-Propylbenzene (13.524)
-2-Chlorotoluene (13.595)+
-4-Chlorotoluene (13.753)
-tert-Butylbenzene (14.031)+
-1,2,4-Trimethylbenzene (14.132)
-sec-Butylbenzene (14.282)
-P-Isopropyltoluene (14.496)
-1,3-Dichlorobenzene (14.582)
1,4-Dichlorobenzene-D4 (14.689)+
-N-Butylbenzene (15.111)
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloroprop (16.555)
-1,3,5-Trichlorobenzene (16.605)
-Hexachlorobutadiene (17.605)+
-Naphthalene (18.163)
-1,2,3-Trichlorobenzene (18.463)

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-C INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 12-19-16

					PREP METHOD			Criteria						
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	MCP	Y/N	ANALYST	PH	COMMENTS
50ng BFB	CB505			VOAHBFBAQ							Y	TBS		WG196984
VSTD050	C1273			C6A05(02)D										
020	74													C6A05(02) → Points Affiled
005	75													↳ WG197097
001	76													
200	77													
100	78										N			
100B	79										Y			
IND	80													
Rinse	81													
↓	82			↓								↓		

STANDARD	CODE
BFB	V0552
CAL. STD.	V0568 / V0563B
LCS/MS MIX	V0560
EXTRAS MIX	V0565

STANDARD	CODE
IS MIX	V0558C
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-C INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 12-20-16 10:05

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria MCP	Y/N	ANALYST	PH	COMMENTS
50ng BFB -3	C13506	1	1	V0ABFBA0							Y	TBS		WG197007
TBS 122016 CV @ 20	C1284	|	1	16A05(02)							N	|		Prep-1 @ 40 ppb
~~LCS~~ @ 20 B -4	85	|	2	|							Y	|		
LCS @ 20 -1	86	|	3	|							↓	|		
Rinse	87	|	4	|							N	|		
VBLK -2	88	↓	5	|							Y	|		200mL RF
TS054FL-1 DL C	89	2	6	|	✓				4.2		|	|		20mL→40mL
↓ -2 ↓ ↓	90	↓	7	|	|				↓		|	|		↓
TS0540-1 A	91	1	8	|	|		✓			|	|			
TS0558-1 A	92	|	9	|	↓			↓			↓	|			✓16:36
Rinse	93	|	10	|							N	|		
↓	↓ 94	↓	11	↓							↓	↓		

STANDARD	CODE
BFB	V0552
CAL. STD.	V0562/V0569A
LCS/MS MIX	V0560
EXTRAS MIX	V0565

STANDARD	CODE
IS MIX	V0558C
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

SEMIVOLATILE DATA

BY EPA METHOD 625

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Fort Devens/DCL Leachate 68016363 **Matrix:** AQ
Lab Code: KAS **SDG:** TJ0540

Client Sample ID	Lab Sample ID	Col. ID	2FBP	#	2FP	#	NBZ	#	PHL	#	TBP	#	TPH	#
DCL LEACHATE	TJ0540-1		66.6		17.6		62.2		11.4		77.6		77.4	
Method Blank Sample	WG196753-1		62.4		10.8		65.8		7.38	*	42.8		91.6	
Laboratory Control S	WG196753-2		72.7		19.6		71.6		15.0		69.5		99.5	
Laboratory Control S	WG196753-3		45.6		10.8		43.3		7.43	*	43.3		58.4	

		QC Limits
2FBP	2-FLUOROBIPHENYL	43-90
TPH	TERPHENYL-D14	36-156
2FP	2-FLUOROPHENOL	10-80
TBP	2,4,6-TRIBROMOPHENOL	37-112
NBZ	NITROBENZENE-D5	41-91
PHL	PHENOL-D6	10-90

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 68016363
Lab File ID : U6538.D
Instrument ID : GCMS-U
Matrix : AQ

SDG : TJ0540
Lab Sample ID : WG196753-1
Date Extracted : 15-DEC-16
Date Analyzed : 16-DEC-16
Time Analyzed : 00:21

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG196753-2	U6539.D	12/16/16	00:51
DCL LEACHATE	TJ0540-1	U6541.D	12/16/16	01:52
Laboratory Control S	WG196753-3	U6542.D	12/16/16	02:22

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 68016363
Lab File ID : UD649A.D
Instrument ID : GCMS-U

SDG : TJ0540
Date Analyzed : 26-OCT-16
Time Analyzed : 09:03

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.9		
68	Less than 2.0% of mass 69	0.3	0.87	1
69	Less than 100.0% of mass 198	37.4		
70	Less than 2.0% of mass 69	0.0	0.0	1
127	40.0 - 60.0% of mass 198	48.8		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	18.5		
365	1.0 - 100.0% of mass 198	1.4		
441	0.0 - 100.0% of mass 443	11.5	88.77	2
442	40.0 - 100.0% of mass 198	71.8		
443	17.0 - 23.0% of mass 442	13.0	18.11	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG193442-3	U6044.D	10/26/16	09:22
Initial Calibration	WG193442-2	U6045.D	10/26/16	09:53
Initial Calibration	WG193442-4	U6046.D	10/26/16	10:23
Independent Source	WG193442-5	U6047.D	10/26/16	10:54

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 68016363
Lab File ID : UD673A.D
Instrument ID : GCMS-U

SDG : TJ0540
Date Analyzed : 15-DEC-16
Time Analyzed : 10:26

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.1		
68	Less than 2.0% of mass 69	0.3	0.68	1
69	Less than 100.0% of mass 198	38.6		
70	Less than 2.0% of mass 69	0.0	0.0	1
127	40.0 - 60.0% of mass 198	48.9		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	19.1		
365	1.0 - 100.0% of mass 198	2.5		
441	0.0 - 100.0% of mass 443	11.4	78.22	2
442	40.0 - 100.0% of mass 198	72.9		
443	17.0 - 23.0% of mass 442	14.5	19.93	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG196728-2	U6512.D	12/15/16	11:13
Method Blank Sample	WG196753-1	U6538.D	12/16/16	00:21
Laboratory Control S	WG196753-2	U6539.D	12/16/16	00:51
DCL LEACHATE	TJ0540-1	U6541.D	12/16/16	01:52
Laboratory Control S	WG196753-3	U6542.D	12/16/16	02:22

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 6801
Lab ID : WG193442-3
Lab File ID : U6044.D

SDG: TJ0540
Analytical Date: 10/26/16 09:22
Instrument ID: GCMS-U

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	287389		4.90		1100037		6.42		512230		8.73	
	Upper Limit	574778		5.40		2200074		6.92		1024460		9.23	
	Lower Limit	143694.5		4.40		550018.5		5.92		256115		8.23	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG196728-2	241433		4.81		906516		6.35		430110		8.64	
Method Blank Sample	WG196753-1	283644		4.81		1052914		6.33		498616		8.64	
Laboratory Control S	WG196753-2	251932		4.81		905909		6.34		444747		8.64	
DCL LEACHATE	TJ0540-1	248525		4.81		1000160		6.33		432395		8.64	
Laboratory Control S	WG196753-3	249979		4.81		951921		6.34		455453		8.64	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 6801
Lab ID : WG193442-3
Lab File ID : U6044.D

SDG: TJ0540
Analytical Date: 10/26/16 09:22
Instrument ID: GCMS-U

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	822207		10.73		405009		14.59		233383		17.62	
	Upper Limit	1644414		11.23		810018		15.09		466766		18.12	
	Lower Limit	411103.5		10.23		202504.5		14.09		116691.5		17.12	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG196728-2	796298		10.64		530666		14.47		328328		17.49	
Method Blank Sample	WG196753-1	904806		10.63		558478		14.46		356147		17.49	
Laboratory Control S	WG196753-2	766038		10.63		453633		14.46		267288		17.48	
DCL LEACHATE	TJ0540-1	805130		10.63		524034		14.46		348110		17.49	
Laboratory Control S	WG196753-3	830381		10.64		579779		14.46		376015		17.49	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U — Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* — Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D — Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E — Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J — Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J — Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B — Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C — Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L — Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M — Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N — Presumptive evidence of a compound based on a mass spectral library search.

A — Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P — Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 6
SDG: TJ0540
Lab File ID: U6541.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA
Report Date: 21-DEC-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
N-Nitrosodimethylamine	U	4.7	ug/L	1	5	4.7	0.99
Phenol	U	4.7	ug/L	1	5	4.7	1.2
Bis(2-Chloroethyl)Ether	U	4.7	ug/L	1	5	4.7	0.93
2-Chlorophenol	U	4.7	ug/L	1	5	4.7	2.2
1,3-Dichlorobenzene	U	4.7	ug/L	1	5	4.7	1.6
1,4-Dichlorobenzene	U	4.7	ug/L	1	5	4.7	1.8
1,2-Dichlorobenzene	U	4.7	ug/L	1	5	4.7	1.7
Bis(2-Chloroisopropyl) Ether	U	4.7	ug/L	1	5	4.7	1.1
N-Nitroso-Di-N-Propylamine	U	4.7	ug/L	1	5	4.7	0.73
Hexachloroethane	U	4.7	ug/L	1	5	4.7	1.6
Nitrobenzene	U	4.7	ug/L	1	5	4.7	0.98
Isophorone	U	4.7	ug/L	1	5	4.7	0.78
2-Nitrophenol	U	4.7	ug/L	1	5	4.7	2.5
2,4-Dimethylphenol	U	4.7	ug/L	1	5	4.7	2.5
Bis(2-Chloroethoxy)Methane	U	4.7	ug/L	1	5	4.7	0.83
2,4-Dichlorophenol	U	4.7	ug/L	1	5	4.7	2.9
1,2,4-Trichlorobenzene	U	4.7	ug/L	1	5	4.7	1.7
Naphthalene	U	4.7	ug/L	1	5	4.7	1.7
Hexachlorobutadiene	U	4.7	ug/L	1	5	4.7	1.5
4-Chloro-3-Methylphenol	U	4.7	ug/L	1	5	4.7	2.1
Hexachlorocyclopentadiene	U	4.7	ug/L	1	5	4.7	0.69
2,4,6-Trichlorophenol	U	4.7	ug/L	1	5	4.7	2.4
2-Chloronaphthalene	U	4.7	ug/L	1	5	4.7	1.6
Dimethyl Phthalate	U	4.7	ug/L	1	5	4.7	0.85
2,6-Dinitrotoluene	U	4.7	ug/L	1	5	4.7	0.58
Acenaphthylene	U	4.7	ug/L	1	5	4.7	1.0
Acenaphthene	U	4.7	ug/L	1	5	4.7	1.2
2,4-Dinitrophenol	U	24	ug/L	1	25	24.	17.
4-Nitrophenol	U	19	ug/L	1	20	19.	4.3
2,4-Dinitrotoluene	U	4.7	ug/L	1	5	4.7	0.43
Diethylphthalate	U	4.7	ug/L	1	5	4.7	0.71
4-Chlorophenyl-Phenylether	U	4.7	ug/L	1	5	4.7	1.1
Fluorene	U	4.7	ug/L	1	5	4.7	0.92
4,6-Dinitro-2-Methylphenol	U	24	ug/L	1	25	24.	1.1
N-Nitrosodiphenylamine	U	4.7	ug/L	1	5	4.7	0.51

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Test America Savannah
Lab ID: TJ0540-1
Client ID: DCL LEACHATE
Project: Fort Devens/DCL Leachate 68
SDG: TJ0540
Lab File ID: U6541.D

Sample Date: 08-DEC-16
Received Date: 14-DEC-16
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA
Report Date: 21-DEC-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
4-Bromophenyl-Phenylether	U	4.7	ug/L	1	5	4.7	1.0
Hexachlorobenzene	U	4.7	ug/L	1	5	4.7	0.86
Pentachlorophenol	U	19	ug/L	1	20	19.	1.6
Phenanthrene	U	4.7	ug/L	1	5	4.7	2.6
Anthracene	U	4.7	ug/L	1	5	4.7	0.71
Di-N-Butylphthalate	U	4.7	ug/L	1	5	4.7	0.72
Fluoranthene	U	4.7	ug/L	1	5	4.7	0.66
Benzidine	U	24	ug/L	1	25	24.	11.
Pyrene	U	4.7	ug/L	1	5	4.7	0.58
Butylbenzylphthalate	U	4.7	ug/L	1	5	4.7	0.51
3,3'-Dichlorobenzidine	U	4.7	ug/L	1	5	4.7	1.7
Benzo(a)anthracene	U	4.7	ug/L	1	5	4.7	0.63
Chrysene	U	4.7	ug/L	1	5	4.7	0.85
Bis(2-Ethylhexyl)Phthalate	U	4.7	ug/L	1	5	4.7	0.53
Di-N-Octylphthalate	U	4.7	ug/L	1	5	4.7	0.63
Benzo(b)fluoranthene	U	4.7	ug/L	1	5	4.7	2.1
Benzo(k)fluoranthene	U	4.7	ug/L	1	5	4.7	2.3
Benzo(a)pyrene	U	4.7	ug/L	1	5	4.7	2.0
Indeno(1,2,3-cd)pyrene	U	4.7	ug/L	1	5	4.7	1.2
Dibenzo(a,h)anthracene	U	4.7	ug/L	1	5	4.7	1.2
Benzo(g,h,i)perylene	U	4.7	ug/L	1	5	4.7	1.2
2-Fluorophenol		17.6	%				
Phenol-d6		11.4	%				
Nitrobenzene-d5		62.2	%				
2-Fluorobiphenyl		66.6	%				
2,4,6-Tribromophenol		77.6	%				
Terphenyl-d14		77.4	%				

600 Technology Way
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Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6541.D
Report Date: 21-Dec-2016 10:35

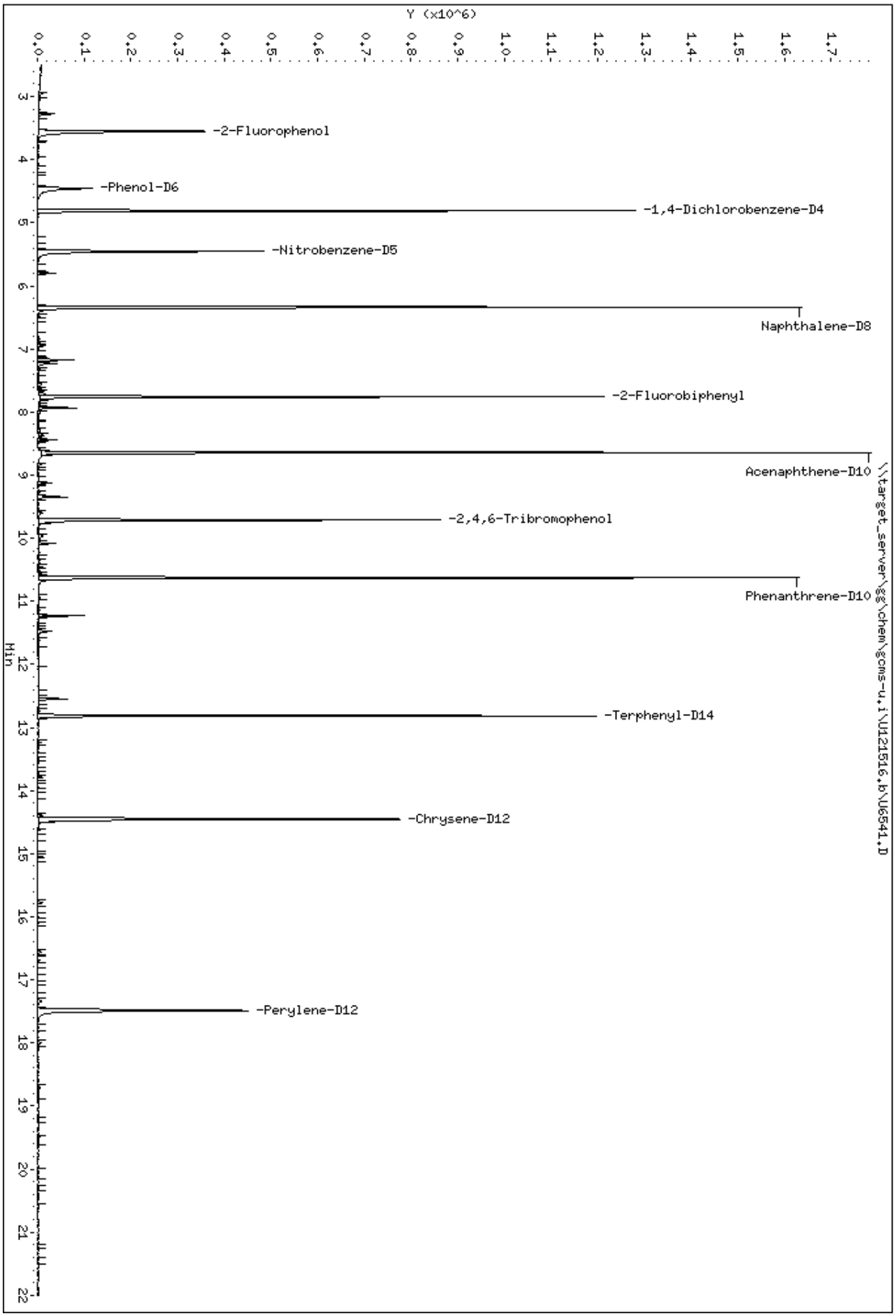
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U121516.b\U6541.D
Lab Smp Id: TJ0540-1 Client Smp ID: DCL LEACHATE
Inj Date : 16-DEC-2016 01:52 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : TJ0540-1
Misc Info : WG196728,WG196753,WG193442-3
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U121516.b\U625A039.m
Meth Date : 15-Dec-2016 15:06 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 30
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: E625.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 2-Fluorophenol	112	3.549	3.540	(0.738)	142846	17.6407	16.6	
$ 4 Phenol-D6	99	4.460	4.451	(0.927)	109531	11.4315	10.8	
* 8 1,4-Dichlorobenzene-D4	152	4.812	4.813	(1.000)	248525	40.0000		
$ 16 Nitrobenzene-D5	82	5.453	5.465	(0.861)	247013	31.1030	29.3	
* 25 Naphthalene-D8	136	6.333	6.345	(1.000)	1000160	40.0000		
$ 33 2-Fluorobiphenyl	172	7.761	7.763	(0.898)	430276	33.3246	31.4	
* 39 Acenaphthene-D10	164	8.641	8.643	(1.000)	432395	40.0000		
$ 51 2,4,6-Tribromophenol	330	9.707	9.719	(1.123)	129880	77.5799	73.2	
* 55 Phenanthrene-D10	188	10.628	10.640	(1.000)	805130	40.0000		
$ 63 Terphenyl-D14	244	12.812	12.814	(0.886)	436847	38.6972	36.5	
* 67 Chrysene-D12	240	14.458	14.470	(1.000)	524034	40.0000		
* 74 Perylene-D12	264	17.491	17.492	(1.000)	348110	40.0000		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-2-Fluorophenol
-Phenol-D6
-1,4-Dichlorobenzene-D4
-Nitrobenzene-D5
Naphthalene-D8
-2-Fluorobiphenyl
Acenaphthene-D10
-2,4,6-Tribromophenol
Phenanthrene-D10
-Terphenyl-D14
-Chrysene-D12
-Perylene-D12
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Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6541.D
Date : 16-DEC-2016 01:52
Client ID: DCL LEACHATE
Sample Info: TJ0540-1
Instrument: gcms-u.i

Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** TJ0540
Project : Fort Devens/DCL Leachate 68016363 **Instrument ID:** GCMS-U
Lab File IDs : U6045.D U6044.D U6046.D **Column ID:**
Calibration Date(s): 26-OCT-16 09:22
26-OCT-16 10:23

	5.0000 Level 1	60.0000 Level 3	125.0000 Level 5				New Crv	b	m1	m2	%RSD	Max %RSD	
N-Nitrosodimethylamine	0.48445	0.51641	0.50932				AVG		0.50339		3.33392	35.00000	O
Bis(2-Chloroethyl)ether	1.35112	1.16346	1.00750				AVG		1.17403		14.65505	35.00000	O
Phenol	1.77971	1.67644	1.49957				AVG		1.65191		8.57653	35.00000	O
2-Chlorophenol	1.36198	1.37186	1.20018				AVG		1.31134		7.35086	35.00000	O
1,3-Dichlorobenzene	1.48299	1.34072	1.09207				AVG		1.30526		15.15838	35.00000	O
1,4-Dichlorobenzene	1.44540	1.25208	1.00821				AVG		1.23523		17.73635	35.00000	O
1,2-Dichlorobenzene	1.39660	1.23757	0.89882				AVG		1.17766		21.58844	35.00000	O
Bis(2-chloroisopropyl) Ethe	1.71790	1.43925	1.22758				AVG		1.46158		16.82549	35.00000	O
N-Nitroso-di-n-propylamine	0.86642	0.70240	0.54755				AVG		0.70546		22.60315	35.00000	O
Hexachloroethane	0.61531	0.53794	0.42876				AVG		0.52733		17.77392	35.00000	O
Nitrobenzene	0.32567	0.29324	0.23967				AVG		0.28619		15.17644	35.00000	O
Isophorone	0.62212	0.62653	0.56984				AVG		0.60616		5.20222	35.00000	O
2-Nitrophenol	0.18110	0.19596	0.15695				AVG		0.17800		11.05922	35.00000	O
2,4-Dimethylphenol	0.33813	0.30147	0.26574				AVG		0.30178		11.99463	35.00000	O
Bis(2-Chloroethoxy)methane	0.46396	0.48622	0.37746				AVG		0.44255		12.98247	35.00000	O
2,4-Dichlorophenol	0.26138	0.25552	0.19886				AVG		0.23859		14.47126	35.00000	O
1,2,4-Trichlorobenzene	0.30177	0.25214	0.19904				AVG		0.25098		20.46884	35.00000	O
Naphthalene	1.00337	0.76410	0.61337				AVG		0.79361		24.78116	35.00000	O
Hexachlorobutadiene	0.14702	0.11808	0.08936				AVG		0.11815		24.40096	35.00000	O
4-Chloro-3-Methylphenol	0.26387	0.26480	0.21726				AVG		0.24864		10.93292	35.00000	O
Hexachlorocyclopentadiene	0.23212	0.22894	0.22453				AVG		0.22853		1.66739	35.00000	O
2,4,6-Trichlorophenol	0.37769	0.35907	0.32887				AVG		0.35521		6.93539	35.00000	O
2-Chloronaphthalene	1.24229	1.18356	0.98764				AVG		1.13783		11.71920	35.00000	O
Dimethyl Phthalate	1.40264	1.19905	1.16757				AVG		1.25642		10.15612	35.00000	O
2,6-Dinitrotoluene	0.30236	0.27310	0.28168				AVG		0.28572		5.26497	35.00000	O
Acenaphthylene	2.14368	1.61944	1.50392				AVG		1.75568		19.41953	35.00000	O
Acenaphthene	1.26525	0.94684	0.82492				AVG		1.01234		22.45841	35.00000	O
2,4-Dinitrophenol	0.12103	0.16296	0.18751				AVG		0.15717		21.39031	35.00000	O
2,4-Dinitrotoluene	0.37383	0.31153	0.33916				AVG		0.34151		9.14063	35.00000	O
4-Nitrophenol	0.09647	0.09880	0.10749				AVG		0.10092		5.75422	35.00000	O
Diethylphthalate	1.53003	1.12129	1.02107				AVG		1.22413		22.02494	35.00000	O
Fluorene	1.30797	0.90496	0.76693				AVG		0.99329		28.30261	35.00000	O
4-Chlorophenyl-phenylether	0.60854	0.40883	0.32353				AVG		0.44697		32.72755	35.00000	O
4,6-Dinitro-2-Methylphenol	0.09081	0.11872	0.10897				AVG		0.10617		13.34537	35.00000	O
N-Nitrosodiphenylamine	0.66632	0.55948	0.44776				AVG		0.55785		19.59106	35.00000	O
4-Bromophenyl-phenylether	0.20301	0.15822	0.13058				AVG		0.16394		22.29818	35.00000	O
Hexachlorobenzene	0.21939	0.17590	0.14828				AVG		0.18119		19.78397	35.00000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** TJ0540
Project : Fort Devens/DCL Leachate 68016363 **Instrument ID:** GCMS-U
Lab File IDs : U6045.D U6044.D U6046.D **Column ID:**
Calibration Date(s): 26-OCT-16 09:22
26-OCT-16 10:23

Pentachlorophenol	0.10897	0.08391	0.06765				AVG		0.08684		23.9717(	35.00000	O
Phenanthrene	1.02958	0.74544	0.55776				AVG		0.77759		30.5486(	35.00000	O
Anthracene	1.13985	0.86490	0.68355				AVG		0.89610		25.6379-	35.00000	O
Di-n-butylphthalate	1.50840	1.03732	0.76683				AVG		1.10418		33.9872(	35.00000	O
Fluoranthene	1.07974	0.72854	0.56510				AVG		0.79113		33.2396:	35.00000	O
Benzidine	0.32491	0.33484	0.32190				AVG		0.32721		2.06911	35.00000	O
Pyrene	1.59596	1.46840	1.50740				AVG		1.52392		4.28926	35.00000	O
Butylbenzylphthalate	0.80539	0.71349	0.66160				AVG		0.72682		10.0184:	35.00000	O
Benzo(a)anthracene	0.98050	0.89482	0.82910				AVG		0.90147		8.42156	35.00000	O
3,3'-Dichlorobenzidine	0.20303	0.23101	0.21500				AVG		0.21635		6.48827	35.00000	O
Chrysene	1.03696	0.88961	0.81993				AVG		0.91550		12.1038:	35.00000	O
bis(2-Ethylhexyl)phthalate	1.15211	0.97451	0.92171				AVG		1.01611		11.8787:	35.00000	O
Di-n-octylphthalate	2.98512	2.46724	2.58181				AVG		2.67806		10.1576(	35.00000	O
Benzo(b)fluoranthene	1.14735	1.02522	0.98966				AVG		1.05408		7.84682	35.00000	O
Benzo(k)fluoranthene	1.25831	1.07111	1.11774				AVG		1.14905		8.48058	35.00000	O
Benzo(a)pyrene	0.87904	0.90811	0.91100				AVG		0.89938		1.96552	35.00000	O
Indeno(1,2,3-cd)pyrene	0.42514	0.47079	0.51600				AVG		0.47064		9.65294	35.00000	O
Dibenzo(a,h)anthracene	0.38531	0.51025	0.54943				AVG		0.48166		17.7954(	35.00000	O
Benzo(g,h,i)perylene	0.52210	0.52526	0.55003				AVG		0.53246		2.87256	35.00000	O
2-Fluorophenol	1.28578	1.34592	1.27820				AVG		1.30330		2.84702	35.00000	
Phenol-D6	1.56638	1.61895	1.44107				AVG		1.54213		5.92616	35.00000	
Nitrobenzene-D5	0.33445	0.33166	0.28675				AVG		0.31762		8.42915	35.00000	
2-Fluorobiphenyl	1.45750	1.13091	0.99489				AVG		1.19443		19.9055:	35.00000	
2,4,6-Tribromophenol	0.16803	0.15436	0.14223				AVG		0.15487		8.33430	35.00000	
Terphenyl-D14	0.91124	0.83710	0.83673				AVG		0.86169		4.98020	35.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6047.D
Report Date: 21-Dec-2016 10:25

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa01716
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: WG193442-5
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: 625_ind_chk.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-u.i\U102616.b\U625A039.m
Misc Info: WG193442,WG193442,WG193442-3

	SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1	N-Nitrosodimethyla	60.0	64.0	106.70	80-120
5	Phenol	60.0	60.3	100.57	80-120
3	Bis(2-Chloroethyl)	60.0	58.7	97.81	80-120
6	2-Chlorophenol	60.0	59.6	99.43	80-120
7	1,3-Dichlorobenzen	60.0	62.2	103.69	80-120
9	1,4-Dichlorobenzen	60.0	63.5	105.90	80-120
10	1,2-Dichlorobenzen	60.0	61.1	101.91	80-120
12	2-Methylphenol	60.0	54.0	90.05	80-120
11	Bis(2-chloroisopro	60.0	56.3	93.81	80-120
14	Hexachloroethane	60.0	62.0	103.26	80-120
13	N-Nitroso-di-n-pro	60.0	58.6	97.69	80-120
17	Nitrobenzene	60.0	68.5	114.22	80-120
18	Isophorone	60.0	53.6	89.40	80-120
19	2-Nitrophenol	60.0	63.8	106.29	80-120
20	2,4-Dimethylphenol	60.0	61.5	102.47	80-120
21	Bis(2-Chloroethoxy	60.0	51.8	86.40	80-120
22	2,4-Dichlorophenol	60.0	62.1	103.48	80-120
23	1,2,4-Trichloroben	60.0	61.8	102.95	80-120
26	Naphthalene	60.0	63.2	105.42	80-120
28	Hexachlorobutadien	60.0	64.9	108.17	80-120
29	4-Chloro-3-Methylp	60.0	70.4	117.41	80-120
30	2-Methylnaphthalen	60.0	65.9	109.78	80-120
31	Hexachlorocyclopen	60.0	52.4	87.41	80-120
32	2,4,6-Trichlorophe	60.0	62.0	103.41	80-120
34	2,4,5-Trichlorophe	60.0	66.5	110.82	80-120
35	2-Chloronaphthalen	60.0	51.7	86.21	80-120
38	Acenaphthylene	60.0	55.7	92.90	80-120
36	Dimethyl Phthalate	60.0	62.5	104.22	80-120
37	2,6-Dinitrotoluene	60.0	69.1	115.12	80-120
40	Acenaphthene	60.0	60.3	100.57	80-120
41	2,4-Dinitrophenol	60.0	65.4	109.04	80-120
44	4-Nitrophenol	60.0	68.8	114.75	80-120
42	Dibenzofuran	60.0	58.5	97.44	80-120
43	2,4-Dinitrotoluene	60.0	55.0	91.74	80-120
46	Fluorene	60.0	64.8	108.10	80-120
45	Diethylphthalate	60.0	62.6	104.33	80-120
47	4-Chlorophenyl-phe	60.0	64.6	107.69	80-120
48	4,6-Dinitro-2-Meth	60.0	70.6	117.62	80-120
49	N-Nitrosodiphenyla	60.0	47.0	78.30*	80-120
50	1,2-Diphenylhydraz	60.0	59.4	99.05	80-120

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6047.D
Report Date: 21-Dec-2016 10:25

	SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
52	4-Bromophenyl-phen	60.0	66.7	111.10	80-120
53	Hexachlorobenzene	60.0	60.4	100.59	80-120
54	Pentachlorophenol	60.0	79.2	132.07*	80-120
56	Phenanthrene	60.0	68.0	113.35	80-120
57	Anthracene	60.0	62.8	104.60	80-120
59	Di-n-butylphthalat	60.0	64.9	108.16	80-120
60	Fluoranthene	60.0	60.9	101.45	80-120
61	Benzidine	60.0	14.9	24.88*	80-120
62	Pyrene	60.0	55.2	92.08	80-120
64	Butylbenzylphthala	60.0	61.4	102.42	80-120
65	Benzo(a)anthracene	60.0	61.2	101.92	80-120
68	Chrysene	60.0	59.9	99.81	80-120
66	3,3'-Dichlorobenzi	60.0	51.3	85.44	80-120
69	bis(2-Ethylhexyl)p	60.0	58.5	97.45	80-120
70	Di-n-octylphthalat	60.0	58.1	96.83	80-120
71	Benzo(b)fluoranthe	60.0	62.7	104.44	80-120
72	Benzo(k)fluoranthe	60.0	58.8	98.07	80-120
73	Benzo(a)pyrene	60.0	60.4	100.76	80-120
75	Indeno(1,2,3-cd)py	60.0	60.7	101.20	80-120
76	Dibenzo(a,h)anthra	60.0	58.6	97.70	80-120
77	Benzo(g,h,i)peryle	60.0	57.2	95.25	80-120

	SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 2	2-Fluorophenol	100	0.000	*	10-80
$ 4	Phenol-D6	100	0.000	*	10-90
$ 16	Nitrobenzene-D5	50.0	0.000	*	41-91
$ 33	2-Fluorobiphenyl	50.0	0.000	*	43-90
$ 51	2,4,6-Tribromophe	100	0.000	*	37-112
$ 63	Terphenyl-D14	50.0	0.000	*	36-156

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6044.D
Report Date: 21-Dec-2016 11:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U102616.b\U6044.D
Lab Smp Id: WG193442-3
Inj Date : 26-OCT-2016 09:22 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG193442-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U102616.b\U625A039.m
Meth Date : 26-Oct-2016 13:31 cgomez Quant Type: ISTD
Cal Date : 07-SEP-2016 12:01 Cal File: U5318.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	1 N-Nitrosodimethylamine	42	2.665	2.676	(0.544)	222614	60.0000	61.6	
$	2 2-Fluorophenol	112	3.627	3.638	(0.740)	580203	60.0000	62.0	
	3 Bis(2-Chloroethyl)ether	93	4.611	4.622	(0.941)	501549	60.0000	59.4	
$	4 Phenol-D6	99	4.517	4.539	(0.922)	697904	60.0000	63.0	
	5 Phenol	94	4.538	4.559	(0.926)	722684	60.0000	60.9	
	6 2-Chlorophenol	128	4.683	4.694	(0.956)	591387	60.0000	62.8	
	7 1,3-Dichlorobenzene	146	4.838	4.849	(0.987)	577964	60.0000	61.6	
*	8 1,4-Dichlorobenzene-D4	152	4.900	4.901	(1.000)	287389	40.0000		
	9 1,4-Dichlorobenzene	146	4.921	4.922	(1.004)	539752	60.0000	60.8	
	10 1,2-Dichlorobenzene	146	5.097	5.098	(1.040)	533495	60.0000	63.0	
	11 Bis(2-chloroisopropyl) Ether	45	5.211	5.222	(1.063)	620438	60.0000	59.1	
	12 2-Methylphenol	108	5.201	5.253	(1.061)	537995	60.0000	79.2(H)	
	13 N-Nitroso-di-n-propylamine	70	5.387	5.408	(1.099)	302794	60.0000	59.7	
	14 Hexachloroethane	117	5.480	5.491	(1.118)	231896	60.0000	61.2	
	15 3&4-Methylphenol	108	5.408	5.439	(1.103)	501931	60.0000	58.4(H)	
$	16 Nitrobenzene-D5	82	5.542	5.563	(0.863)	547255	60.0000	62.6	
	17 Nitrobenzene	77	5.563	5.584	(0.866)	483862	60.0000	61.5	
	18 Isophorone	82	5.863	5.895	(0.913)	1033809	60.0000	62.0	
	19 2-Nitrophenol	139	5.956	5.967	(0.927)	323339	60.0000	66.0	
	20 2,4-Dimethylphenol	107	6.039	6.060	(0.940)	497450	60.0000	59.9	
	21 Bis(2-Chloroethoxy)methane	93	6.132	6.153	(0.955)	802284	60.0000	65.9	
	22 2,4-Dichlorophenol	162	6.267	6.288	(0.976)	421626	60.0000	64.2	

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6044.D
Report Date: 21-Dec-2016 11:05

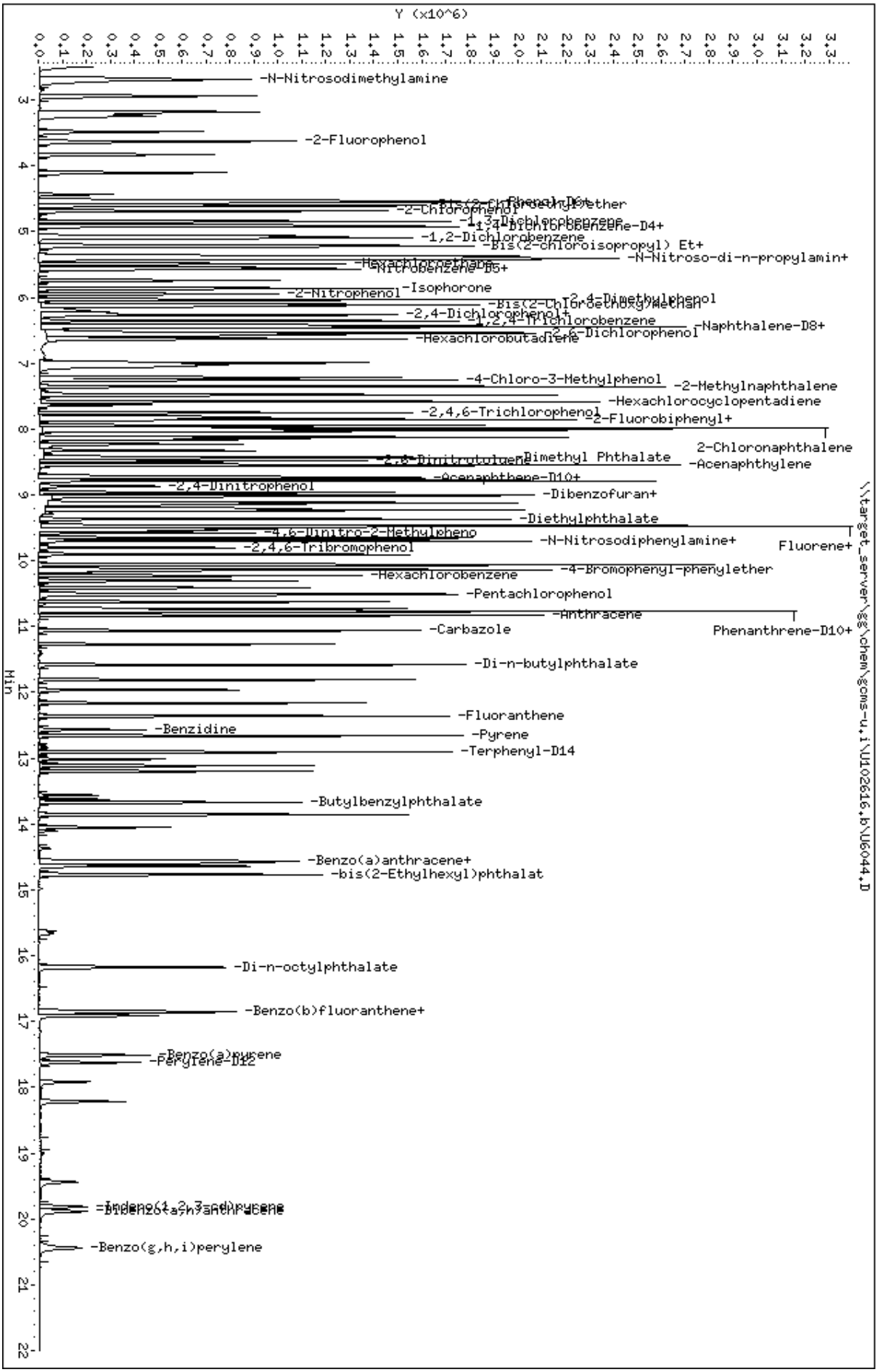
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	23 1,2,4-Trichlorobenzene	180	6.360	6.371	(0.990)	416045	60.0000	60.3	
	24 Benzoic acid	122	6.246	6.319	(0.973)	269771	60.0000	69.3	
*	25 Naphthalene-D8	136	6.422	6.433	(1.000)	1100037	40.0000		
	26 Naphthalene	128	6.453	6.464	(1.005)	1260803	60.0000	57.8	
	27 2,6-Dichlorophenol	162	6.546	6.567	(1.019)	347245	60.0000	63.6	
	28 Hexachlorobutadiene	225	6.629	6.640	(1.032)	194832	60.0000	60.0	
	29 4-Chloro-3-Methylphenol	107	7.219	7.251	(1.124)	436931	60.0000	63.9	
	30 2-Methylnaphthalene	142	7.353	7.364	(1.145)	885168	60.0000	60.0	
	31 Hexachlorocyclopentadiene	237	7.581	7.592	(0.868)	175906	60.0000	60.1	
	32 2,4,6-Trichlorophenol	196	7.747	7.768	(0.887)	275893	60.0000	60.6	
$	33 2-Fluorobiphenyl	172	7.850	7.861	(0.899)	868926	60.0000	56.8	
	34 2,4,5-Trichlorophenol	196	7.809	7.830	(0.894)	300696	60.0000	64.1	
	35 2-Chloronaphthalene	162	7.995	8.016	(0.916)	909385	60.0000	62.4	
	36 Dimethyl Phthalate	163	8.430	8.461	(0.966)	921284	60.0000	57.3	
	37 2,6-Dinitrotoluene	165	8.482	8.513	(0.972)	209836	60.0000	57.4	
	38 Acenaphthylene	152	8.544	8.555	(0.979)	1244292	60.0000	55.3	
*	39 Acenaphthene-D10	164	8.730	8.741	(1.000)	512230	40.0000		
	40 Acenaphthene	153	8.782	8.793	(1.006)	727498	60.0000	56.1	
	41 2,4-Dinitrophenol	184	8.864	8.896	(1.015)	125210	60.0000	62.2	
	42 Dibenzofuran	168	9.009	9.031	(1.032)	971474	60.0000	56.1	
	43 2,4-Dinitrotoluene	165	9.030	9.072	(1.034)	239364	60.0000	54.7	
	44 4-Nitrophenol	109	9.009	9.041	(1.032)	75916	60.0000	58.7	
	45 Diethylphthalate	149	9.372	9.393	(1.074)	861541	60.0000	55.0	
	46 Fluorene	166	9.475	9.486	(1.085)	695323	60.0000	54.7	
	47 4-Chlorophenyl-phenylether	204	9.485	9.497	(1.087)	314121	60.0000	54.9	
	48 4,6-Dinitro-2-Methylphenol	198	9.579	9.621	(0.893)	146421	60.0000	67.1	
	49 N-Nitrosodiphenylamine	169	9.661	9.683	(0.901)	690010	60.0000	60.2	
	50 1,2-Diphenylhydrazine	77	9.703	9.714	(0.904)	947049	60.0000	59.7	
$	51 2,4,6-Tribromophenol	330	9.806	9.828	(1.123)	118599	60.0000	59.8	
	52 4-Bromophenyl-phenylether	248	10.148	10.159	(0.946)	195132	60.0000	57.9	
	53 Hexachlorobenzene	284	10.231	10.242	(0.954)	216943	60.0000	58.2	
	54 Pentachlorophenol	266	10.521	10.532	(0.981)	103485	60.0000	58.0	
*	55 Phenanthrene-D10	188	10.728	10.739	(1.000)	822207	40.0000		
	56 Phenanthrene	178	10.769	10.780	(1.004)	919359	60.0000	57.5	
	57 Anthracene	178	10.831	10.852	(1.010)	1066696	60.0000	57.9	
	58 Carbazole	167	11.059	11.080	(1.031)	865401	60.0000	57.6	
	59 Di-n-butylphthalate	149	11.576	11.587	(1.079)	1279341	60.0000	56.4	
	60 Fluoranthene	202	12.363	12.374	(1.152)	898519	60.0000	55.2(H)	
	61 Benzidine	184	12.570	12.581	(0.862)	203417	60.0000	61.4	
	62 Pyrene	202	12.663	12.674	(0.868)	892070	60.0000	57.8	
$	63 Terphenyl-D14	244	12.911	12.912	(0.885)	508549	60.0000	58.3	
	64 Butylbenzylphthalate	149	13.677	13.678	(0.938)	433453	60.0000	58.9	
	65 Benzo(a)anthracene	228	14.567	14.578	(0.999)	543613	60.0000	59.6	
	66 3,3'-Dichlorobenzidine	252	14.557	14.558	(0.998)	140342	60.0000	64.1	
*	67 Chrysene-D12	240	14.588	14.599	(1.000)	405009	40.0000		
	68 Chrysene	228	14.640	14.651	(1.004)	540448	60.0000	58.3	
	69 bis(2-Ethylhexyl)phthalate	149	14.764	14.765	(1.012)	592030	60.0000	57.5	
	70 Di-n-octylphthalate	149	16.182	16.183	(0.918)	863717	60.0000	55.3	
	71 Benzo(b)fluoranthene	252	16.855	16.866	(0.957)	358904	60.0000	58.4	
	72 Benzo(k)fluoranthene	252	16.917	16.918	(0.960)	374969	60.0000	55.9(H)	
	73 Benzo(a)pyrene	252	17.507	17.518	(0.994)	317907	60.0000	60.6	
*	74 Perylene-D12	264	17.621	17.621	(1.000)	233383	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.815	19.816	(1.125)	164812	60.0000	60.0	
	76 Dibenzo(a,h)anthracene	278	19.887	19.888	(1.129)	178624	60.0000	63.6	

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6044.D
Report Date: 21-Dec-2016 11:05

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
77 Benzo(g,h,i)perylene	276	20.436	20.447	(1.160)	183879	60.0000	59.2	

QC Flag Legend

H - Operator selected an alternate compound hit.



Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6044.D
Date : 26-OCT-2016 09:22
Client ID:
Sample Info: WG193442-3
Volume Injected (uL): 1.0
Column phase:

Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6045.D
Report Date: 21-Dec-2016 11:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U102616.b\U6045.D
Lab Smp Id: WG193442-2
Inj Date : 26-OCT-2016 09:53 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG193442-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U102616.b\U625A039.m
Meth Date : 26-Oct-2016 13:31 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 09:53 Cal File: U6045.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	1 N-Nitrosodimethylamine	42	2.666	2.676	(0.544)	17311	5.00000	4.81(a)	
$	2 2-Fluorophenol	112	3.628	3.638	(0.740)	45945	5.00000	4.93(a)	
	3 Bis(2-Chloroethyl)ether	93	4.601	4.622	(0.939)	48280	5.00000	5.75	
$	4 Phenol-D6	99	4.508	4.539	(0.920)	55972	5.00000	5.08	
	5 Phenol	94	4.529	4.559	(0.924)	63595	5.00000	5.39	
	6 2-Chlorophenol	128	4.674	4.694	(0.954)	48668	5.00000	5.19	
	7 1,3-Dichlorobenzene	146	4.839	4.849	(0.987)	52992	5.00000	5.68	
*	8 1,4-Dichlorobenzene-D4	152	4.901	4.901	(1.000)	285866	40.0000		
	9 1,4-Dichlorobenzene	146	4.912	4.922	(1.002)	51649	5.00000	5.85	
	10 1,2-Dichlorobenzene	146	5.088	5.098	(1.038)	49905	5.00000	5.93	
	11 Bis(2-chloroisopropyl) Ether	45	5.212	5.222	(1.063)	61386	5.00000	5.88	
	12 2-Methylphenol	108	5.201	5.253	(1.061)	44445	5.00000	5.69(H)	
	13 N-Nitroso-di-n-propylamine	70	5.367	5.408	(1.095)	30960	5.00000	6.14(Q)	
	14 Hexachloroethane	117	5.481	5.491	(1.118)	21987	5.00000	5.83	
	15 3&4-Methylphenol	108	5.388	5.439	(1.099)	48613	5.00000	5.51(H)	
$	16 Nitrobenzene-D5	82	5.533	5.563	(0.861)	43647	5.00000	5.26	
	17 Nitrobenzene	77	5.553	5.584	(0.865)	42501	5.00000	5.69	
	18 Isophorone	82	5.854	5.895	(0.911)	81188	5.00000	5.13	
	19 2-Nitrophenol	139	5.947	5.967	(0.926)	23634	5.00000	5.09	
	20 2,4-Dimethylphenol	107	6.029	6.060	(0.939)	44127	5.00000	5.60	
	21 Bis(2-Chloroethoxy)methane	93	6.133	6.153	(0.955)	60548	5.00000	5.24	
	22 2,4-Dichlorophenol	162	6.278	6.288	(0.977)	34110	5.00000	5.48	

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6045.D
Report Date: 21-Dec-2016 11:05

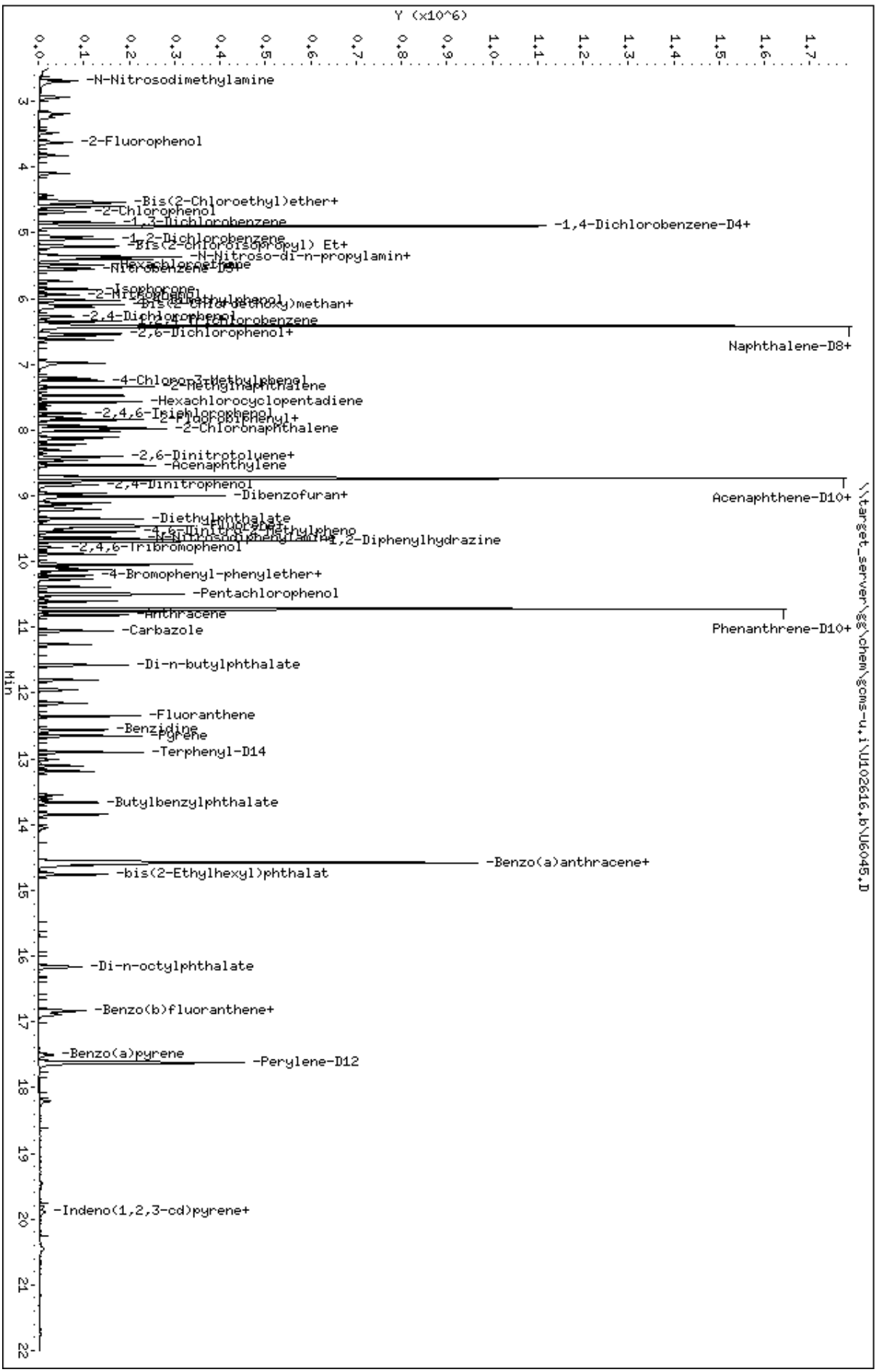
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	23 1,2,4-Trichlorobenzene	180	6.350	6.371	(0.989)	39381	5.00000	6.01	
	24 Benzoic acid	122	6.143	6.319	(0.956)	16049	5.00000	4.34(a)	
*	25 Naphthalene-D8	136	6.423	6.433	(1.000)	1044016	40.0000		
	26 Naphthalene	128	6.443	6.464	(1.003)	130942	5.00000	6.32	
	27 2,6-Dichlorophenol	162	6.547	6.567	(1.019)	30764	5.00000	5.93	
	28 Hexachlorobutadiene	225	6.630	6.640	(1.032)	19186	5.00000	6.22	
	29 4-Chloro-3-Methylphenol	107	7.209	7.251	(1.122)	34435	5.00000	5.31	
	30 2-Methylnaphthalene	142	7.344	7.364	(1.143)	84699	5.00000	6.05	
	31 Hexachlorocyclopentadiene	237	7.572	7.592	(0.867)	13716	5.00000	5.08	
	32 2,4,6-Trichlorophenol	196	7.748	7.768	(0.887)	22318	5.00000	5.32	
$	33 2-Fluorobiphenyl	172	7.841	7.861	(0.898)	86125	5.00000	6.10	
	34 2,4,5-Trichlorophenol	196	7.810	7.830	(0.895)	22447	5.00000	5.19	
	35 2-Chloronaphthalene	162	7.986	8.016	(0.915)	73408	5.00000	5.46(M)	M6
	36 Dimethyl Phthalate	163	8.400	8.461	(0.962)	82883	5.00000	5.58(M)	M6
	37 2,6-Dinitrotoluene	165	8.462	8.513	(0.969)	17867	5.00000	5.29	
	38 Acenaphthylene	152	8.534	8.555	(0.977)	126672	5.00000	6.10	
*	39 Acenaphthene-D10	164	8.731	8.741	(1.000)	472727	40.0000		
	40 Acenaphthene	153	8.762	8.793	(1.004)	74765	5.00000	6.25	
	41 2,4-Dinitrophenol	184	8.834	8.896	(1.012)	35758	25.0000	19.2(a)	
	42 Dibenzofuran	168	9.000	9.031	(1.031)	97572	5.00000	6.11(Q)	
	43 2,4-Dinitrotoluene	165	9.000	9.072	(1.031)	22090	5.00000	5.47(Q)	
	44 4-Nitrophenol	109	9.000	9.041	(1.031)	22801	20.0000	19.1(aQ)	
	45 Diethylphthalate	149	9.352	9.393	(1.071)	90411	5.00000	6.25	
	46 Fluorene	166	9.466	9.486	(1.084)	77289	5.00000	6.58	
	47 4-Chlorophenyl-phenylether	204	9.476	9.497	(1.085)	35959	5.00000	6.81	
	48 4,6-Dinitro-2-Methylphenol	198	9.559	9.621	(0.892)	43888	25.0000	21.4	
	49 N-Nitrosodiphenylamine	169	9.642	9.683	(0.900)	64409	5.00000	5.97	
	50 1,2-Diphenylhydrazine	77	9.683	9.714	(0.903)	343981	20.0000	23.0	
$	51 2,4,6-Tribromophenol	330	9.797	9.828	(1.122)	9929	5.00000	5.42	
	52 4-Bromophenyl-phenylether	248	10.128	10.159	(0.945)	19624	5.00000	6.19	
	53 Hexachlorobenzene	284	10.221	10.242	(0.954)	21207	5.00000	6.05	
	54 Pentachlorophenol	266	10.501	10.532	(0.980)	42134	20.0000	25.1	
*	55 Phenanthrene-D10	188	10.718	10.739	(1.000)	773311	40.0000		
	56 Phenanthrene	178	10.749	10.780	(1.003)	99523	5.00000	6.62	
	57 Anthracene	178	10.811	10.852	(1.009)	110182	5.00000	6.36	
	58 Carbazole	167	11.049	11.080	(1.031)	88211	5.00000	6.24	
	59 Di-n-butylphthalate	149	11.567	11.587	(1.079)	145808	5.00000	6.83	
	60 Fluoranthene	202	12.353	12.374	(1.153)	104372	5.00000	6.82	
	61 Benzidine	184	12.571	12.581	(0.862)	107121	25.0000	24.8(a)	
	62 Pyrene	202	12.654	12.674	(0.868)	105237	5.00000	5.24	
$	63 Terphenyl-D14	244	12.902	12.912	(0.885)	60087	5.00000	5.29	
	64 Butylbenzylphthalate	149	13.668	13.678	(0.938)	53107	5.00000	5.54	
	65 Benzo(a)anthracene	228	14.558	14.578	(0.999)	64654	5.00000	5.44	
	66 3,3'-Dichlorobenzidine	252	14.558	14.558	(0.999)	13388	5.00000	4.69(a)	
*	67 Chrysene-D12	240	14.579	14.599	(1.000)	527518	40.0000		
	68 Chrysene	228	14.620	14.651	(1.003)	68377	5.00000	5.66	
	69 bis(2-Ethylhexyl)phthalate	149	14.755	14.765	(1.012)	75970	5.00000	5.67	
	70 Di-n-octylphthalate	149	16.162	16.183	(0.917)	111144	5.00000	5.57	
	71 Benzo(b)fluoranthene	252	16.835	16.866	(0.955)	42719	5.00000	5.44	
	72 Benzo(k)fluoranthene	252	16.897	16.918	(0.959)	46850	5.00000	5.48(H)	
	73 Benzo(a)pyrene	252	17.508	17.518	(0.994)	32729	5.00000	4.89(a)	
*	74 Perylene-D12	264	17.622	17.621	(1.000)	297861	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.826	19.816	(1.125)	15829	5.00000	4.52(a)	
	76 Dibenzo(a,h)anthracene	278	19.899	19.888	(1.129)	14346	5.00000	4.00(a)	

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6045.D
Report Date: 21-Dec-2016 11:05

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
77 Benzo(g,h,i)perylene	276	20.447	20.447	(1.160)	19439	5.00000	4.90(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Y (x10^6)
Min
-N-Nitrosodimethylamine
-2-Fluorophenol
-Bis(2-Chloroethyl)ether+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Bis(2-chloroisopropyl) Et+
-N-Nitroso-di-n-propylamin+
-Hexachloroethane
-Nitrobenzene-D5+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Bis(2-chloroethoxy)methan+
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-2,6-Dichlorophenol+
Naphthalene-D8+
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-Hexachlorocyclopentadiene
-2,4,6-Trichlorophenol
2-Fluorobiphenyl+
-2-Chloronaphthalene
-2,6-Dinitrotoluene+
-Acenaphthylene
-2,4-Dinitrophenol
-Dibenzofuran+
Acenaphthene-D10+
-Diethylphthalate
-Fluorene
-4,6-Dinitro-2-Methylpheno
-N-Nitrosodiphenylamine+
1,2-Diphenylhydrazine
-2,4,6-Tribromophenol
-4-Bromophenyl-phenylether+
-Pentachlorophenol
-Anthracene
-Carbazole
Phenanthrene-D10+
-Di-n-butylphthalate
-Fluoranthene
-Benzidine
-Pyrene
-Terphenyl-D14
-Butylbenzylphthalate
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6045.D
Date : 26-OCT-2016 09:53
Client ID:
Sample Info: WG193442-2
Volume Injected (uL): 1.0
Column phase:
Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25
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Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6046.D
Report Date: 21-Dec-2016 11:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U102616.b\U6046.D
Lab Smp Id: WG193442-4
Inj Date : 26-OCT-2016 10:23 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG193442-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U102616.b\U625A039.m
Meth Date : 26-Oct-2016 13:31 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 4 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	1	N-Nitrosodimethylamine	42	2.676	2.676	(0.546)	493564	125.000	126(A)	
$	2	2-Fluorophenol	112	3.638	3.638	(0.742)	1238643	125.000	122	
	3	Bis(2-Chloroethyl)ether	93	4.622	4.622	(0.943)	976325	125.000	107	
$	4	Phenol-D6	99	4.539	4.539	(0.926)	1396474	125.000	117	
	5	Phenol	94	4.559	4.559	(0.930)	1453164	125.000	113	
	6	2-Chlorophenol	128	4.694	4.694	(0.958)	1163042	125.000	114	
	7	1,3-Dichlorobenzene	146	4.849	4.849	(0.989)	1058279	125.000	104	
*	8	1,4-Dichlorobenzene-D4	152	4.901	4.901	(1.000)	310098	40.0000		
	9	1,4-Dichlorobenzene	146	4.922	4.922	(1.004)	977010	125.000	102	
	10	1,2-Dichlorobenzene	146	5.098	5.098	(1.040)	871007	125.000	95.4	
	11	Bis(2-chloroisopropyl) Ether	45	5.222	5.222	(1.065)	1189597	125.000	105(Q)	
	12	2-Methylphenol	108	5.253	5.253	(1.072)	1138254	125.000	120(H)	
	13	N-Nitroso-di-n-propylamine	70	5.408	5.408	(1.103)	530609	125.000	97.0	
	14	Hexachloroethane	117	5.491	5.491	(1.120)	415488	125.000	102	
	15	3&4-Methylphenol	108	5.439	5.439	(1.110)	876561	125.000	98.9(H)	
$	16	Nitrobenzene-D5	82	5.563	5.563	(0.865)	1106710	125.000	113	
	17	Nitrobenzene	77	5.584	5.584	(0.868)	924999	125.000	105	
	18	Isophorone	82	5.895	5.895	(0.916)	2199310	125.000	118	
	19	2-Nitrophenol	139	5.967	5.967	(0.928)	605760	125.000	110	
	20	2,4-Dimethylphenol	107	6.060	6.060	(0.942)	1025626	125.000	110	
	21	Bis(2-Chloroethoxy)methane	93	6.153	6.153	(0.957)	1456818	125.000	107	
	22	2,4-Dichlorophenol	162	6.288	6.288	(0.977)	767513	125.000	104	

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6046.D
Report Date: 21-Dec-2016 11:05

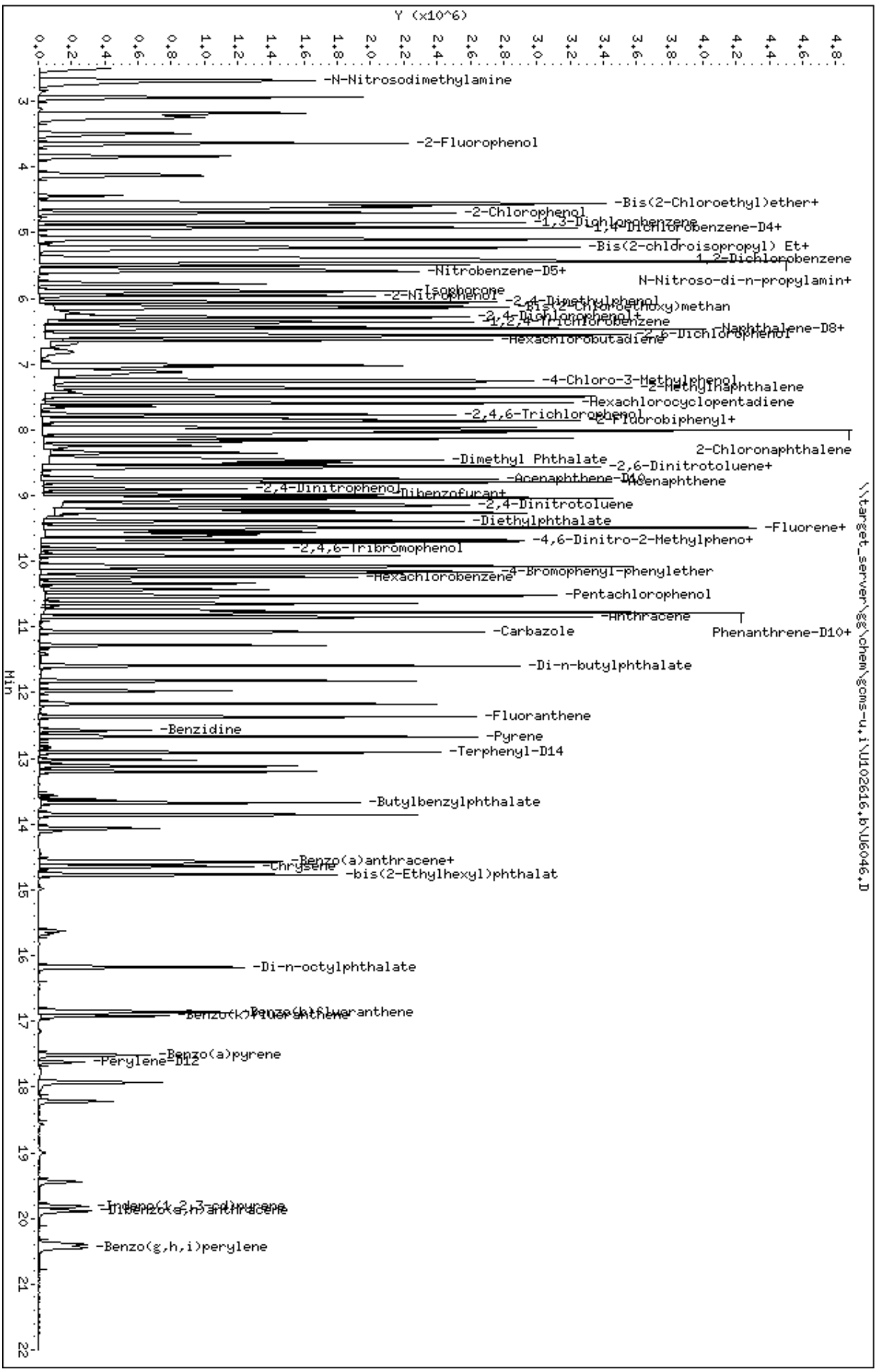
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	23 1,2,4-Trichlorobenzene	180	6.371	6.371	(0.990)	768195	125.000	99.1	
	24 Benzoic acid	122	6.319	6.319	(0.982)	533735	125.000	122(QM)	M6
*	25 Naphthalene-D8	136	6.433	6.433	(1.000)	1235046	40.0000		
	26 Naphthalene	128	6.464	6.464	(1.005)	2367331	125.000	96.6	
	27 2,6-Dichlorophenol	162	6.567	6.567	(1.021)	577687	125.000	94.2	
	28 Hexachlorobutadiene	225	6.640	6.640	(1.032)	344877	125.000	94.5	
	29 4-Chloro-3-Methylphenol	107	7.251	7.251	(1.127)	838501	125.000	109(Q)	
	30 2-Methylnaphthalene	142	7.364	7.364	(1.145)	1633680	125.000	98.7	
	31 Hexachlorocyclopentadiene	237	7.592	7.592	(0.869)	352275	125.000	123	
	32 2,4,6-Trichlorophenol	196	7.768	7.768	(0.889)	515987	125.000	116	
$	33 2-Fluorobiphenyl	172	7.861	7.861	(0.899)	1560930	125.000	104	
	34 2,4,5-Trichlorophenol	196	7.830	7.830	(0.896)	513353	125.000	112	
	35 2-Chloronaphthalene	162	8.016	8.016	(0.917)	1549549	125.000	108	
	36 Dimethyl Phthalate	163	8.461	8.461	(0.968)	1831852	125.000	116(M)	M9
	37 2,6-Dinitrotoluene	165	8.513	8.513	(0.974)	441946	125.000	123	
	38 Acenaphthylene	152	8.555	8.555	(0.979)	2359573	125.000	107	
*	39 Acenaphthene-D10	164	8.741	8.741	(1.000)	502063	40.0000		
	40 Acenaphthene	153	8.793	8.793	(1.006)	1294263	125.000	102	
	41 2,4-Dinitrophenol	184	8.896	8.896	(1.018)	294194	125.000	149(A)	
	42 Dibenzofuran	168	9.031	9.031	(1.033)	1787729	125.000	105	
	43 2,4-Dinitrotoluene	165	9.072	9.072	(1.038)	532121	125.000	124	
	44 4-Nitrophenol	109	9.041	9.041	(1.034)	168642	125.000	133(A)	
	45 Diethylphthalate	149	9.393	9.393	(1.075)	1602009	125.000	104	
	46 Fluorene	166	9.486	9.486	(1.085)	1203271	125.000	96.5	
	47 4-Chlorophenyl-phenylether	204	9.497	9.497	(1.086)	507602	125.000	90.5	
	48 4,6-Dinitro-2-Methylphenol	198	9.621	9.621	(0.896)	299959	125.000	128(A)	
	49 N-Nitrosodiphenylamine	169	9.683	9.683	(0.902)	1232482	125.000	100	
	50 1,2-Diphenylhydrazine	77	9.714	9.714	(0.905)	1810568	125.000	106	
$	51 2,4,6-Tribromophenol	330	9.828	9.828	(1.124)	223151	125.000	115	
	52 4-Bromophenyl-phenylether	248	10.159	10.159	(0.946)	359421	125.000	99.6	
	53 Hexachlorobenzene	284	10.242	10.242	(0.954)	408157	125.000	102	
	54 Pentachlorophenol	266	10.532	10.532	(0.981)	186201	125.000	97.4	
*	55 Phenanthrene-D10	188	10.739	10.739	(1.000)	880818	40.0000		
	56 Phenanthrene	178	10.780	10.780	(1.004)	1535278	125.000	89.7	
	57 Anthracene	178	10.852	10.852	(1.011)	1881513	125.000	95.4(H)	
	58 Carbazole	167	11.080	11.080	(1.032)	1597241	125.000	99.2	
	59 Di-n-butylphthalate	149	11.587	11.587	(1.079)	2110736	125.000	86.8	
	60 Fluoranthene	202	12.374	12.374	(1.152)	1555465	125.000	89.3	
	61 Benzidine	184	12.581	12.581	(0.862)	327722	125.000	123	
	62 Pyrene	202	12.674	12.674	(0.868)	1534677	125.000	124	
$	63 Terphenyl-D14	244	12.912	12.912	(0.884)	851866	125.000	121	
	64 Butylbenzylphthalate	149	13.678	13.678	(0.937)	673568	125.000	114	
	65 Benzo(a)anthracene	228	14.578	14.578	(0.999)	844105	125.000	115	
	66 3,3'-Dichlorobenzidine	252	14.558	14.558	(0.997)	218886	125.000	124	
*	67 Chrysene-D12	240	14.599	14.599	(1.000)	325790	40.0000		
	68 Chrysene	228	14.651	14.651	(1.004)	834761	125.000	112	
	69 bis(2-Ethylhexyl)phthalate	149	14.765	14.765	(1.011)	938391	125.000	113	
	70 Di-n-octylphthalate	149	16.183	16.183	(0.918)	1329623	125.000	120	
	71 Benzo(b)fluoranthene	252	16.866	16.866	(0.957)	509673	125.000	117	
	72 Benzo(k)fluoranthene	252	16.918	16.918	(0.960)	575631	125.000	122(H)	
	73 Benzo(a)pyrene	252	17.518	17.518	(0.994)	469163	125.000	127(A)	
*	74 Perylene-D12	264	17.621	17.621	(1.000)	164799	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.816	19.816	(1.125)	265738	125.000	137(A)	
	76 Dibenzo(a,h)anthracene	278	19.888	19.888	(1.129)	282954	125.000	142(A)	

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6046.D
Report Date: 21-Dec-2016 11:05

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
77 Benzo(g,h,i)perylene	276	20.447	20.447	(1.160)	283262	125.000	129(A)	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 26-OCT-2016 10:23
Client ID:
Sample Info: WG193442-4
Volume Injected (uL): 1.0
Column phase:
Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25
Y (x10^6)
Min
-N-Nitrosodimethylamine
-2-Fluorophenol
-Bis(2-Chloroethyl)ether+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-Bis(2-chldroisopropyl) Et+
1,2-Dichlorobenzene
-Nitrobenzene-D5+
N-Nitroso-di-n-propylamin+
Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-2,6-Dichlorophenol
-Hexachlorobutadiene
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-Hexachlorocyclopentadiene
-2,4,6-Trichlorophenol
-2-Fluorobiphenyl+
2-Chloronaphthalene
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-Acenaphthene-D10
-Acenaphthene
-2,4-Dinitrophenol
Dibenzofuran+
-2,4-Dinitrotoluene
-Diethylphthalate
-Fluorene+
-4,6-Dinitro-2-Methylpheno+
-2,4,6-Tribromophenol
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Anthracene
Phenanthrene-D10+
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Benzidine
-Pyrene
-Terphenyl-D14
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene
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Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6047.D
Report Date: 21-Dec-2016 10:25

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U102616.b\U6047.D
Lab Smp Id: WG193442-5
Inj Date : 26-OCT-2016 10:54 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG193442-5
Misc Info : WG193442,WG193442,WG193442-3
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U102616.b\U625A039.m
Meth Date : 26-Oct-2016 13:31 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 5 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	N-Nitrosodimethylamine	42	2.665	2.676	(0.544)	209691	64.0223	64.0	
3	Bis(2-Chloroethyl)ether	93	4.600	4.622	(0.939)	448273	58.6845	58.7	
5	Phenol	94	4.538	4.559	(0.926)	648555	60.3421	60.3	
6	2-Chlorophenol	128	4.683	4.694	(0.956)	508993	59.6562	59.6	
7	1,3-Dichlorobenzene	146	4.838	4.849	(0.987)	528366	62.2152	62.2	
* 8	1,4-Dichlorobenzene-D4	152	4.900	4.901	(1.000)	260256	40.0000		
9	1,4-Dichlorobenzene	146	4.921	4.922	(1.004)	510661	63.5395	63.5	
10	1,2-Dichlorobenzene	146	5.097	5.098	(1.040)	468504	61.1437	61.1	
11	Bis(2-chloroisopropyl) Ether	45	5.211	5.222	(1.063)	535280	56.2884	56.3(Q)	
12	2-Methylphenol	108	5.200	5.253	(1.061)	429618	54.0284	54.0(H)	
13	N-Nitroso-di-n-propylamine	70	5.376	5.408	(1.097)	269049	58.6164	58.6(Q)	
14	Hexachloroethane	117	5.480	5.491	(1.118)	212569	61.9546	62.0	
15	3&4-Methylphenol	108	5.387	5.439	(1.099)	426663	57.3660	57.4(QH)	
17	Nitrobenzene	77	5.563	5.584	(0.866)	475501	68.5302	68.5	
18	Isophorone	82	5.863	5.895	(0.913)	788280	53.6390	53.6	
19	2-Nitrophenol	139	5.946	5.967	(0.926)	275215	63.7726	63.8	
20	2,4-Dimethylphenol	107	6.028	6.060	(0.939)	449841	61.4830	61.5	
21	Bis(2-Chloroethoxy)methane	93	6.132	6.153	(0.955)	556224	51.8419	51.8	
22	2,4-Dichlorophenol	162	6.266	6.288	(0.976)	359127	62.0857	62.1	
23	1,2,4-Trichlorobenzene	180	6.360	6.371	(0.990)	375875	61.7720	61.8	
24	Benzoic acid	122	6.277	6.319	(0.977)	425375	123.919	124(QM)	M9

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\U6047.D
Report Date: 21-Dec-2016 10:25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
*	25 Naphthalene-D8	136	6.422	6.433	(1.000)	969773	40.0000		
	26 Naphthalene	128	6.453	6.464	(1.005)	1216980	63.2505	63.2	
	27 2,6-Dichlorophenol	162	6.546	6.567	(1.019)	331325	68.8053	68.8	
	28 Hexachlorobutadiene	225	6.629	6.640	(1.032)	185904	64.9000	64.9	
	29 4-Chloro-3-Methylphenol	107	7.208	7.251	(1.122)	424649	70.4449	70.4	
	30 2-Methylnaphthalene	142	7.353	7.364	(1.145)	856358	65.8682	65.9	
	31 Hexachlorocyclopentadiene	237	7.581	7.592	(0.868)	136744	52.4454	52.4	
	32 2,4,6-Trichlorophenol	196	7.746	7.768	(0.887)	251444	62.0431	62.0	
	34 2,4,5-Trichlorophenol	196	7.798	7.830	(0.893)	277759	66.4906	66.5	
	35 2-Chloronaphthalene	162	7.995	8.016	(0.916)	671512	51.7270	51.7	
	36 Dimethyl Phthalate	163	8.419	8.461	(0.964)	896393	62.5324	62.5	
	37 2,6-Dinitrotoluene	165	8.481	8.513	(0.972)	225171	69.0746	69.1	
	38 Acenaphthylene	152	8.533	8.555	(0.977)	1116511	55.7389	55.7	
*	39 Acenaphthene-D10	164	8.730	8.741	(1.000)	456372	40.0000		
	40 Acenaphthene	153	8.781	8.793	(1.006)	696940	60.3407	60.3	
	41 2,4-Dinitrophenol	184	8.844	8.896	(1.013)	117313	65.4227	65.4	
	42 Dibenzofuran	168	9.009	9.031	(1.032)	901616	58.4641	58.5	
	43 2,4-Dinitrotoluene	165	9.020	9.072	(1.033)	214478	55.0458	55.0	
	44 4-Nitrophenol	109	8.989	9.041	(1.030)	79276	68.8507	68.8(Q)	
	45 Diethylphthalate	149	9.371	9.393	(1.074)	874312	62.6006	62.6	
	46 Fluorene	166	9.465	9.486	(1.084)	735025	64.8588	64.8	
	47 4-Chlorophenyl-phenylether	204	9.485	9.497	(1.087)	329511	64.6156	64.6	
	48 4,6-Dinitro-2-Methylphenol	198	9.568	9.621	(0.892)	137941	70.5695	70.6	
	49 N-Nitrosodiphenylamine	169	9.651	9.683	(0.900)	482494	46.9772	47.0(R)	
	50 1,2-Diphenylhydrazine	77	9.692	9.714	(0.904)	844471	59.4310	59.4	
	52 4-Bromophenyl-phenylether	248	10.137	10.159	(0.945)	201200	66.6604	66.7	
	53 Hexachlorobenzene	284	10.231	10.242	(0.954)	201345	60.3555	60.4	
	54 Pentachlorophenol	266	10.500	10.532	(0.979)	126702	79.2445	79.2(R)	
*	55 Phenanthrene-D10	188	10.727	10.739	(1.000)	736454	40.0000		
	56 Phenanthrene	178	10.758	10.780	(1.003)	973706	68.0126	68.0	
	57 Anthracene	178	10.831	10.852	(1.010)	1035422	62.7588	62.8	
	58 Carbazole	167	11.059	11.080	(1.031)	833148	61.8612	61.9	
	59 Di-n-butylphthalate	149	11.576	11.587	(1.079)	1319261	64.8939	64.9	
	60 Fluoranthene	202	12.363	12.374	(1.152)	886603	60.8691	60.9	
	61 Benzidine	184	12.570	12.581	(0.862)	50702	14.9268	14.9(aR)	
	62 Pyrene	202	12.663	12.674	(0.868)	873950	55.2455	55.2	
	64 Butylbenzylphthalate	149	13.667	13.678	(0.937)	463667	61.4539	61.4	
	65 Benzo(a)anthracene	228	14.567	14.578	(0.999)	572260	61.1523	61.2	
	66 3,3'-Dichlorobenzidine	252	14.557	14.558	(0.998)	115124	51.2611	51.3	
*	67 Chrysene-D12	240	14.588	14.599	(1.000)	415229	40.0000		
	68 Chrysene	228	14.629	14.651	(1.003)	569149	59.8882	59.9	
	69 bis(2-Ethylhexyl)phthalate	149	14.764	14.765	(1.012)	616728	58.4688	58.5	
	70 Di-n-octylphthalate	149	16.171	16.183	(0.918)	923608	58.0958	58.1	
	71 Benzo(b)fluoranthene	252	16.844	16.866	(0.956)	392099	62.6613	62.7	
	72 Benzo(k)fluoranthene	252	16.906	16.918	(0.959)	401365	58.8406	58.8(H)	
	73 Benzo(a)pyrene	252	17.507	17.518	(0.994)	322777	60.4552	60.4	
*	74 Perylene-D12	264	17.621	17.621	(1.000)	237456	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.815	19.816	(1.125)	169651	60.7214	60.7	
	76 Dibenzo(a,h)anthracene	278	19.887	19.888	(1.129)	167608	58.6179	58.6	
	77 Benzo(g,h,i)perylene	276	20.436	20.447	(1.160)	180654	57.1528	57.2	

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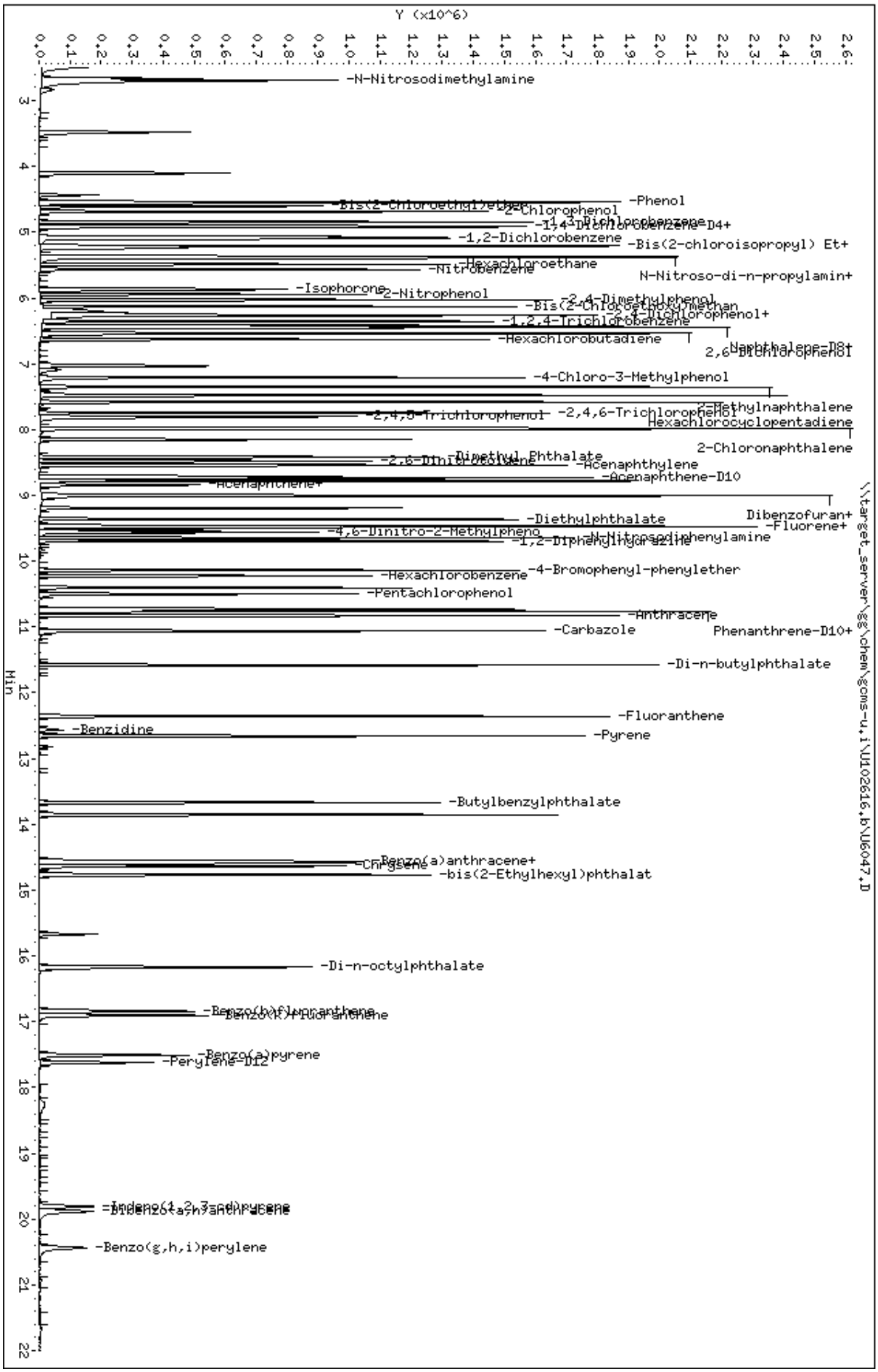
Report Date: 21-Dec-2016 10:25

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Y (x10^6)
Min
-N-Nitrosodimethylamine
-Phenol
-2-Chlorophenol
-1,4-Dichlorobenzene
-1,2-Dichlorobenzene
-Bis(2-chloroisopropyl) Et+
-Hexachloroethane
-Nitrobenzene
N-Nitroso-di-n-propylamin+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
2,6-Dichlorophenol
-4-Chloro-3-Methylphenol
-2,4,6-Trichlorophenol
2-Methylnaphthalene
Hexachlorocyclopentadiene
2-Chloronaphthalene
-Dimethyl Phthalate
-Acenaphthylene
-Acenaphthene-D10
-Acenaphthene+
Dibenzofuran+
-Fluorene+
-Diethylphthalate
-4,6-Dinitro-2-Methylpheno
-N-Nitrosodiphenylamine
-1,2-Diphenylhydrazine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Anthracene
-Carbazole
Phenanthrene-D10+
-Di-n-butylphthalate
-Fluoranthene
-Benzidine
-Pyrene
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz[a,h]anthracene
-Benzo(g,h,i)perylene
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Date : 26-OCT-2016 10:54
Client ID:
Sample Info: WG193442-5
Volume Injected (uL): 1.0
Column phase:
Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25
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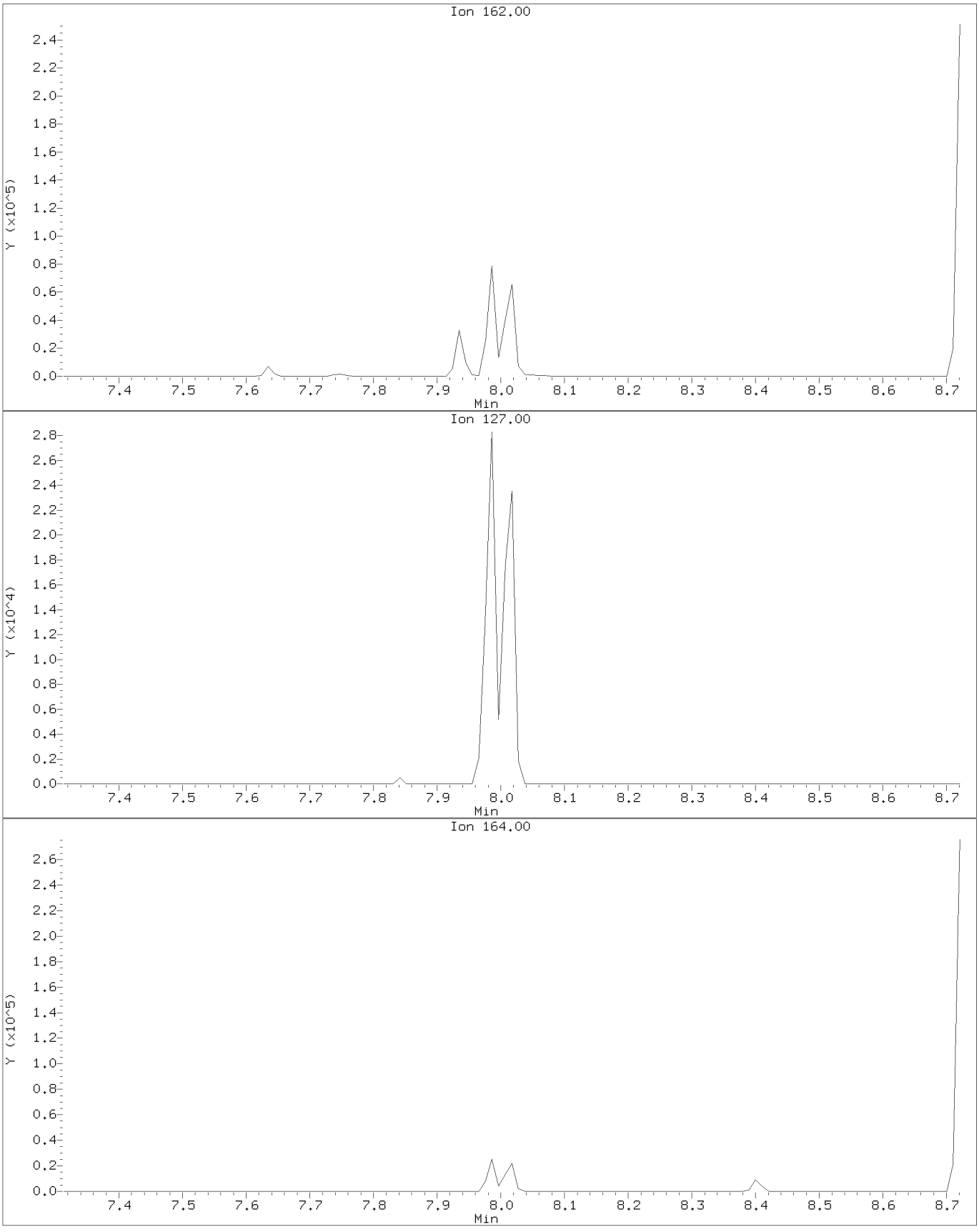
Instrument: gcms-u.i
Client Sample ID:

Compound: 2-Chloronaphthalene
CAS Number: 91-58-7



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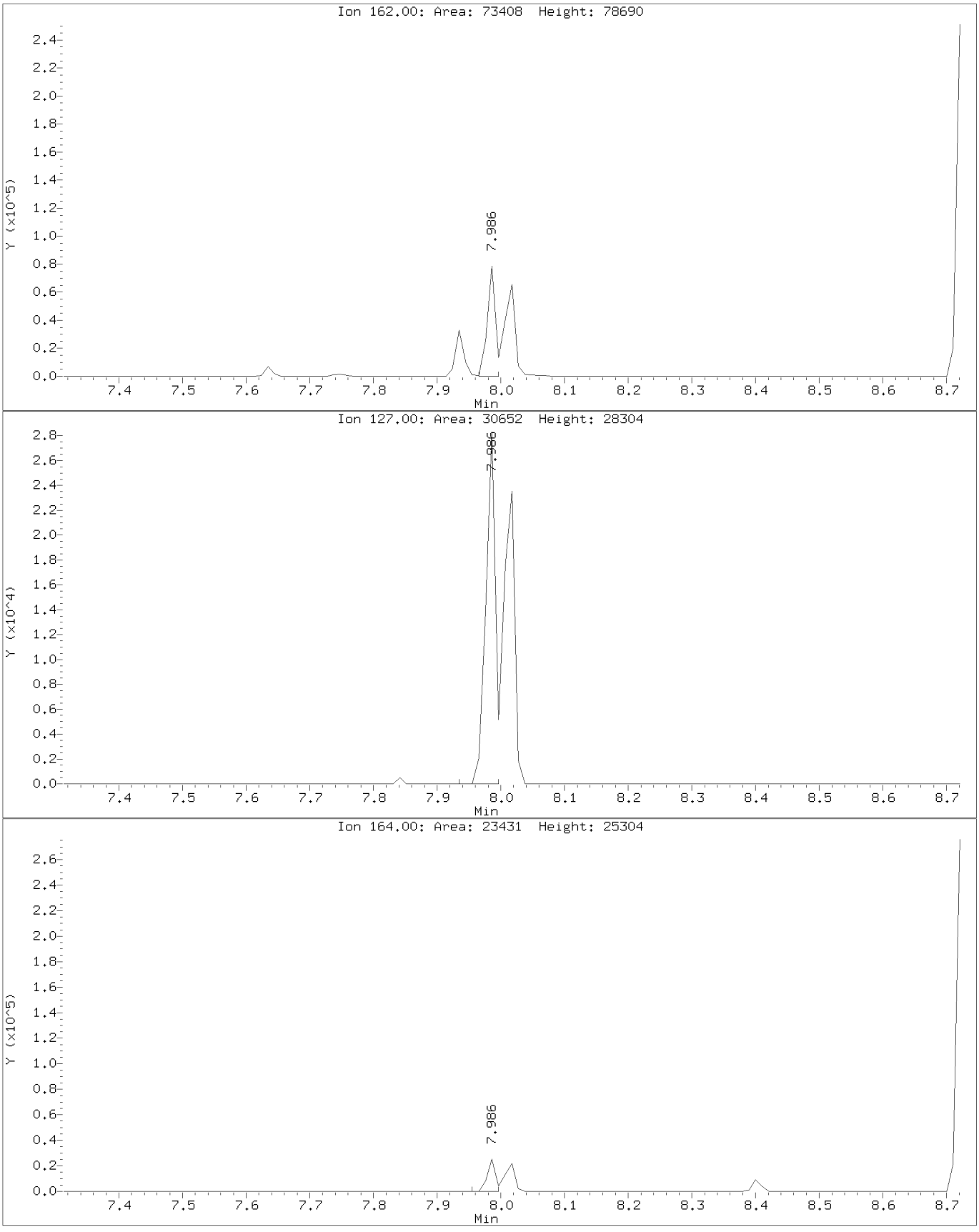
Compound: 2-Chloronaphthalene
CAS Number: 91-58-7



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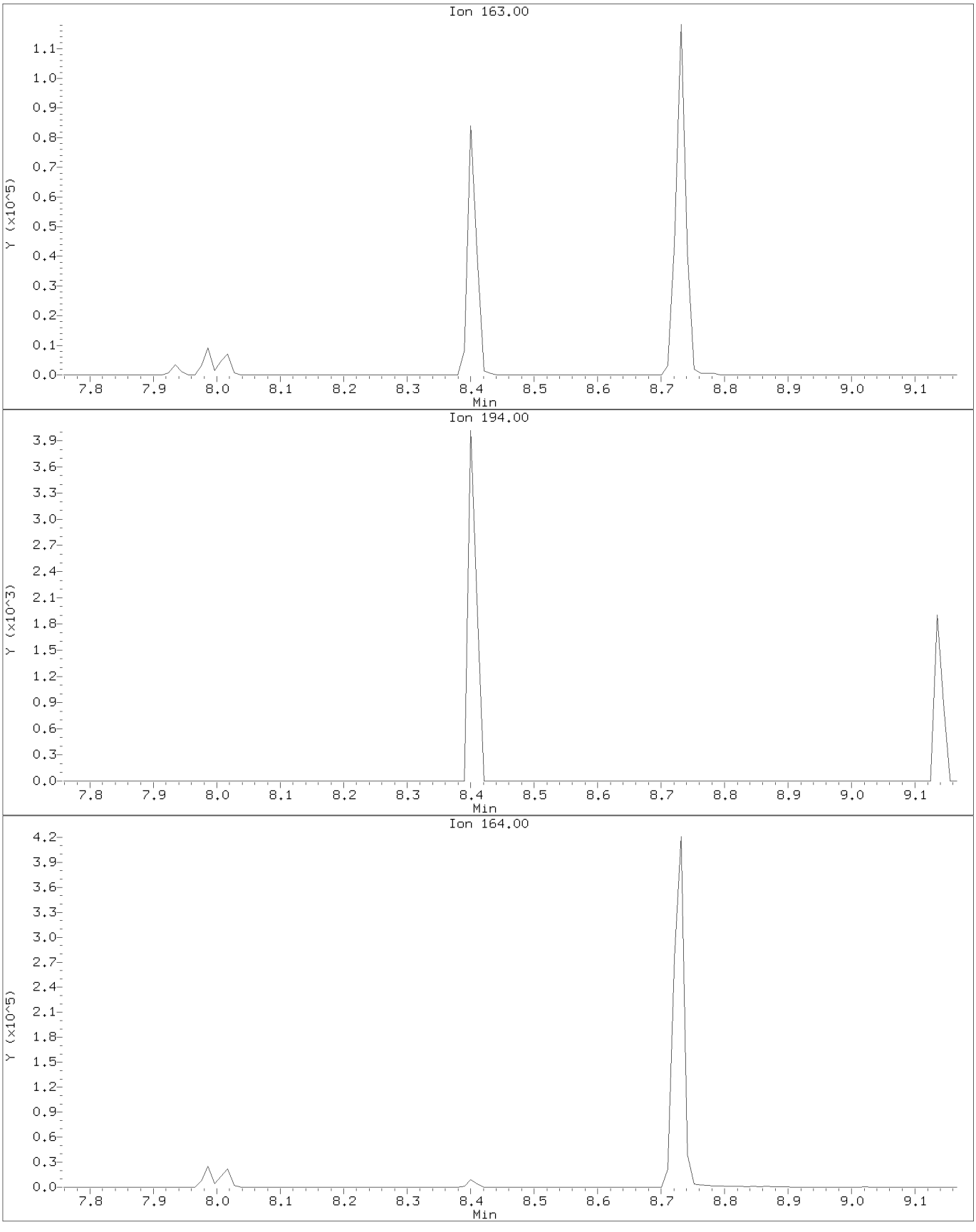
Client Sample ID:

Compound: Dimethyl Phthalate
CAS Number: 131-11-3



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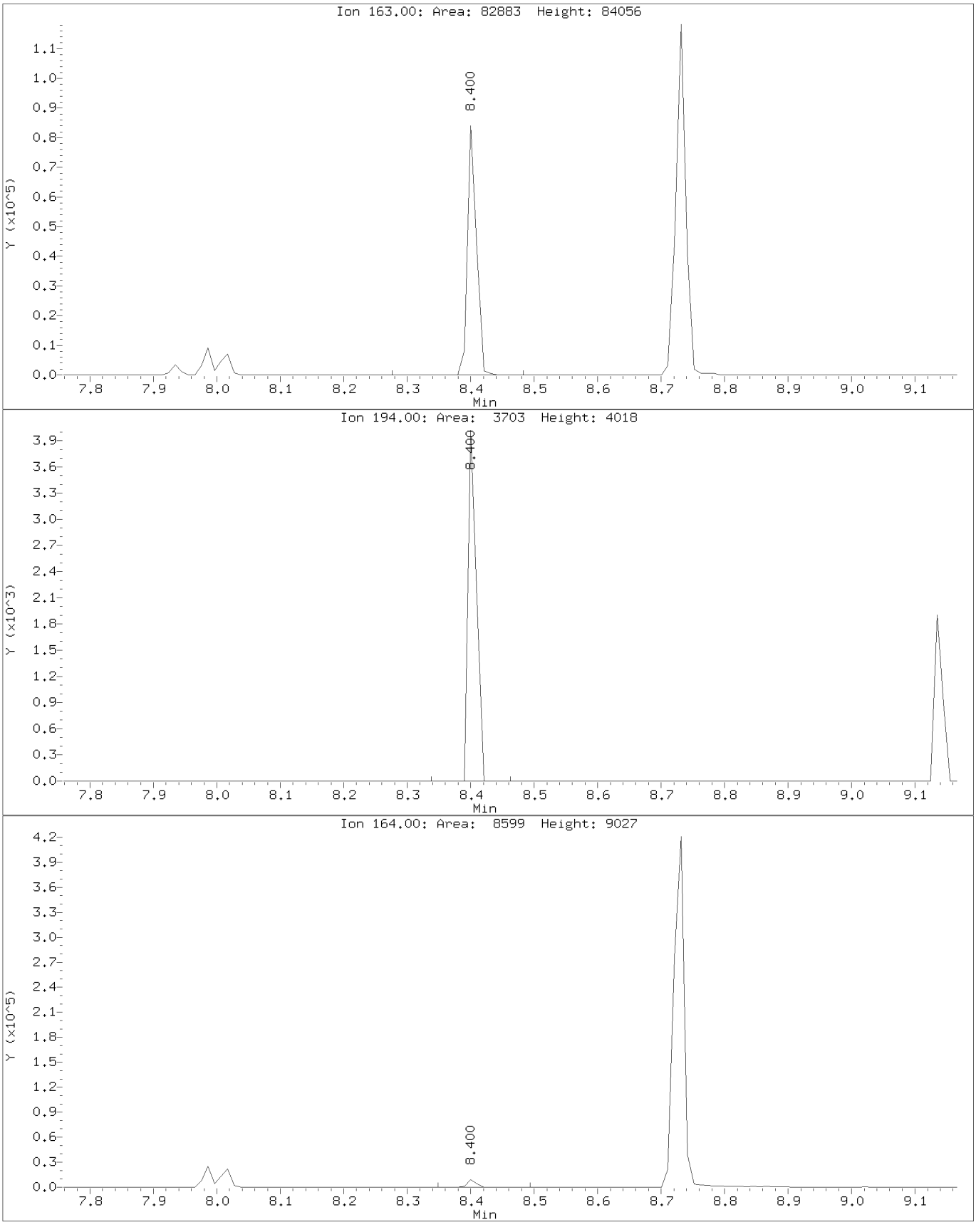
Compound: Dimethyl Phthalate
CAS Number: 131-11-3



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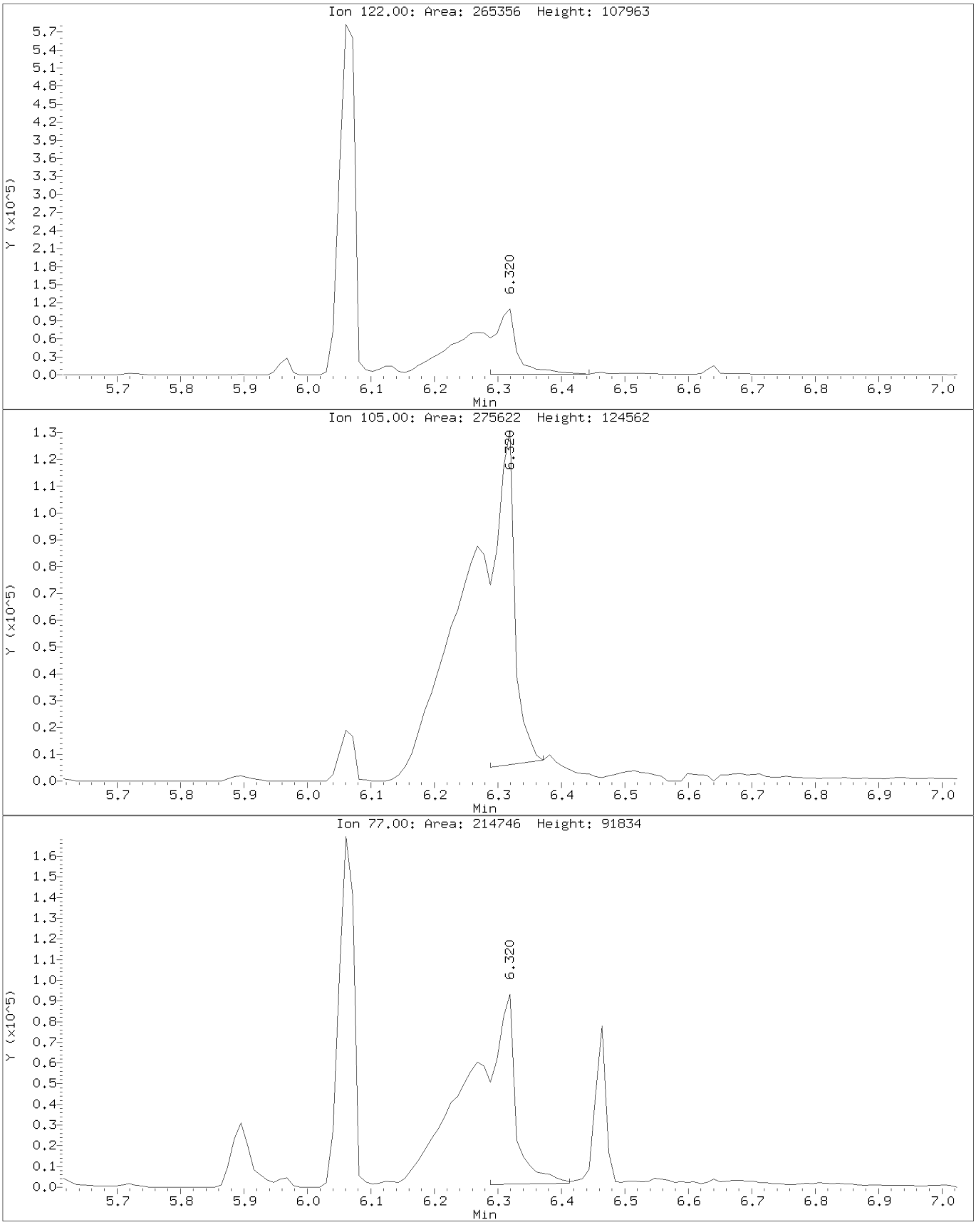
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzoic acid
CAS Number: 65-85-0



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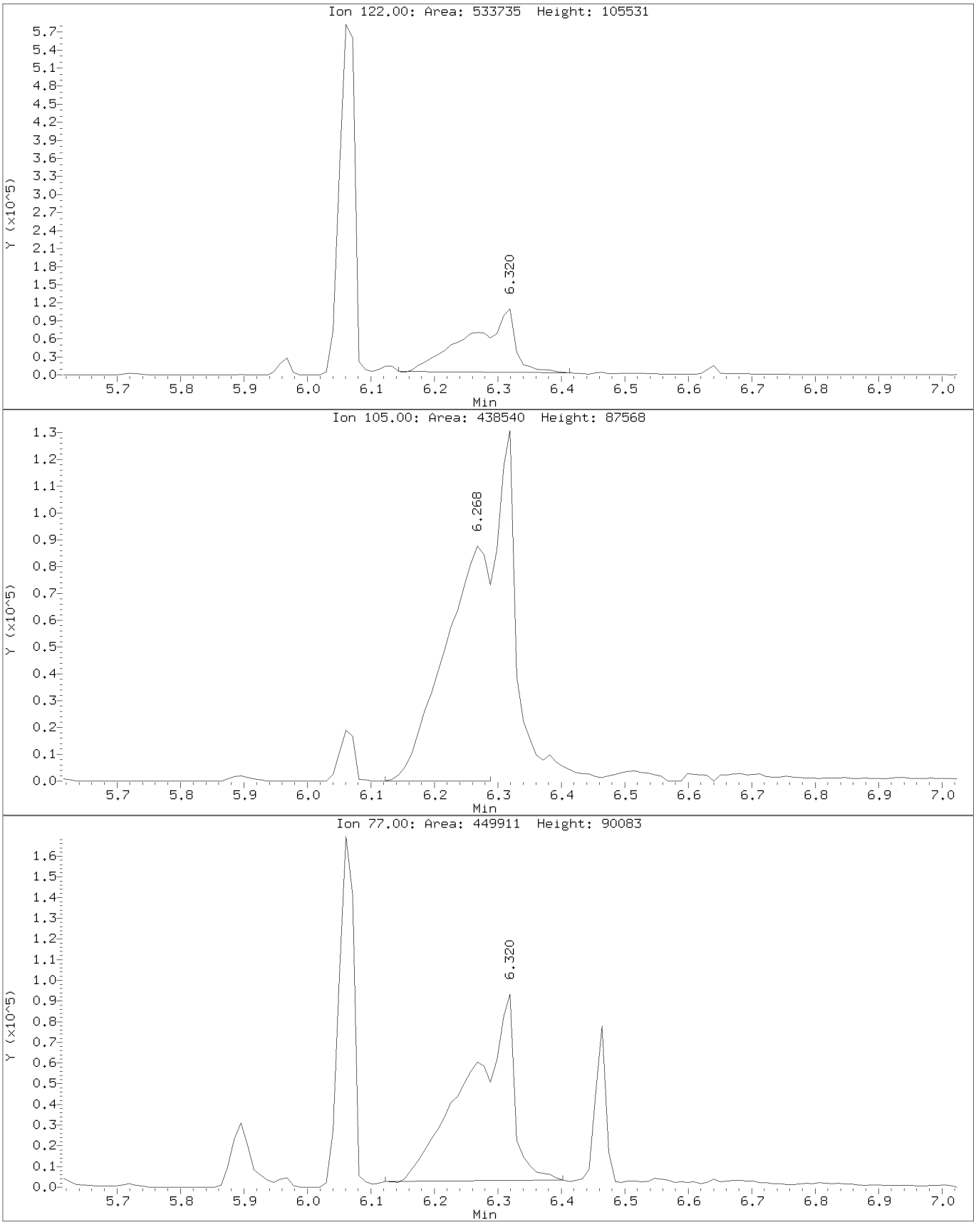
Client Sample ID:

Compound: Benzoic acid
CAS Number: 65-85-0



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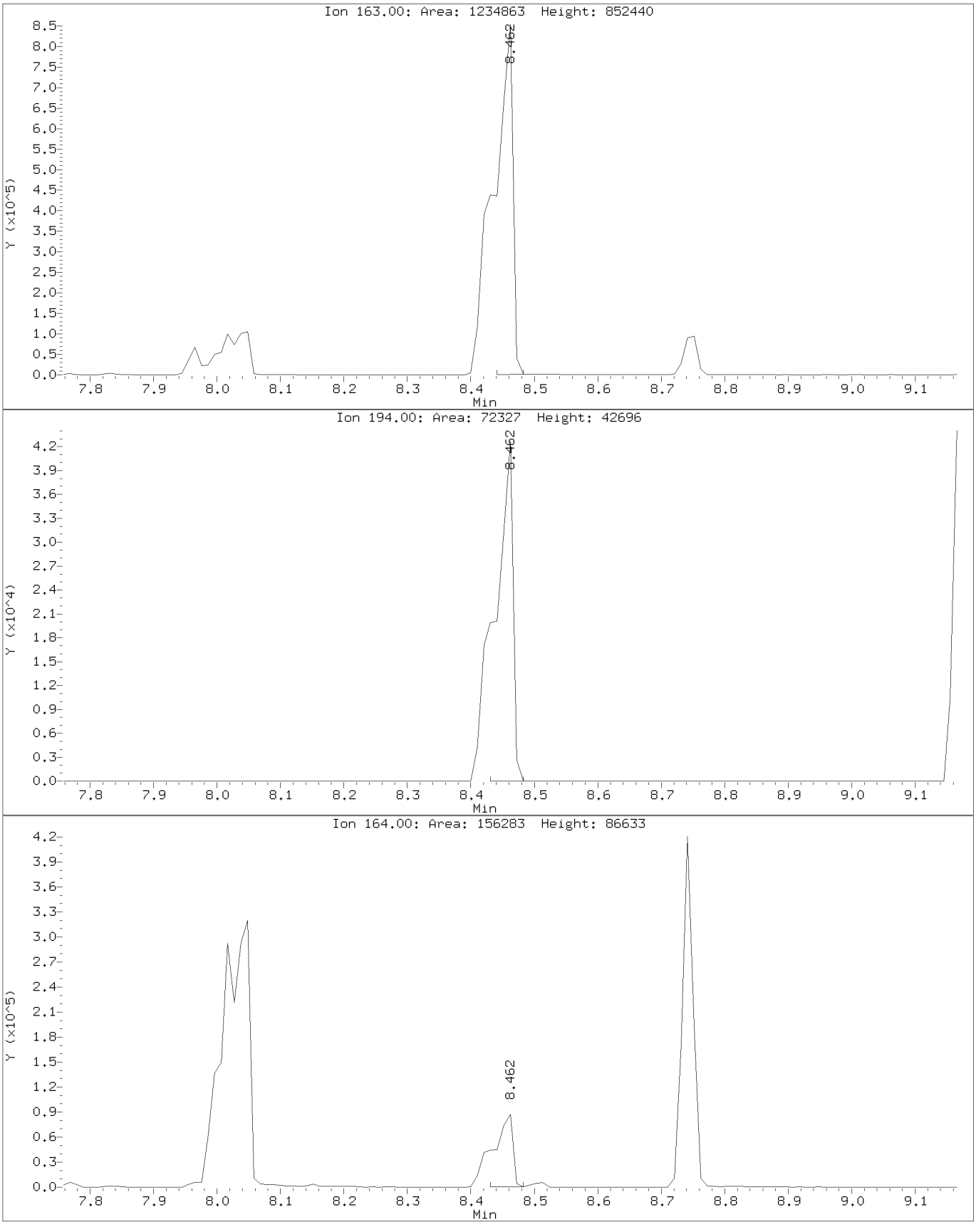
Instrument: gcms-u.i
Client Sample ID:

Compound: Dimethyl Phthalate
CAS Number: 131-11-3



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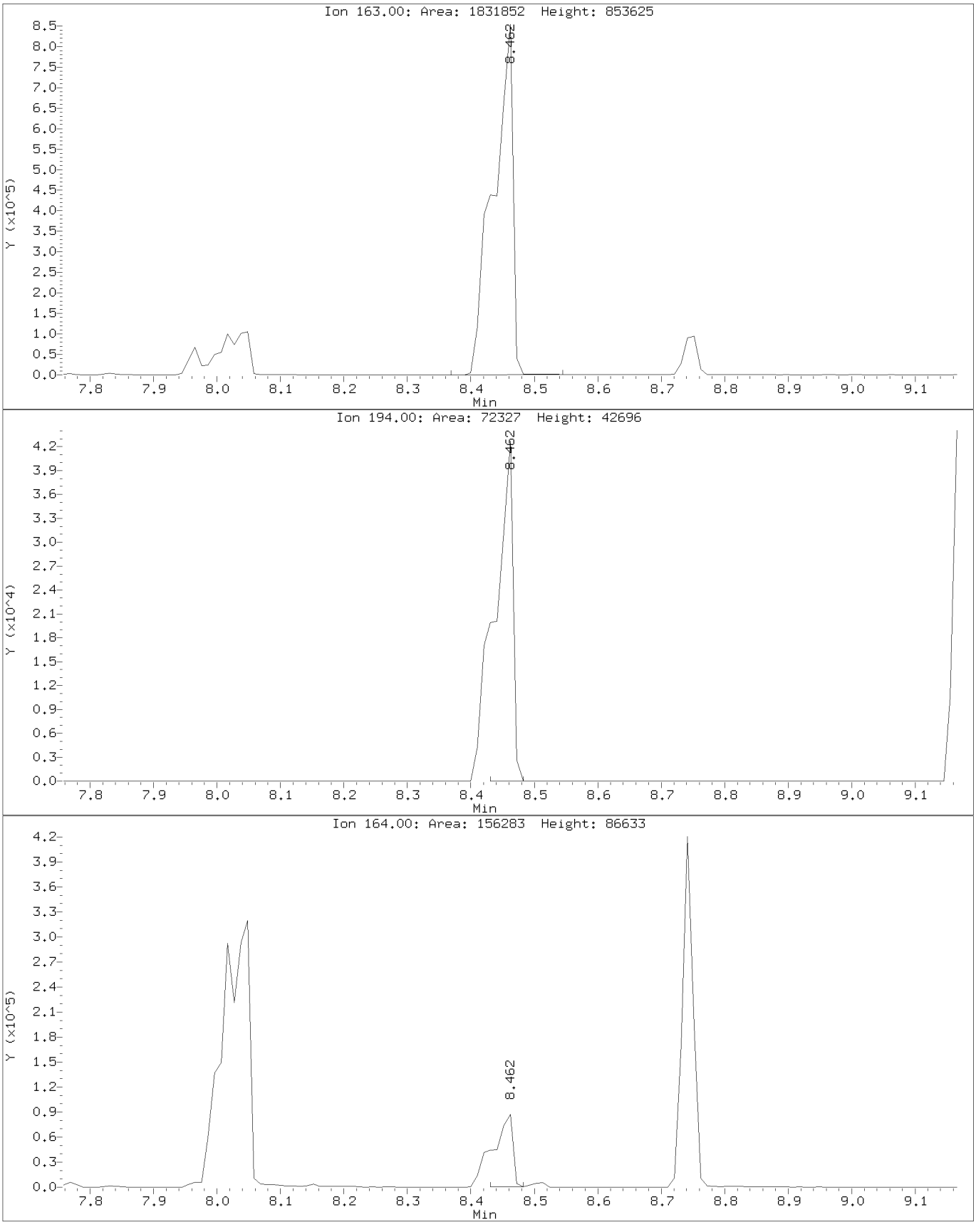
Instrument: gcms-u.i
Client Sample ID:

Compound: Dimethyl Phthalate
CAS Number: 131-11-3



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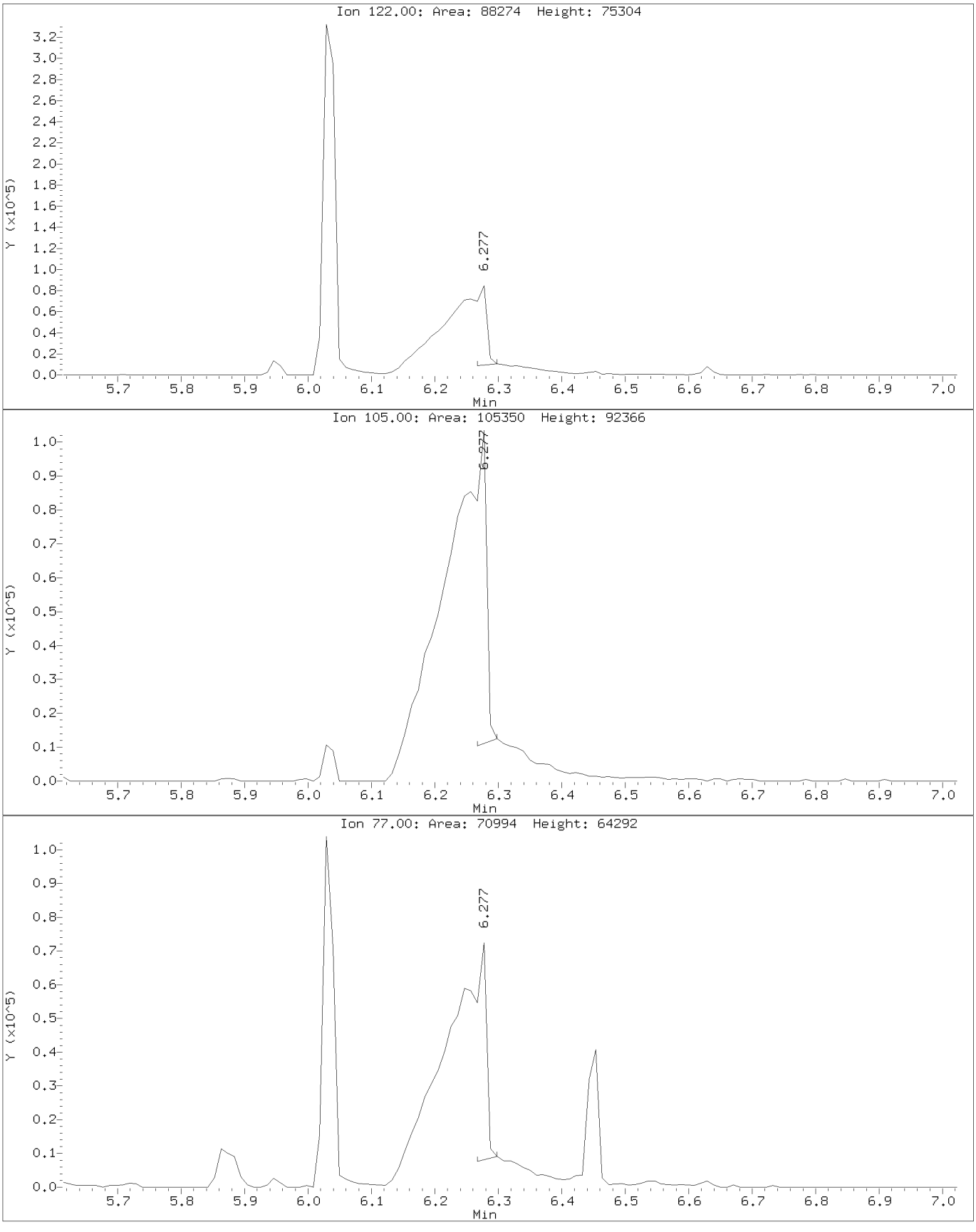
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzoic acid
CAS Number: 65-85-0



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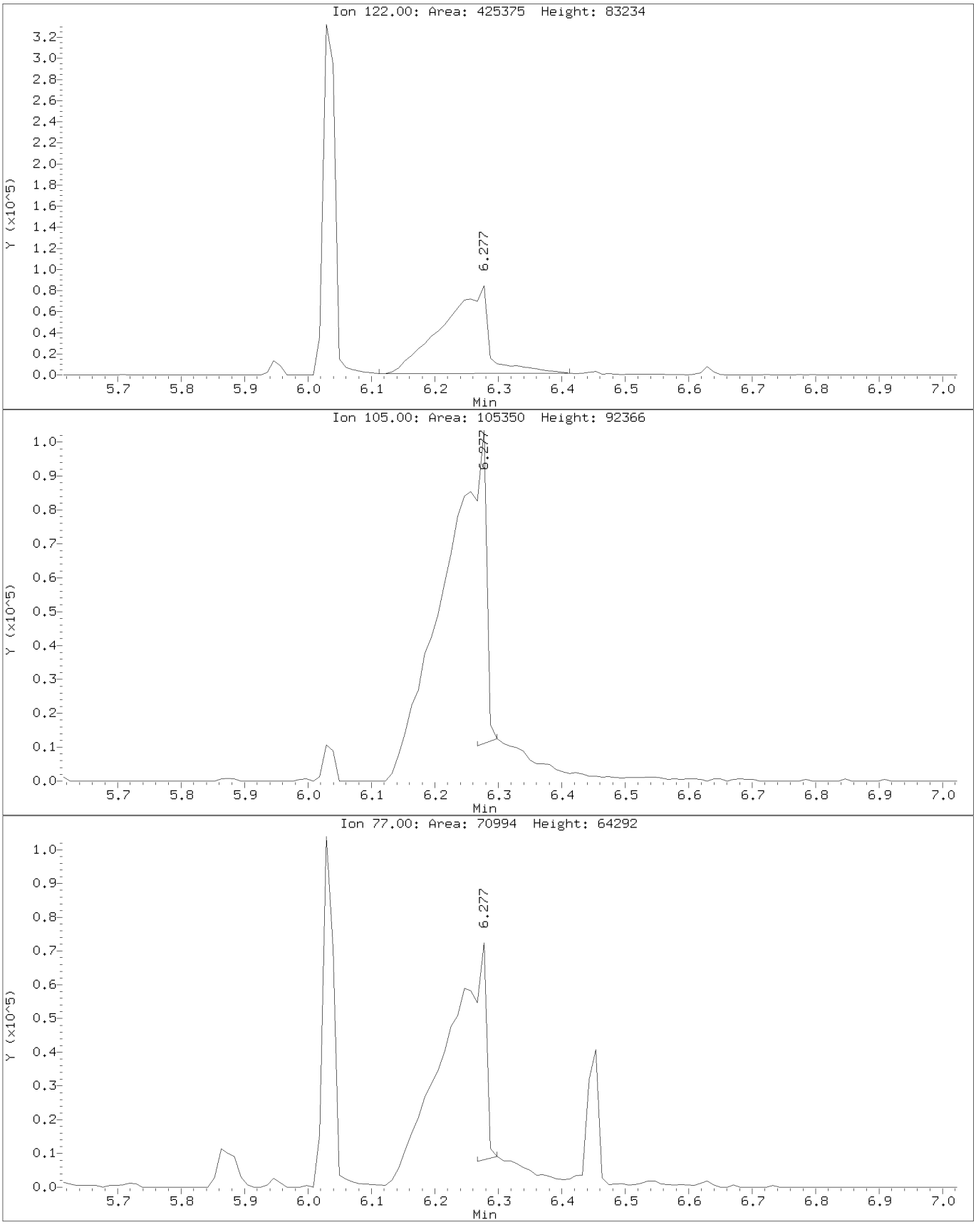
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzoic acid
CAS Number: 65-85-0



Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 6801 **SDG:** TJ0540
Lab ID : WG196728-2 **Analytical Date:** 12/15/16 11:13
Lab File ID : U6512.D **Instrument ID:** GCMS-U
Initial Calibration Date(s): 10/26/16 09:22 10/26/16 10:23 **Column ID:**

	Compound	RRF/Amount	RF60	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
10	N-Nitrosodimethylamine	0.50339	0.52752	0.010	4.79269	20.00000	Averaged	
20	Phenol	1.65191	1.63960	0.010	-0.74467	20.00000	Averaged	
30	Bis(2-Chloroethyl)ether	1.17403	1.11664	0.010	-4.88806	20.00000	Averaged	
40	2-Chlorophenol	1.31134	1.27584	0.010	-2.70718	20.00000	Averaged	
50	1,3-Dichlorobenzene	1.30526	1.34263	0.010	2.86254	20.00000	Averaged	
60	1,4-Dichlorobenzene	1.23523	1.27595	0.010	3.29673	20.00000	Averaged	
70	1,2-Dichlorobenzene	1.17766	1.21985	0.010	3.58234	20.00000	Averaged	
80	Bis(2-chloroisopropyl) Ethe	1.46158	1.49332	0.010	2.17181	20.00000	Averaged	
90	N-Nitroso-di-n-propylamine	0.70546	0.78643	0.050	11.47860	20.00000	Averaged	
100	Hexachloroethane	0.52733	0.53769	0.010	1.96375	20.00000	Averaged	
110	Nitrobenzene	0.28619	0.31020	0.010	8.38985	20.00000	Averaged	
120	Isophorone	0.60616	0.60206	0.010	-0.67669	20.00000	Averaged	
130	2-Nitrophenol	0.17800	0.17680	0.010	-0.67426	20.00000	Averaged	
140	2,4-Dimethylphenol	0.30178	0.30241	0.010	0.20916	20.00000	Averaged	
150	Bis(2-Chloroethoxy)methane	0.44255	0.38762	0.010	-12.41191	20.00000	Averaged	
160	2,4-Dichlorophenol	0.23859	0.26163	0.010	9.65929	20.00000	Averaged	
170	1,2,4-Trichlorobenzene	0.25098	0.26918	0.010	7.25152	20.00000	Averaged	
180	Naphthalene	0.79361	0.81466	0.010	2.65199	20.00000	Averaged	
190	Hexachlorobutadiene	0.11815	0.13907	0.010	17.70443	20.00000	Averaged	
200	4-Chloro-3-Methylphenol	0.24864	0.27454	0.010	10.41586	20.00000	Averaged	
210	Hexachlorocyclopentadiene	0.22853	0.26763	0.050	17.11069	20.00000	Averaged	
220	2,4,6-Trichlorophenol	0.35521	0.38628	0.010	8.74548	20.00000	Averaged	
230	2-Chloronaphthalene	1.13783	1.19408	0.010	4.94368	20.00000	Averaged	
240	Dimethyl Phthalate	1.25642	1.26422	0.010	0.62066	20.00000	Averaged	
250	2,6-Dinitrotoluene	0.28572	0.31310	0.010	9.58246	20.00000	Averaged	
260	Acenaphthylene	1.75568	1.72008	0.010	-2.02787	20.00000	Averaged	
270	Acenaphthene	1.01234	1.03349	0.010	2.08954	20.00000	Averaged	
280	2,4-Dinitrophenol	0.15717	0.21548	0.050	37.10321	20.00000	Averaged	<-
290	4-Nitrophenol	0.10092	0.14171	0.050	40.41713	20.00000	Averaged	<-
300	2,4-Dinitrotoluene	0.34151	0.36698	0.010	7.46007	20.00000	Averaged	
310	Diethylphthalate	1.22413	1.19564	0.010	-2.32740	20.00000	Averaged	
320	4-Chlorophenyl-phenylether	0.44697	0.48056	0.010	7.51637	20.00000	Averaged	
330	Fluorene	0.99329	1.06845	0.010	7.56676	20.00000	Averaged	
340	4,6-Dinitro-2-Methylphenol	0.10617	0.12216	0.010	15.06471	20.00000	Averaged	
350	N-Nitrosodiphenylamine	0.55785	0.55436	0.010	-0.62638	20.00000	Averaged	
360	4-Bromophenyl-phenylether	0.16394	0.16100	0.010	-1.79348	20.00000	Averaged	
370	Hexachlorobenzene	0.18119	0.18193	0.010	0.40484	20.00000	Averaged	
380	Pentachlorophenol	0.08684	0.09668	0.010	11.32880	20.00000	Averaged	
390	Phenanthrene	0.77759	0.80746	0.010	3.84100	20.00000	Averaged	
400	Anthracene	0.89610	0.92256	0.010	2.95260	20.00000	Averaged	
410	Di-n-butylphthalate	1.10418	1.10673	0.010	0.23046	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens/DCL Leachate 6801 **SDG:** TJ0540
Lab ID : WG196728-2 **Analytical Date:** 12/15/16 11:13
Lab File ID : U6512.D **Instrument ID:** GCMS-U
Initial Calibration Date(s): 10/26/16 09:22 10/26/16 10:23 **Column ID:**

	Compound	RRF/Amount	RF60	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
420	Fluoranthene	0.79113	0.85734	0.010	8.36948	20.00000	Averaged
430	Benzidine	0.32721	0.26604	0.010	-18.69613	20.00000	Averaged
440	Pyrene	1.52392	1.30286	0.010	-14.50560	20.00000	Averaged
450	Butylbenzylphthalate	0.72682	0.62715	0.010	-13.71408	20.00000	Averaged
460	3,3'-Dichlorobenzidine	0.21635	0.24459	0.010	13.05439	20.00000	Averaged
470	Benzo(a)anthracene	0.90147	0.92364	0.010	2.45883	20.00000	Averaged
480	Chrysene	0.91550	0.81608	0.010	-10.85901	20.00000	Averaged
490	bis(2-Ethylhexyl)phthalate	1.01611	0.82710	0.010	-18.60168	20.00000	Averaged
500	Di-n-octylphthalate	2.67806	2.21525	0.010	-17.28150	20.00000	Averaged
510	Benzo(b)fluoranthene	1.05408	1.06457	0.010	0.99559	20.00000	Averaged
520	Benzo(k)fluoranthene	1.14905	1.14677	0.010	-0.19819	20.00000	Averaged
530	Benzo(a)pyrene	0.89938	0.96745	0.010	7.56764	20.00000	Averaged
540	Indeno(1,2,3-cd)pyrene	0.47064	0.55157	0.010	17.19598	20.00000	Averaged
550	Dibenzo(a,h)anthracene	0.48166	0.56981	0.010	18.30165	20.00000	Averaged
560	Benzo(g,h,i)perylene	0.53246	0.58645	0.010	10.13980	20.00000	Averaged
2	2-Fluorophenol	1.30330	1.19362	0.010	-8.41552	20.00000	Averaged
4	Phenol-D6	1.54213	1.43487	0.010	-6.95567	20.00000	Averaged
16	Nitrobenzene-D5	0.31762	0.29831	0.010	-6.08093	20.00000	Averaged
33	2-Fluorobiphenyl	1.19443	1.09397	0.010	-8.41130	20.00000	Averaged
51	2,4,6-Tribromophenol	0.15487	0.18074	0.010	16.70281	20.00000	Averaged
63	Terphenyl-D14	0.86169	0.70327	0.010	-18.38443	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6512.D
Report Date: 21-Dec-2016 10:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U121516.b\U6512.D
Lab Smp Id: WG196728-2
Inj Date : 15-DEC-2016 11:13 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG196728-2,TJ0540
Misc Info : WG196728,WG196728,WG193442-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U121516.b\U625A039.m
Meth Date : 15-Dec-2016 15:06 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: e625.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

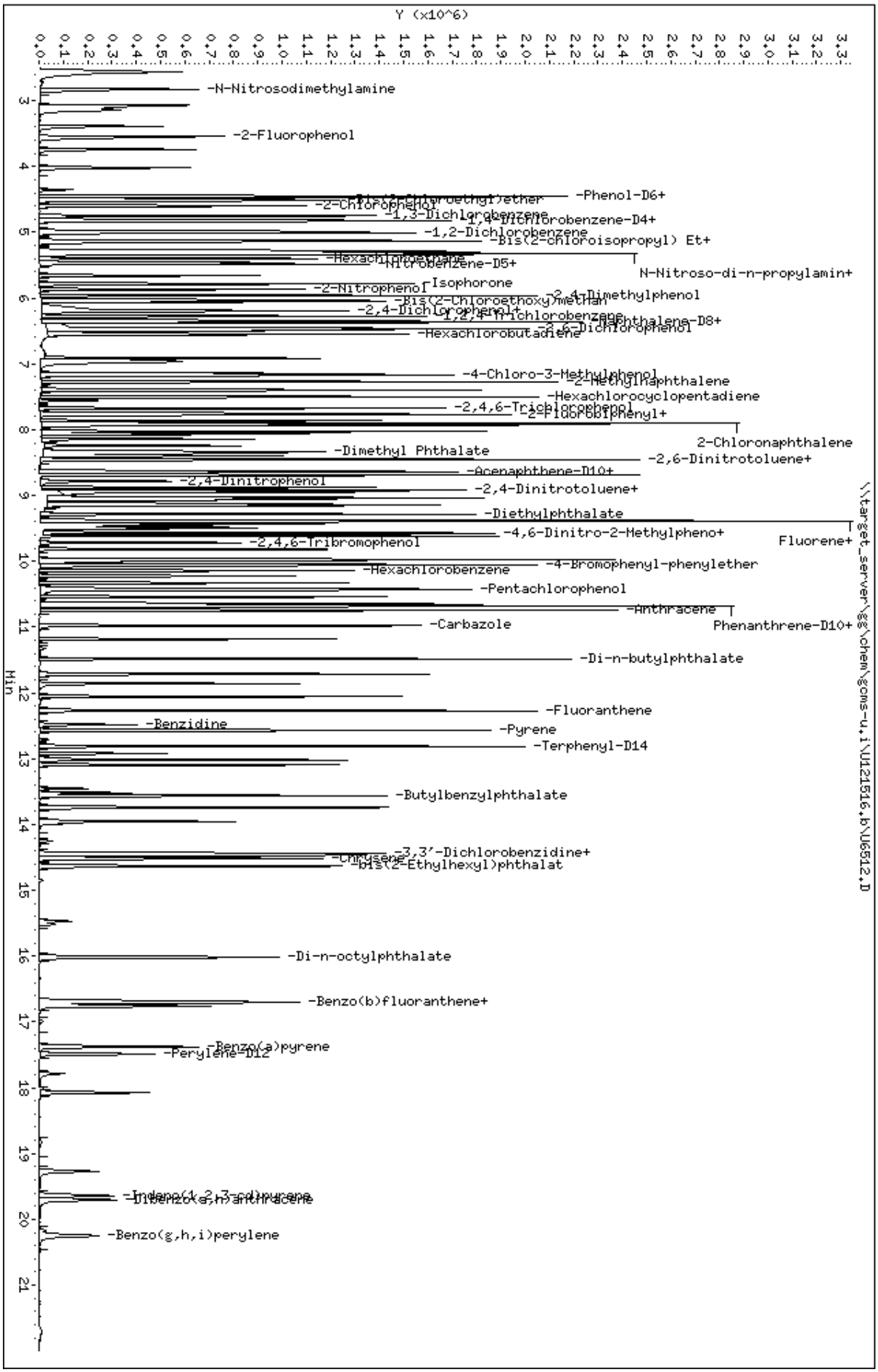
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	1 N-Nitrosodimethylamine	42	2.536	2.536	(0.527)	191041	60.0000	62.9	
$	2 2-Fluorophenol	112	3.540	3.540	(0.736)	432268	60.0000	55.0	
$	4 Phenol-D6	99	4.451	4.451	(0.925)	519637	60.0000	55.8	
	5 Phenol	94	4.461	4.461	(0.927)	593782	60.0000	59.6	
	3 Bis(2-Chloroethyl)ether	93	4.523	4.523	(0.940)	404391	60.0000	57.1	
	6 2-Chlorophenol	128	4.606	4.606	(0.957)	462045	60.0000	58.4	
	7 1,3-Dichlorobenzene	146	4.751	4.751	(0.987)	486231	60.0000	61.7(H)	
*	8 1,4-Dichlorobenzene-D4	152	4.813	4.813	(1.000)	241433	40.0000		
	9 1,4-Dichlorobenzene	146	4.834	4.834	(1.004)	462086	60.0000	62.0	
	10 1,2-Dichlorobenzene	146	5.010	5.010	(1.041)	441768	60.0000	62.1	
	11 Bis(2-chloroisopropyl) Ether	45	5.134	5.134	(1.067)	540805	60.0000	61.3	
	14 Hexachloroethane	117	5.403	5.403	(1.123)	194724	60.0000	61.2	
	13 N-Nitroso-di-n-propylamine	70	5.310	5.310	(1.103)	284807	60.0000	66.9	
$	16 Nitrobenzene-D5	82	5.465	5.465	(0.861)	405629	60.0000	56.4	
	17 Nitrobenzene	77	5.486	5.486	(0.865)	421808	60.0000	65.0	
	18 Isophorone	82	5.786	5.786	(0.912)	818668	60.0000	59.6	
	19 2-Nitrophenol	139	5.869	5.869	(0.925)	240412	60.0000	59.6	
	20 2,4-Dimethylphenol	107	5.962	5.962	(0.940)	411214	60.0000	60.1	
	21 Bis(2-Chloroethoxy)methane	93	6.055	6.055	(0.954)	527073	60.0000	52.6	
	22 2,4-Dichlorophenol	162	6.200	6.200	(0.977)	355761	60.0000	65.8	
	23 1,2,4-Trichlorobenzene	180	6.273	6.273	(0.989)	366026	60.0000	64.4	

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6512.D
Report Date: 21-Dec-2016 10:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	25 Naphthalene-D8	136	6.345	6.345	(1.000)	906516	40.0000		
	26 Naphthalene	128	6.366	6.366	(1.003)	1107755	60.0000	61.6(H)	
	28 Hexachlorobutadiene	225	6.552	6.552	(1.033)	189101	60.0000	70.6	
	29 4-Chloro-3-Methylphenol	107	7.142	7.142	(1.126)	373309	60.0000	66.2	
	31 Hexachlorocyclopentadiene	237	7.494	7.494	(0.867)	172667	60.0000	70.3	
	32 2,4,6-Trichlorophenol	196	7.670	7.670	(0.887)	249213	60.0000	65.2(H)	
$	33 2-Fluorobiphenyl	172	7.763	7.763	(0.898)	705788	60.0000	55.0	
	35 2-Chloronaphthalene	162	7.908	7.908	(0.915)	770379	60.0000	63.0(H)	
	38 Acenaphthylene	152	8.457	8.457	(0.978)	1109735	60.0000	58.8	
	36 Dimethyl Phthalate	163	8.343	8.343	(0.965)	815628	60.0000	60.4	
	37 2,6-Dinitrotoluene	165	8.405	8.405	(0.972)	201998	60.0000	65.7	
*	39 Acenaphthene-D10	164	8.643	8.643	(1.000)	430110	40.0000		
	40 Acenaphthene	153	8.695	8.695	(1.006)	666773	60.0000	61.2	
	41 2,4-Dinitrophenol	184	8.788	8.788	(1.017)	139020	60.0000	82.3	
	44 4-Nitrophenol	109	8.964	8.964	(1.037)	91425	60.0000	84.2	
	43 2,4-Dinitrotoluene	165	8.953	8.953	(1.036)	236765	60.0000	64.5	
	46 Fluorene	166	9.388	9.388	(1.086)	689324	60.0000	64.5	
	45 Diethylphthalate	149	9.285	9.285	(1.074)	771387	60.0000	58.6	
	47 4-Chlorophenyl-phenylether	204	9.398	9.398	(1.087)	310041	60.0000	64.5	
	48 4,6-Dinitro-2-Methylphenol	198	9.502	9.502	(0.893)	145915	60.0000	69.0	
	49 N-Nitrosodiphenylamine	169	9.574	9.574	(0.900)	662151	60.0000	59.6	
$	51 2,4,6-Tribromophenol	330	9.719	9.719	(1.125)	116607	60.0000	70.0	
	52 4-Bromophenyl-phenylether	248	10.050	10.050	(0.945)	192301	60.0000	58.9	
	53 Hexachlorobenzene	284	10.144	10.144	(0.953)	217300	60.0000	60.2	
	54 Pentachlorophenol	266	10.433	10.433	(0.981)	115479	60.0000	66.8	
*	55 Phenanthrene-D10	188	10.640	10.640	(1.000)	796298	40.0000		
	56 Phenanthrene	178	10.671	10.671	(1.003)	964470	60.0000	62.3(H)	
	57 Anthracene	178	10.744	10.744	(1.010)	1101948	60.0000	61.8	
	59 Di-n-butylphthalate	149	11.489	11.489	(1.080)	1321929	60.0000	60.1	
	60 Fluoranthene	202	12.276	12.276	(1.154)	1024048	60.0000	65.0	
	61 Benzidine	184	12.483	12.483	(0.863)	211765	60.0000	48.8	
	62 Pyrene	202	12.576	12.576	(0.869)	1037079	60.0000	51.3	
$	63 Terphenyl-D14	244	12.814	12.814	(0.886)	559804	60.0000	49.0	
	64 Butylbenzylphthalate	149	13.559	13.559	(0.937)	499208	60.0000	51.8	
	65 Benzo(a)anthracene	228	14.449	14.449	(0.999)	735216	60.0000	61.5(H)	
*	67 Chrysene-D12	240	14.470	14.470	(1.000)	530666	40.0000		
	68 Chrysene	228	14.511	14.511	(1.003)	649602	60.0000	53.5	
	66 3,3'-Dichlorobenzidine	252	14.439	14.439	(0.998)	194693	60.0000	67.8	
	69 bis(2-Ethylhexyl)phthalate	149	14.636	14.636	(1.011)	658370	60.0000	48.8	
	70 Di-n-octylphthalate	149	16.022	16.022	(0.916)	1090992	60.0000	49.6	
	71 Benzo(b)fluoranthene	252	16.706	16.706	(0.955)	524294	60.0000	60.6	
	72 Benzo(k)fluoranthene	252	16.757	16.757	(0.958)	564777	60.0000	59.9(H)	
	73 Benzo(a)pyrene	252	17.378	17.378	(0.993)	476460	60.0000	64.5	
*	74 Perylene-D12	264	17.492	17.492	(1.000)	328328	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.645	19.645	(1.123)	271646	60.0000	70.3	
	76 Dibenzo(a,h)anthracene	278	19.707	19.707	(1.127)	280628	60.0000	71.0	
	77 Benzo(g,h,i)perylene	276	20.256	20.256	(1.158)	288822	60.0000	66.1	

QC Flag Legend

H - Operator selected an alternate compound hit.


Y (x10^6)
Min
-N-Nitrosodimethylamine
-2-Fluorophenol
-Phenol-D6+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Bis(2-chloroisopropyl) Et+
-Hexachloroethane
-Nitrobenzene-D5+
N-Nitroso-di-n-propylamin+
-2-Nitrophenol
-Isophorone
-2,4-Dimethylphenol
-Bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-2,6-Dichlorophenol
-Hexachlorobutadiene
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-Hexachlorocyclopentadiene
-2,4,6-Trichlorophenol
-2-Fluorobiphenyl+
2-Chloronaphthalene
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-Acenaphthene-D10+
-2,4-Dinitrophenol
-2,4-Dinitrotoluene+
-Diethylphthalate
Fluorene+
-4,6-Dinitro-2-Methylpheno+
-2,4,6-Tribromophenol
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Anthracene
Phenanthrene-D10+
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Benzidine
-Pyrene
-Terphenyl-D14
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene
\\target_server\gg\chem\gcms-u,i\U121516,b\U6512.D
Data File: \\target_server\gg\chem\gcms-u,i\U121516,b\U6512.D
Date : 15-DEC-2016 11:13
Client ID:
Sample Info: WG196728-2,TJO540
Volume Injected (uL): 1.0
Column phase:
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\UD649A.D

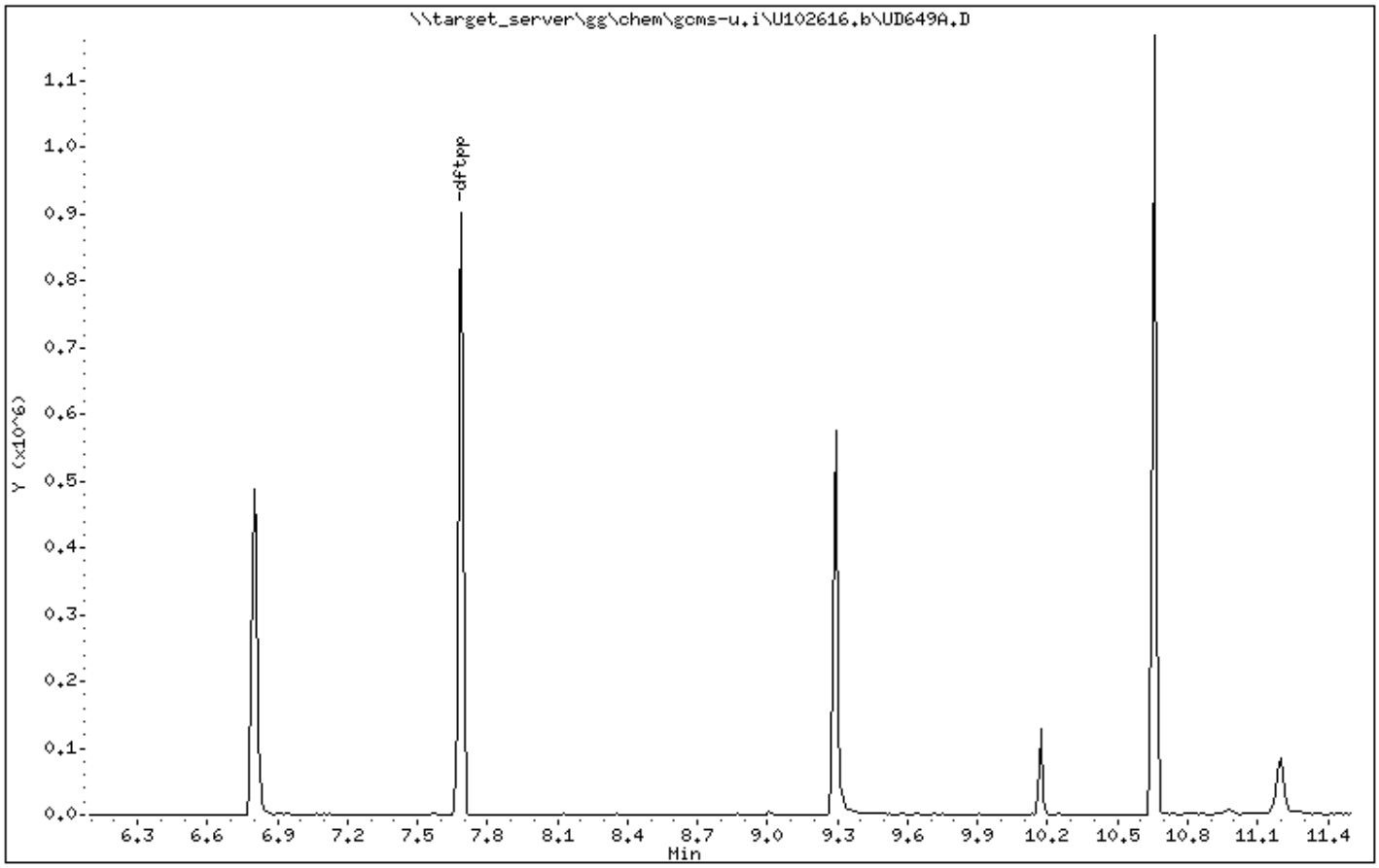
Date : 26-OCT-2016 09:03

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG193442-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



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Date : 26-OCT-2016 09:03

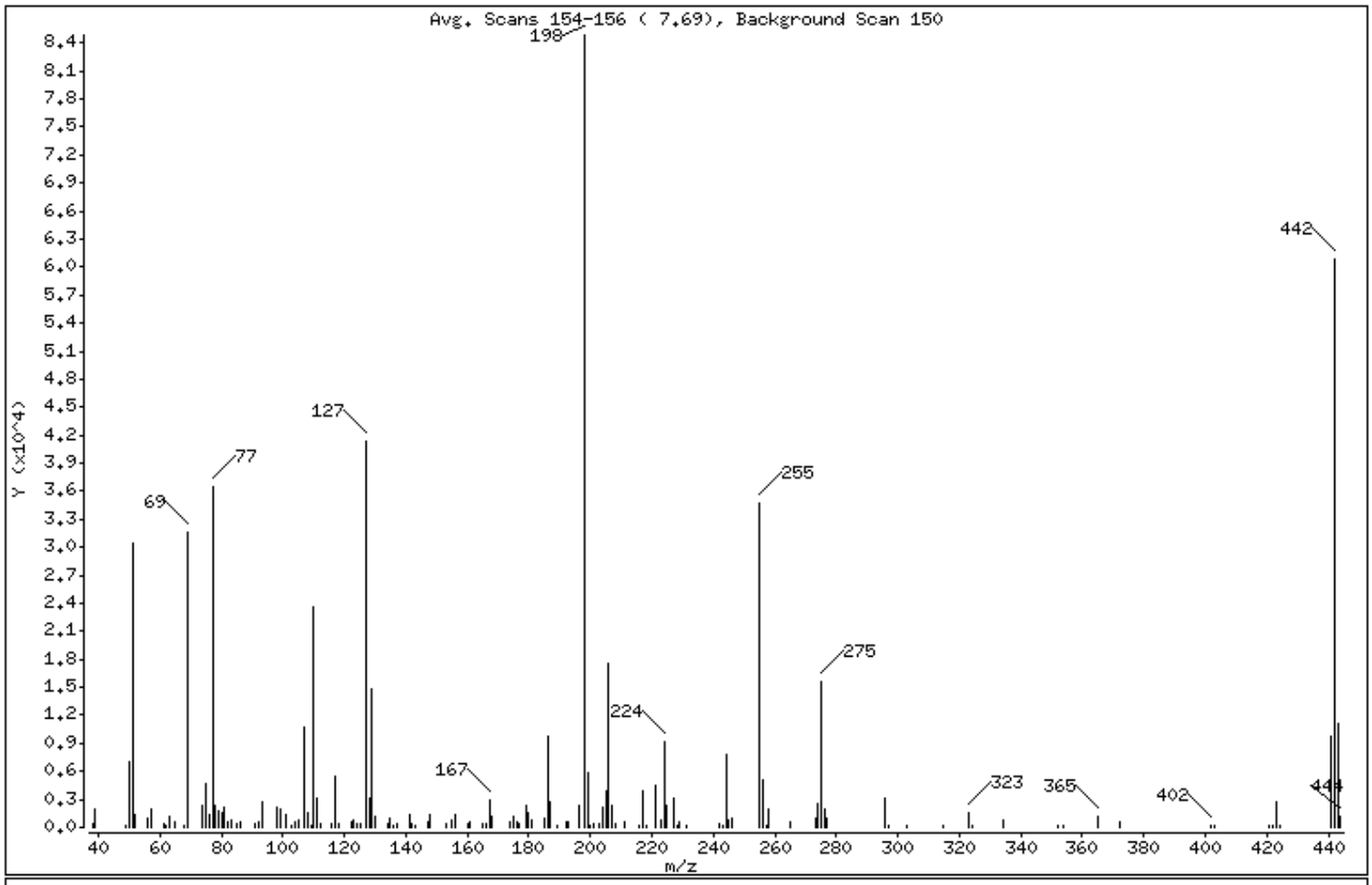
Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG193442-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	35.90
68	Less than 2.00% of mass 69	0.33 (0.87)
69	Less than 100.00% of mass 198	37.36
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	48.83
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.88
275	10.00 - 30.00% of mass 198	18.47
365	1.00 - 100.00% of mass 198	1.40
441	0.01 - 100.00% of mass 443	11.54 (88.77)
442	40.00 - 100.00% of mass 198	71.79
443	17.00 - 23.00% of mass 442	13.00 (18.11)

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\UD649A.D

Date : 26-OCT-2016 09:03

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG193442-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD649A.D

Spectrum: Avg. Scans 154-156 (7.69), Background Scan 150

Location of Maximum: 198.00

Number of points: 142

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	391	108.00	1477	176.00	507	244.00	7781
39.00	1921	109.00	172	177.00	438	245.00	775
49.00	174	110.00	23512	179.00	2326	246.00	993
50.00	6987	111.00	3156	180.00	1653	255.00	34744
51.00	30464	112.00	337	181.00	741	256.00	5057
52.00	1422	116.00	412	185.00	1028	257.00	183
56.00	891	117.00	5399	186.00	9794	258.00	1866
57.00	2045	118.00	405	187.00	2685	265.00	518
61.00	363	122.00	510	189.00	246	273.00	935
62.00	182	123.00	864	192.00	551	274.00	2542
63.00	1090	124.00	460	193.00	633	275.00	15670
65.00	674	125.00	448	196.00	2346	276.00	2039
68.00	277	127.00	41432	198.00	84848	277.00	889
69.00	31696	128.00	3134	199.00	5837	296.00	3187
74.00	2436	129.00	14842	200.00	205	297.00	272
75.00	4596	130.00	1133	201.00	468	303.00	273
76.00	1428	134.00	387	203.00	394	315.00	210
77.00	36440	135.00	1050	204.00	2123	323.00	1482
78.00	2438	136.00	203	205.00	3941	324.00	173
79.00	1721	137.00	469	206.00	17520	334.00	704
80.00	1491	141.00	1437	207.00	2305	352.00	210
81.00	2163	142.00	481	208.00	395	354.00	264
82.00	585	143.00	199	211.00	633	365.00	1191
83.00	697	147.00	615	216.00	229	372.00	654
85.00	380	148.00	1460	217.00	3996	402.00	172
86.00	508	153.00	382	218.00	284	403.00	167
91.00	444	155.00	815	221.00	4440	421.00	191
92.00	533	156.00	1337	223.00	779	422.00	173
93.00	2644	160.00	426	224.00	9172	423.00	2784
98.00	2154	161.00	636	225.00	2255	424.00	292
99.00	1896	165.00	443	227.00	3133	441.00	9793
101.00	1327	166.00	448	228.00	187	442.00	60912
103.00	253	167.00	2902	229.00	674	443.00	11032
104.00	661	168.00	1219	231.00	221	444.00	1112
105.00	693	174.00	560	242.00	475		

Data File: \\target_server\gg\chem\gcms-u.i\U102616.b\UD649A.D

Date : 26-OCT-2016 09:03

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG193442-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD649A.D

Spectrum: Avg. Scans 154-156 (7.69), Background Scan 150

Location of Maximum: 198.00

Number of points: 142

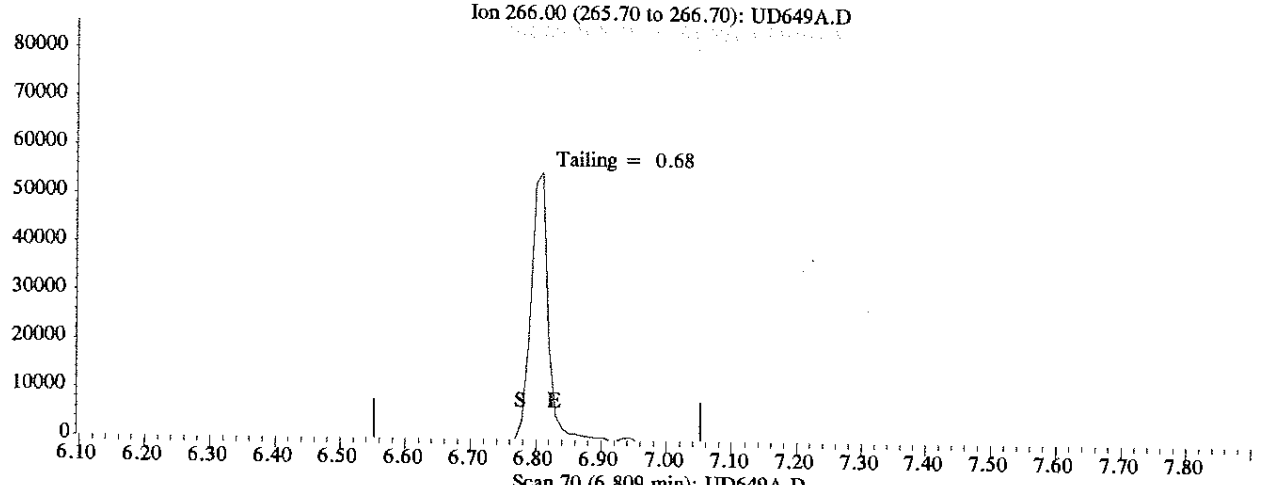
m/z	Y	m/z	Y	m/z	Y	m/z	Y
107.00	10673	175.00	1178	243.00	229		

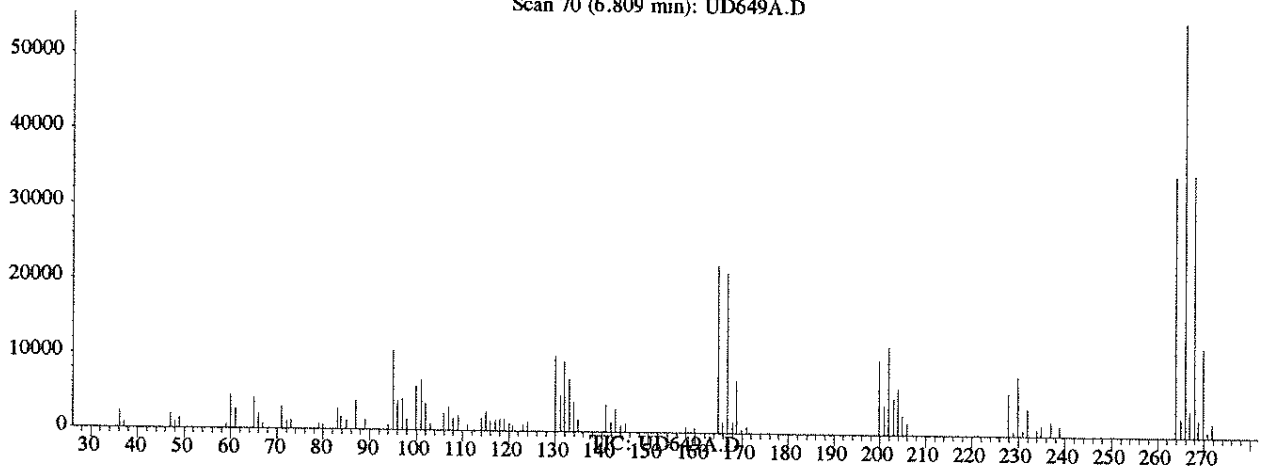
Quantitation Report

Data File : C:\HPCHEM\1\DATA\U102616\UD649A.D
Acq On : 26 Oct 2016 9:03 am
Sample : WG193442-1
Misc : WG193442,WG193442,WG193442-3
MS Integration Params: 26E2016

Vial: 1
Operator: JCG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\TUNETAIL.M (RTE Integrator)
Title : Katahdin 8270C Water Calibration
Last Update : Wed Sep 28 10:54:43 2016
Response via : Multiple Level Calibration





(1) Pentachlorophenol (CM)

6.81min 46.46ug/L

response 102716

Ion	Exp%	Act%
266.00	100	100
264.00	62.00	62.19
268.00	63.50	63.28
0.00	0.00	0.00

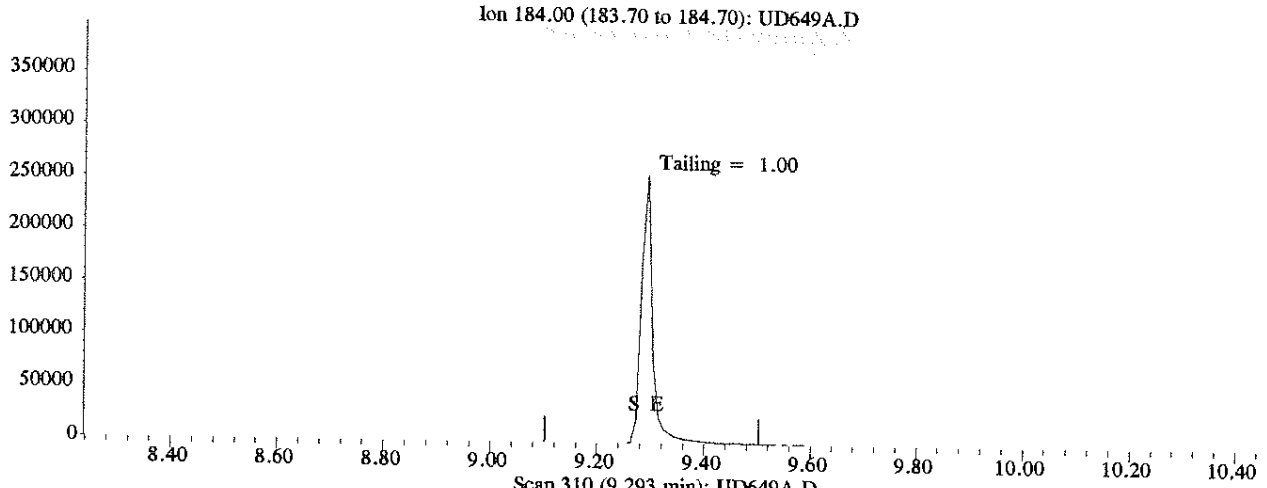
UD649A.D TUNETAIL.M Fri Nov 18 11:27:31 2016

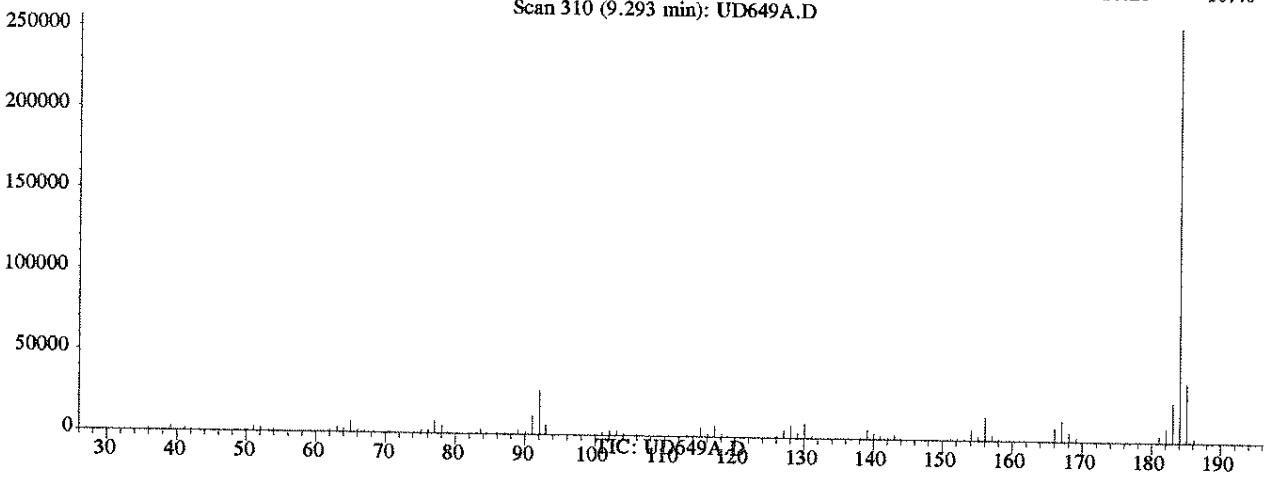
Quantitation Report

Data File : C:\HPCHEM\1\DATA\U102616\UD649A.D
Acq On : 26 Oct 2016 9:03 am
Sample : WG193442-1
Misc : WG193442,WG193442,WG193442-3
Quant Time: Nov 18 11:34:37 2016

Vial: 1
Operator: JCG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\TUNETAIL.M (RTE Integrator)
Title : Katahdin 8270C Water Calibration
Last Update : Wed Sep 28 10:54:43 2016
Response via : Multiple Level Calibration





(2) Benzidine (T)

9.29min 84.61ug/L

response 379584

Ion	Exp%	Act%
184.00	100	100
92.00	12.20	11.73
185.00	14.40	13.98
0.00	0.00	0.00

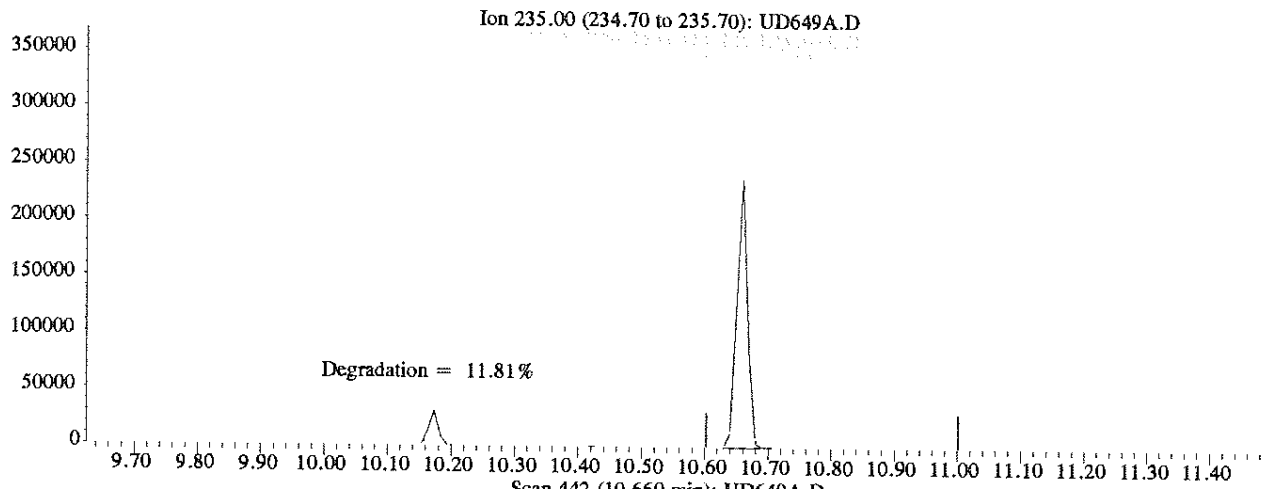
UD649A.D TUNETAIL.M Fri Nov 18 11:34:37 2016

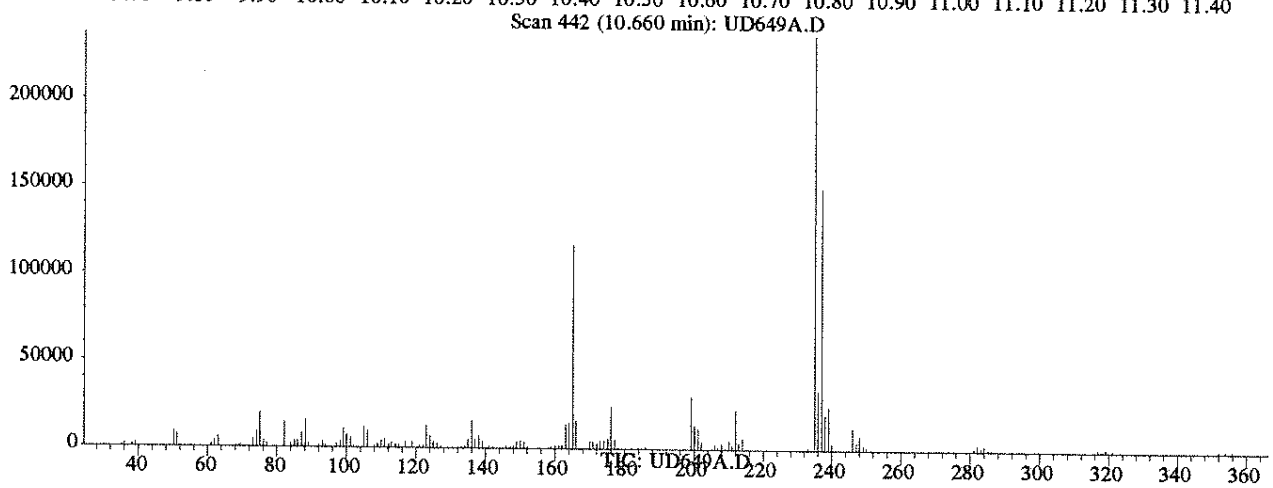
Quantitation Report

Data File : C:\HPCHEM\1\DATA\U102616\UD649A.D
Acq On : 26 Oct 2016 9:03 am
Sample : WG193442-1
Misc : WG193442,WG193442,WG193442-3
Quant Time: Nov 18 11:26 2016

Vial: 1
Operator: JCG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\TUNETAIL.M (RTE Integrator)
Title : Katahdin 8270C Water Calibration
Last Update : Wed Sep 28 10:54:43 2016
Response via : Multiple Level Calibration





(3) 4,4'-DDT (T)

10.66min 63.03ug/L

response 282758

Ion	Exp%	Act%
235.00	100	100
237.00	50.00	63.39
165.00	50.00	48.83
0.00	0.00	0.00

UD649A.D TUNETAIL.M Fri Nov 18 11:27:16 2016

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\UD673A.D

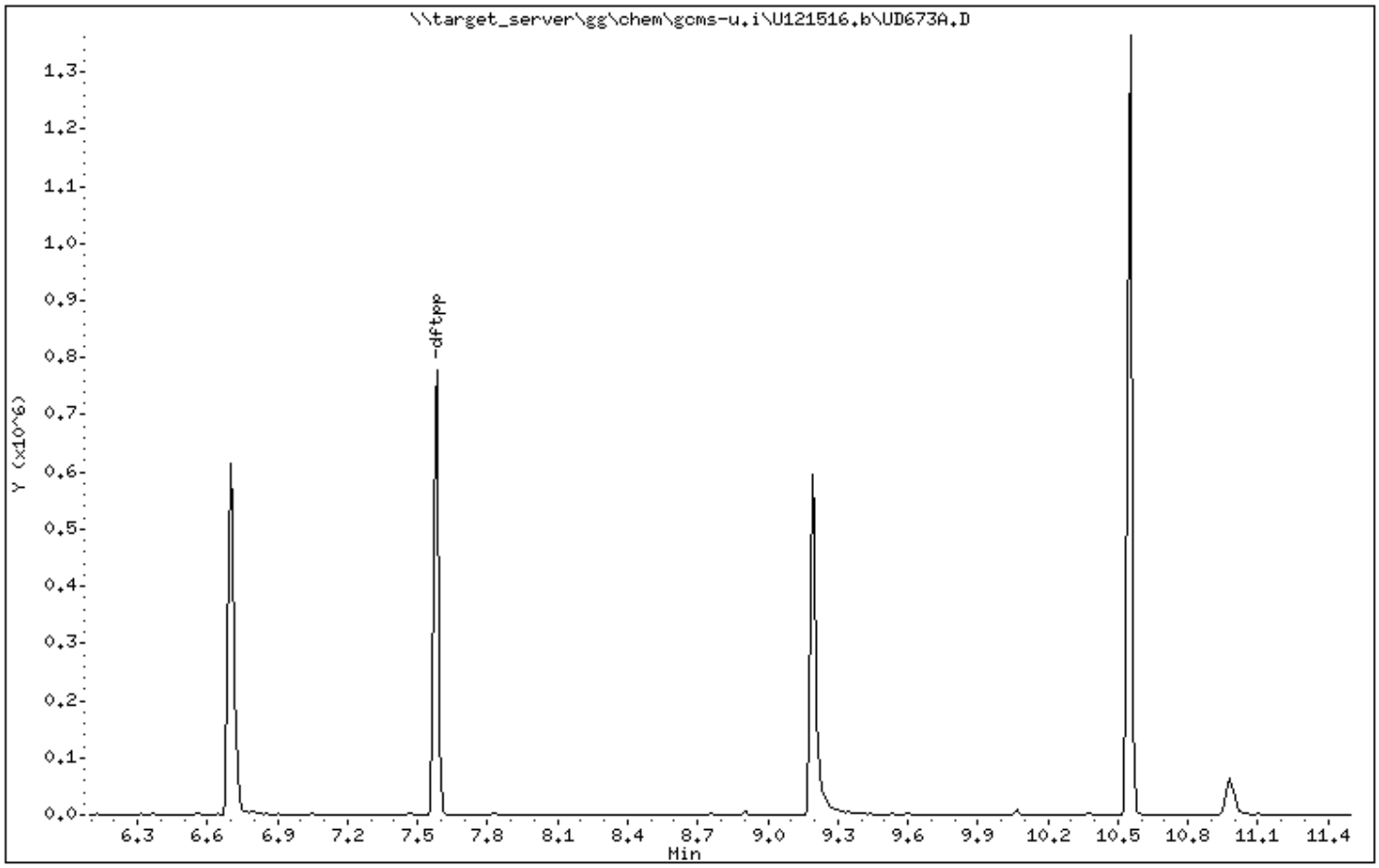
Date : 15-DEC-2016 10:26

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG196728-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\UD673A.D

Date : 15-DEC-2016 10:26

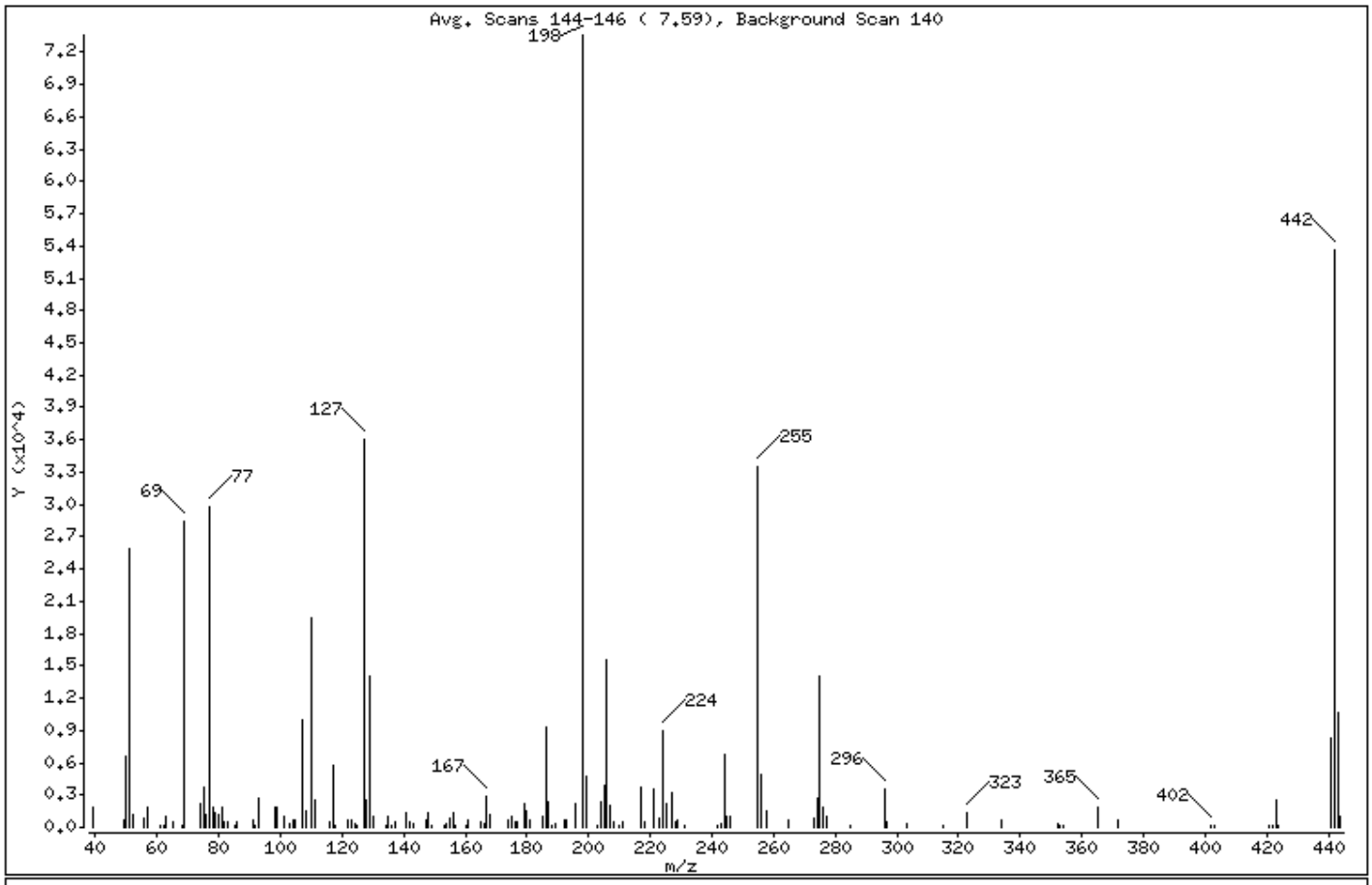
Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG196728-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	35.08
68	Less than 2.00% of mass 69	0.26 (0.68)
69	Less than 100.00% of mass 198	38.62
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	48.91
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.54
275	10.00 - 30.00% of mass 198	19.15
365	1.00 - 100.00% of mass 198	2.45
441	0.01 - 100.00% of mass 443	11.37 (78.22)
442	40.00 - 100.00% of mass 198	72.93
443	17.00 - 23.00% of mass 442	14.53 (19.93)

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\UD673A.D

Date : 15-DEC-2016 10:26

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG196728-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD673A.D

Spectrum: Avg. Scans 144-146 (7.59), Background Scan 140

Location of Maximum: 198.00

Number of points: 141

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.00	1779	110.00	19440	176.00	429	245.00	939
49.00	607	111.00	2581	177.00	514	246.00	1043
50.00	6537	116.00	450	179.00	2217	255.00	33472
51.00	25816	117.00	5709	180.00	1541	256.00	4902
52.00	1205	118.00	249	181.00	699	258.00	1524
56.00	827	122.00	640	185.00	1061	265.00	598
57.00	1861	123.00	719	186.00	9342	273.00	906
61.00	181	124.00	391	187.00	2326	274.00	2756
62.00	193	125.00	175	188.00	172	275.00	14091
63.00	932	127.00	35992	189.00	398	276.00	1853
65.00	543	128.00	2512	192.00	666	277.00	934
68.00	192	129.00	14034	193.00	698	285.00	168
69.00	28416	130.00	1060	196.00	2115	296.00	3558
74.00	2265	134.00	191	198.00	73584	297.00	460
75.00	3690	135.00	953	199.00	4812	303.00	259
76.00	1125	136.00	191	203.00	235	315.00	184
77.00	29720	137.00	488	204.00	2297	323.00	1304
78.00	1860	141.00	1414	205.00	3866	334.00	740
79.00	1416	142.00	444	206.00	15646	352.00	288
80.00	1219	143.00	270	207.00	1993	353.00	189
81.00	1777	147.00	727	208.00	427	354.00	248
82.00	517	148.00	1385	210.00	184	365.00	1805
83.00	534	149.00	189	211.00	516	372.00	647
85.00	233	153.00	232	217.00	3646	402.00	190
86.00	557	154.00	340	218.00	469	403.00	181
91.00	620	155.00	782	221.00	3625	421.00	177
92.00	235	156.00	1327	223.00	831	422.00	213
93.00	2712	157.00	178	224.00	8884	423.00	2481
98.00	1921	160.00	201	225.00	2118	424.00	230
99.00	1790	161.00	696	227.00	3149	441.00	8365
101.00	1054	165.00	450	228.00	469	442.00	53664
103.00	353	166.00	405	229.00	648	443.00	10694
104.00	667	167.00	2916	231.00	185	444.00	1054
105.00	634	168.00	1207	242.00	228		
107.00	10062	174.00	598	243.00	403		

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\UD673A.D

Date : 15-DEC-2016 10:26

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG196728-1,TJ0540

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD673A.D
Spectrum: Avg. Scans 144-146 (7.59), Background Scan 140
Location of Maximum: 198.00
Number of points: 141

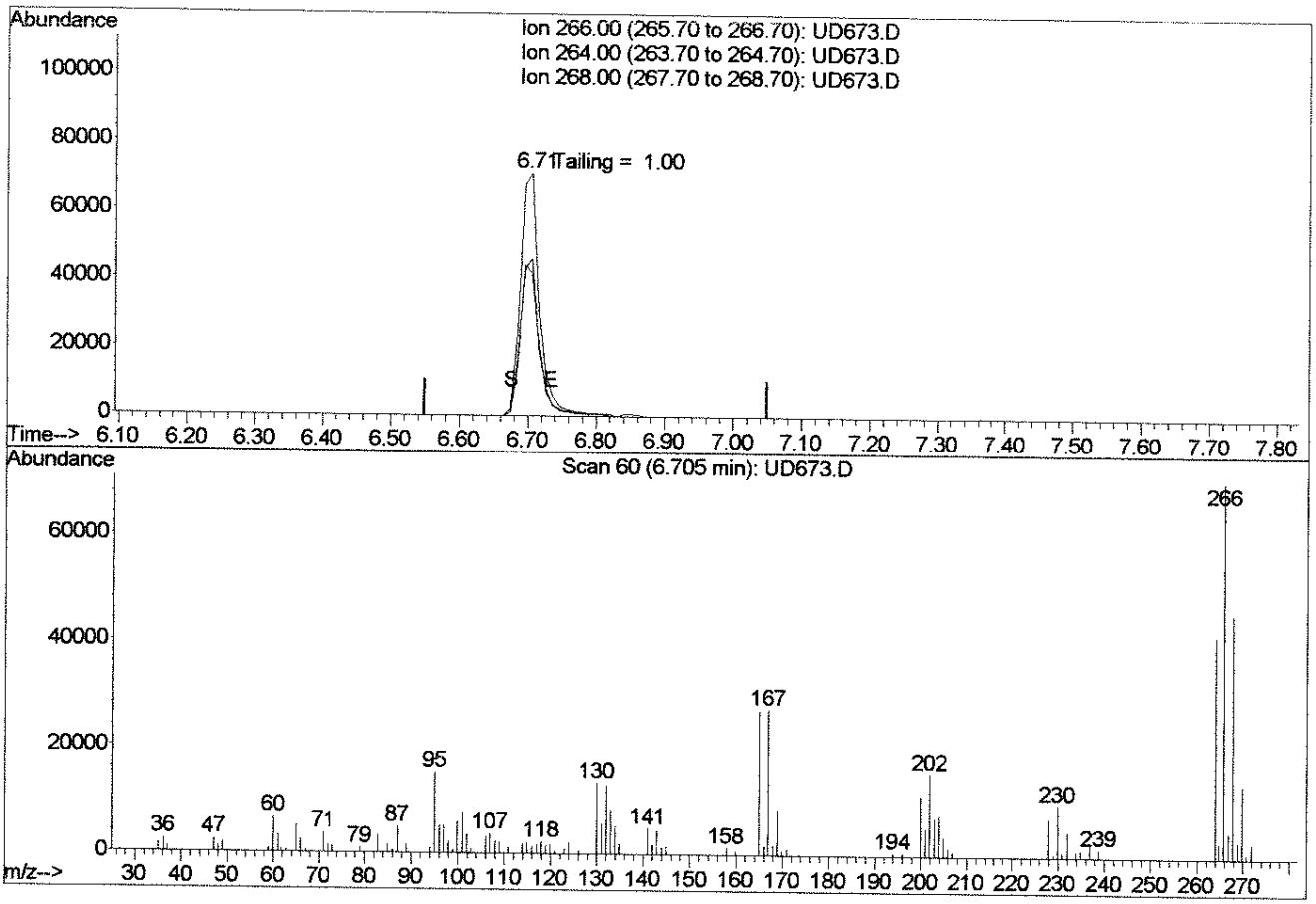
m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	1579	175.00	1027	244.00	6844		

Quantitation Report

Data File : C:\HPCHEM\1\DATA\U121516\UD673.D
Acq On : 15 Dec 2016 10:26 am
Sample : WG196640-1
Misc : WG196640,WG196640,WG195767-4
QS Integration Params : SEP16

Vial: 1
Operator: JCG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\TUNETAIL.M (RTE Integrator)
Title : Katahdin 8270C Water Calibration
Last Update : Tue Nov 22 12:42:19 2016
Response via : Multiple Level Calibration



TIC: UD673.D

(1) Pentachlorophenol (CM)

6.71min 63.18ug/L

response 139684

Ion	Exp%	Act%
266.00	100	100
264.00	62.00	62.48
268.00	63.50	64.39
0.00	0.00	0.00

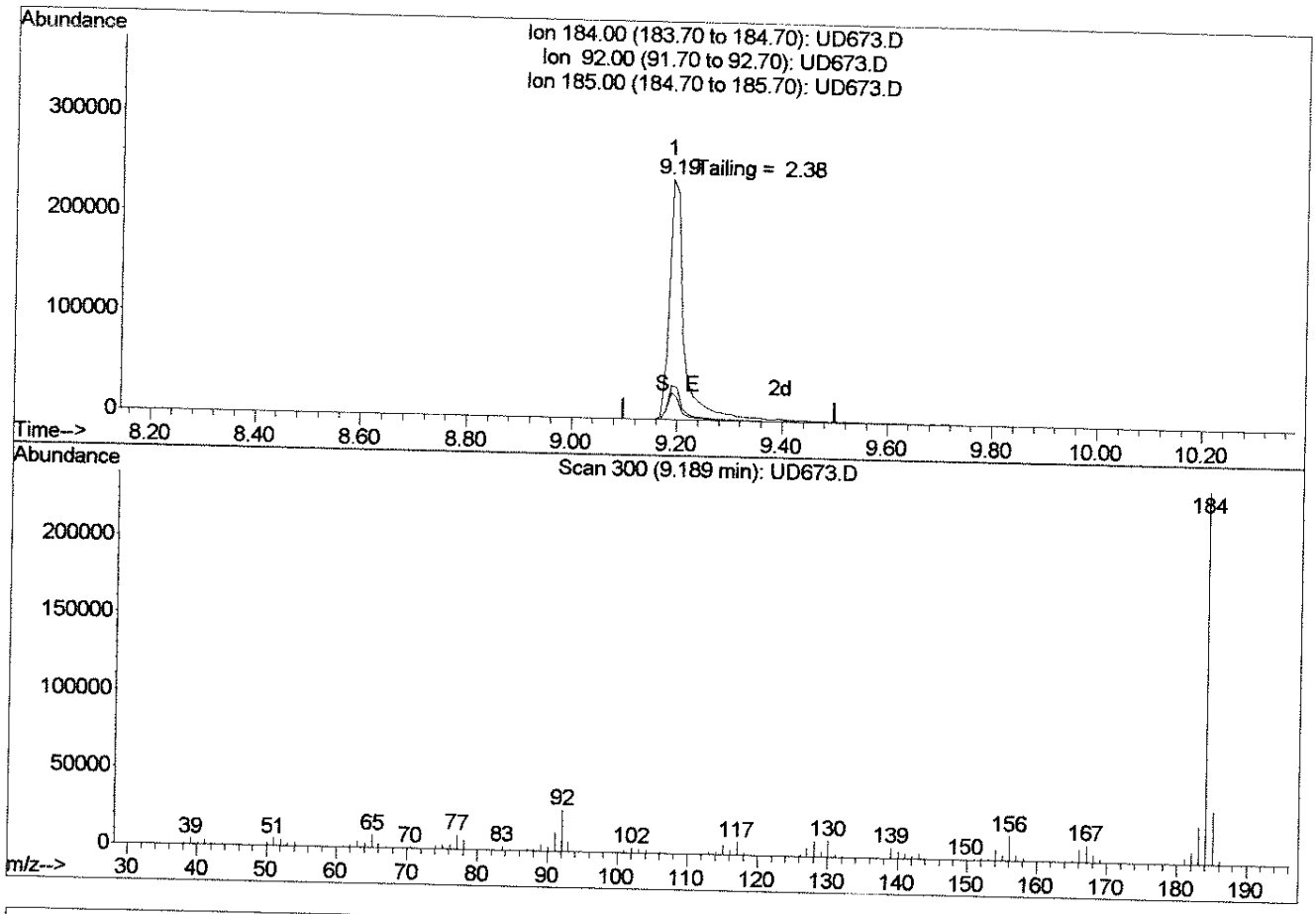
UD673.D TUNETAIL.M Thu Dec 15 10:41:21 2016

Quantitation Report

Data File : C:\HPCHEM\1\DATA\U121516\UD673.D
Acq On : 15 Dec 2016 10:26 am
Sample : WG196640-1
Misc : WG196640,WG196640,WG195767-4
QS Integration Parameters: 1 SEP 2016
Quant Time: Dec 15 10:40 2016

Vial: 1
Operator: JCG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\TUNETAIL.M (RTE Integrator)
Title : Katahdin 8270C Water Calibration
Last Update : Tue Nov 22 12:42:19 2016
Response via : Multiple Level Calibration



TIC: UD673.D

(2) Benzidine (T)

9.19min 106.42ug/L

response 477418

Ion	Exp%	Act%
184.00	100	100
92.00	12.20	10.44
185.00	14.40	14.45
0.00	0.00	0.00

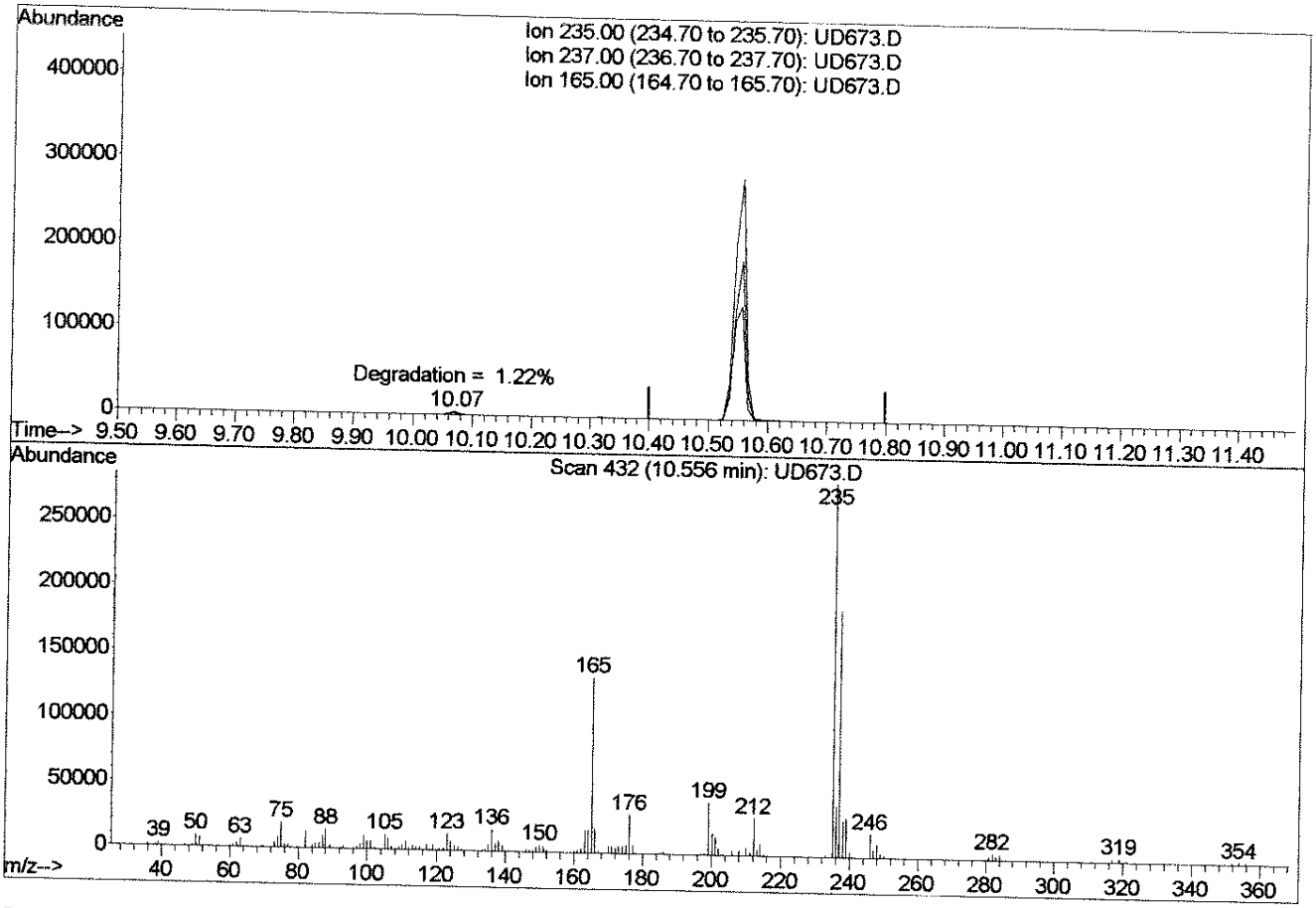
UD673.D TUNETAIL.M Thu Dec 15 10:41:14 2016

Quantitation Report

Data File : C:\HPCHEM\1\DATA\U121516\UD673.D
Acq On : 15 Dec 2016 10:26 am
Sample : WG196640-1
Misc : WG196640,WG196640,WG195767-4
QuantTime: Dec 15 10:40 2016
Quant Time: Dec 15 10:40 2016

Vial: 1
Operator: JCG
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\TUNETAIL.M (RTE Integrator)
Title : Katahdin 8270C Water Calibration
Last Update : Tue Nov 22 12:42:19 2016
Response via : Multiple Level Calibration



TIC: UD673.D

(3) 4,4'-DDT (T)

10.56min 81.79ug/L

response 366917

Ion	Exp%	Act%
235.00	100	100
237.00	50.00	64.37
165.00	50.00	50.71
0.00	0.00	0.00

UD673.D TUNETAIL.M Thu Dec 15 10:41:06 2016

Raw QC Data Section

Report of Analytical Results

Client:
Lab ID: WG196753-1
Client ID: Method Blank Sample
Project:
SDG: TJ0540
Lab File ID: U6538.D

Sample Date:
Received Date:
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA
Report Date: 21-DEC-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
N-Nitrosodimethylamine	U	5.0	ug/L	1	5	5.0	1.0
Phenol	U	5.0	ug/L	1	5	5.0	1.3
Bis(2-Chloroethyl)Ether	U	5.0	ug/L	1	5	5.0	0.99
2-Chlorophenol	U	5.0	ug/L	1	5	5.0	2.3
1,3-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	1.7
1,4-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	2.0
1,2-Dichlorobenzene	U	5.0	ug/L	1	5	5.0	1.8
Bis(2-Chloroisopropyl) Ether	U	5.0	ug/L	1	5	5.0	1.2
N-Nitroso-Di-N-Propylamine	U	5.0	ug/L	1	5	5.0	0.77
Hexachloroethane	U	5.0	ug/L	1	5	5.0	1.7
Nitrobenzene	U	5.0	ug/L	1	5	5.0	1.0
Isophorone	U	5.0	ug/L	1	5	5.0	0.83
2-Nitrophenol	U	5.0	ug/L	1	5	5.0	2.7
2,4-Dimethylphenol	U	5.0	ug/L	1	5	5.0	2.6
Bis(2-Chloroethoxy)Methane	U	5.0	ug/L	1	5	5.0	0.88
2,4-Dichlorophenol	U	5.0	ug/L	1	5	5.0	3.1
1,2,4-Trichlorobenzene	U	5.0	ug/L	1	5	5.0	1.8
Naphthalene	U	5.0	ug/L	1	5	5.0	1.8
Hexachlorobutadiene	U	5.0	ug/L	1	5	5.0	1.6
4-Chloro-3-Methylphenol	U	5.0	ug/L	1	5	5.0	2.2
Hexachlorocyclopentadiene	U	5.0	ug/L	1	5	5.0	0.73
2,4,6-Trichlorophenol	U	5.0	ug/L	1	5	5.0	2.6
2-Chloronaphthalene	U	5.0	ug/L	1	5	5.0	1.7
Dimethyl Phthalate	U	5.0	ug/L	1	5	5.0	0.90
2,6-Dinitrotoluene	U	5.0	ug/L	1	5	5.0	0.61
Acenaphthylene	U	5.0	ug/L	1	5	5.0	1.1
Acenaphthene	U	5.0	ug/L	1	5	5.0	1.3
2,4-Dinitrophenol	U	25	ug/L	1	25	25.	18.
4-Nitrophenol	U	20	ug/L	1	20	20.	4.6
2,4-Dinitrotoluene	U	5.0	ug/L	1	5	5.0	0.46
Diethylphthalate	U	5.0	ug/L	1	5	5.0	0.75
4-Chlorophenyl-Phenylether	U	5.0	ug/L	1	5	5.0	1.1
Fluorene	U	5.0	ug/L	1	5	5.0	0.97
4,6-Dinitro-2-Methylphenol	U	25	ug/L	1	25	25.	1.2

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client:
Lab ID: WG196753-1
Client ID: Method Blank Sample
Project:
SDG: TJ0540
Lab File ID: U6538.D

Sample Date:
Received Date:
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA
Report Date: 21-DEC-16

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
N-Nitrosodiphenylamine	U	5.0	ug/L	1	5	5.0	0.54
4-Bromophenyl-Phenylether	U	5.0	ug/L	1	5	5.0	1.1
Hexachlorobenzene	U	5.0	ug/L	1	5	5.0	0.91
Pentachlorophenol	U	20	ug/L	1	20	20.	1.8
Phenanthrene	U	5.0	ug/L	1	5	5.0	2.8
Anthracene	U	5.0	ug/L	1	5	5.0	0.75
Di-N-Butylphthalate	U	5.0	ug/L	1	5	5.0	0.76
Fluoranthene	U	5.0	ug/L	1	5	5.0	0.70
Benzidine	U	25	ug/L	1	25	25.	12.
Pyrene	U	5.0	ug/L	1	5	5.0	0.62
Butylbenzylphthalate	U	5.0	ug/L	1	5	5.0	0.54
3,3'-Dichlorobenzidine	U	5.0	ug/L	1	5	5.0	1.8
Benzo(a)anthracene	U	5.0	ug/L	1	5	5.0	0.67
Chrysene	U	5.0	ug/L	1	5	5.0	0.90
Bis(2-Ethylhexyl)Phthalate	U	5.0	ug/L	1	5	5.0	0.56
Di-N-Octylphthalate	U	5.0	ug/L	1	5	5.0	0.67
Benzo(b)fluoranthene	U	5.0	ug/L	1	5	5.0	2.2
Benzo(k)fluoranthene	U	5.0	ug/L	1	5	5.0	2.5
Benzo(a)pyrene	U	5.0	ug/L	1	5	5.0	2.1
Indeno(1,2,3-cd)pyrene	U	5.0	ug/L	1	5	5.0	1.2
Dibenzo(a,h)anthracene	U	5.0	ug/L	1	5	5.0	1.2
Benzo(g,h,i)perylene	U	5.0	ug/L	1	5	5.0	1.3
2-Fluorophenol		10.8	%				
Phenol-d6	*	7.38	%				
Nitrobenzene-d5		65.8	%				
2-Fluorobiphenyl		62.4	%				
2,4,6-Tribromophenol		42.8	%				
Terphenyl-d14		91.6	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6538.D
Report Date: 21-Dec-2016 10:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U121516.b\U6538.D
Lab Smp Id: WG196753-1 Client Smp ID: WG196753-Blank
Inj Date : 16-DEC-2016 00:21 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG196753-1,TJ0540
Misc Info : WG196728,WG196753,WG193442-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U121516.b\U625A039.m
Meth Date : 15-Dec-2016 15:06 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 27 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: e625.sub
Target Version: 4.12
Processing Host: V200T4

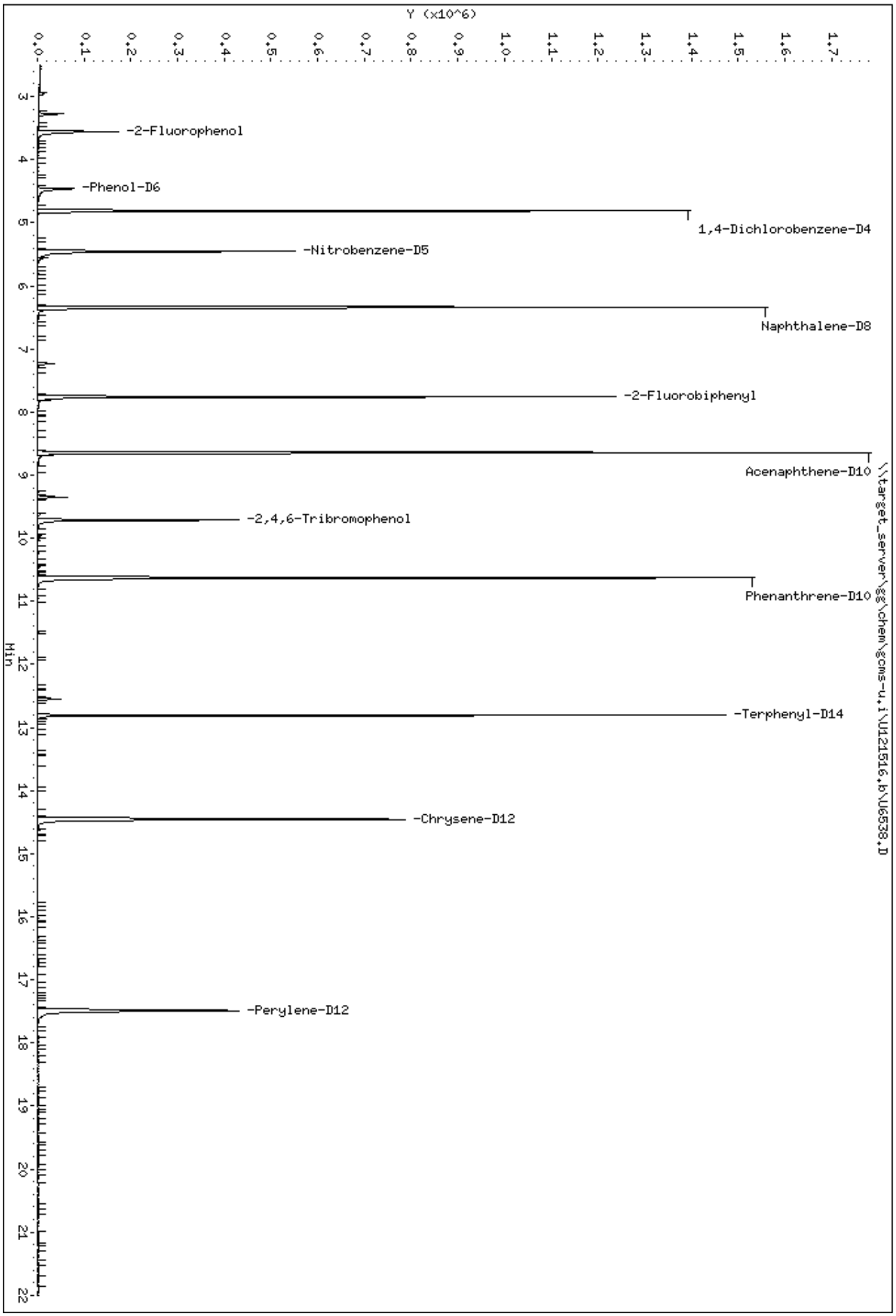
Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 2-Fluorophenol	112	3.549	3.540	(0.738)	99697	10.7876	10.8	
$ 4 Phenol-D6	99	4.459	4.451	(0.927)	80748	7.38407	7.38(R)	
* 8 1,4-Dichlorobenzene-D4	152	4.811	4.813	(1.000)	283644	40.0000		
$ 16 Nitrobenzene-D5	82	5.453	5.465	(0.861)	274972	32.8887	32.9	
* 25 Naphthalene-D8	136	6.333	6.345	(1.000)	1052914	40.0000		
$ 33 2-Fluorobiphenyl	172	7.761	7.763	(0.898)	464723	31.2123	31.2	
* 39 Acenaphthene-D10	164	8.641	8.643	(1.000)	498616	40.0000		
$ 51 2,4,6-Tribromophenol	330	9.707	9.719	(1.123)	82740	42.8585	42.8	
* 55 Phenanthrene-D10	188	10.628	10.640	(1.000)	904806	40.0000		
$ 63 Terphenyl-D14	244	12.812	12.814	(0.886)	550866	45.7878	45.8	
* 67 Chrysene-D12	240	14.458	14.470	(1.000)	558478	40.0000		
* 74 Perylene-D12	264	17.490	17.492	(1.000)	356147	40.0000		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Y (x10^6)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
Min
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
-2-Fluorophenol
-Phenol-D6
1,4-Dichlorobenzene-D4
-Nitrobenzene-D5
Naphthalene-D8
-2-Fluorobiphenyl
Acenaphthene-D10
-2,4,6-Tribromophenol
Phenanthrene-D10
-Terphenyl-D14
-Chrysene-D12
-Perylene-D12
\\target_server\gg\chem\gcms-u.i\U121516.b\U6538.D
Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6538.D
Date : 16-DEC-2016 00:21
Client ID: WG196753-Blank
Sample Info: WG196753-1,TJO540
Instrument: gcms-u.i

LCS/LCSD Recovery Report

LCS ID: WG196753-2
LCSD ID: WG196753-3
Project:
SDG: TJ0540
Report Date: 23-DEC-16
LCS File ID: U6539.D

Received Date:
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753
LCSD File ID: U6542.D

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
N-Nitrosodimethylamine	50.0	15.4	30.8	8.21	16.4	ug/L	61*	30	0-100
Phenol	100.	16.6	16.6	8.10	8.10	ug/L	69*	30	5-112
Bis(2-Chloroethyl)Ether	50.0	33.3	66.6	20.9	41.8	ug/L	46*	30	12-158
2-Chlorophenol	100.	43.1	43.1	24.0	24.0	ug/L	57*	30	23-134
1,3-Dichlorobenzene	50.0	32.1	64.2	20.9	41.8	ug/L	42*	30	0-172
1,4-Dichlorobenzene	50.0	34.0	68.0	18.0	36.0	ug/L	62*	30	20-124
1,2-Dichlorobenzene	50.0	35.0	70.0	22.5	45.0	ug/L	43*	30	32-129
Bis(2-Chloroisopropyl) Ether	50.0	25.2	50.4	16.4	32.8*	ug/L	42*	30	36-166
N-Nitroso-Di-N-Propylamine	50.0	37.1	74.2	22.3	44.6	ug/L	50*	30	0-230
Hexachloroethane	50.0	34.4	68.8	21.8	43.6	ug/L	45*	30	40-113
Nitrobenzene	50.0	36.7	73.4	22.3	44.6	ug/L	49*	30	35-180
Isophorone	50.0	38.7	77.4	20.5	41.0	ug/L	61*	30	21-196
2-Nitrophenol	100.	50.5	50.5	26.6	26.6*	ug/L	62*	30	29-182
2,4-Dimethylphenol	100.	71.2	71.2	41.7	41.7	ug/L	52*	30	32-119
Bis(2-Chloroethoxy)Methane	50.0	32.0	64.0	18.1	36.2	ug/L	55*	30	33-184
2,4-Dichlorophenol	100.	57.7	57.7	29.7	29.7*	ug/L	64*	30	39-135
1,2,4-Trichlorobenzene	50.0	37.2	74.4	22.7	45.4	ug/L	48*	30	44-142
Naphthalene	50.0	39.2	78.4	22.9	45.8	ug/L	52*	30	21-133
Hexachlorobutadiene	50.0	42.5	85.0	25.6	51.2	ug/L	50*	30	24-116
4-Chloro-3-Methylphenol	100.	80.6	80.6	47.6	47.6	ug/L	51*	30	22-147
Hexachlorocyclopentadiene	50.0	31.5	63.0	18.7	37.4	ug/L	51*	30	0-100
2,4,6-Trichlorophenol	100.	56.3	56.3	31.9	31.9*	ug/L	55*	30	37-144
2-Chloronaphthalene	50.0	34.5	69.0	21.8	43.6*	ug/L	45*	30	60-118
Dimethyl Phthalate	50.0	46.8	93.6	29.4	58.8	ug/L	46*	30	0-112
2,6-Dinitrotoluene	50.0	48.8	97.6	28.8	57.6	ug/L	52*	30	50-158
Acenaphthylene	50.0	37.5	75.0	23.8	47.6	ug/L	45*	30	33-145
Acenaphthene	50.0	41.8	83.6	26.7	53.4	ug/L	44*	30	47-145
2,4-Dinitrophenol	100.	63.7	63.7	32.9	32.9	ug/L	64*	30	0-191
4-Nitrophenol	100.	29.5	29.5	12.9	12.9	ug/L	78*	30	0-132
2,4-Dinitrotoluene	50.0	49.4	98.8	30.6	61.2	ug/L	47*	30	39-139
Diethylphthalate	50.0	48.7	97.4	29.4	58.8	ug/L	49*	30	0-114
4-Chlorophenyl-Phenylether	50.0	53.1	106.	34.6	69.2	ug/L	42*	30	25-158
Fluorene	50.0	50.6	101.	31.2	62.4	ug/L	47*	30	59-121
4,6-Dinitro-2-Methylphenol	100.	76.1	76.1	39.2	39.2	ug/L	64*	30	0-181

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P.O. Box 540, Scarborough, ME 04070
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LCS/LCSD Recovery Report

LCS ID: WG196753-2
LCSD ID: WG196753-3
Project:
SDG: TJ0540
Report Date: 23-DEC-16
LCS File ID: U6539.D

Received Date:
Extract Date: 15-DEC-16
Extracted By: KF
Extraction Method: EPA 625
Lab Prep Batch: WG196753
LCSD File ID: U6542.D

Analysis Date: 16-DEC-16
Analyst: JCG
Analysis Method: EPA 625
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
N-Nitrosodiphenylamine	50.0	40.2	80.4	25.3	50.6	ug/L	45*	30	0-100
4-Bromophenyl-Phenylether	50.0	47.8	95.6	31.8	63.6	ug/L	40*	30	53-127
Hexachlorobenzene	50.0	48.6	97.2	30.7	61.4	ug/L	45*	30	0-152
Pentachlorophenol	100.	83.7	83.7	46.8	46.8	ug/L	56*	30	14-176
Phenanthrene	50.0	57.6	115.	37.0	74.0	ug/L	44*	30	54-120
Anthracene	50.0	50.7	101.	32.4	64.8	ug/L	44*	30	27-133
Di-N-Butylphthalate	50.0	53.3	107.	31.8	63.6	ug/L	50*	30	1-118
Fluoranthene	50.0	52.6	105.	34.0	68.0	ug/L	43*	30	26-137
Benzidine	100.	79.5	79.5	50.1	50.1	ug/L	45*	30	0-100
Pyrene	50.0	46.4	92.8	26.8	53.6	ug/L	54*	30	52-115
Butylbenzylphthalate	50.0	45.2	90.4	28.2	56.4	ug/L	46*	30	0-152
3,3'-Dichlorobenzidine	100.	110.	110.	74.2	74.2	ug/L	39*	30	0-262
Benzo(a)anthracene	50.0	46.8	93.6	29.8	59.6	ug/L	44*	30	33-143
Chrysene	50.0	45.8	91.6	28.9	57.8	ug/L	45*	30	17-168
Bis(2-Ethylhexyl)Phthalate	50.0	43.1	86.2	26.8	53.6	ug/L	47*	30	8-158
Di-N-Octylphthalate	50.0	41.9	83.8	24.8	49.6	ug/L	51*	30	4-146
Benzo(b)fluoranthene	50.0	50.1	100.	29.2	58.4	ug/L	53*	30	24-159
Benzo(k)fluoranthene	50.0	49.2	98.4	22.8	45.6	ug/L	73*	30	11-162
Benzo(a)pyrene	50.0	50.5	101.	29.2	58.4	ug/L	53*	30	17-163
Indeno(1,2,3-cd)pyrene	50.0	65.8	132.	30.6	61.2	ug/L	73*	30	0-171
Dibenzo(a,h)anthracene	50.0	51.1	102.	31.9	63.8	ug/L	46*	30	0-227
Benzo(g,h,i)perylene	50.0	49.5	99.0	29.4	58.8	ug/L	51*	30	0-219
2-Fluorophenol			19.6		10.8				10-80
Phenol-d6			15.0		7.43*				10-90
Nitrobenzene-d5			71.6		43.3				41-91
2-Fluorobiphenyl			72.7		45.6				43-90
2,4,6-Tribromophenol			69.5		43.3				37-112
Terphenyl-d14			99.5		58.4				36-156

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Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6539.D
Report Date: 21-Dec-2016 10:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U121516.b\U6539.D
Lab Smp Id: WG196753-2 Client Smp ID: WG196753-LCS
Inj Date : 16-DEC-2016 00:51 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG196753-2,TJ0540
Misc Info : WG196728,WG196753,WG193442-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U121516.b\U625A039.m
Meth Date : 15-Dec-2016 15:06 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 28 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: e625.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

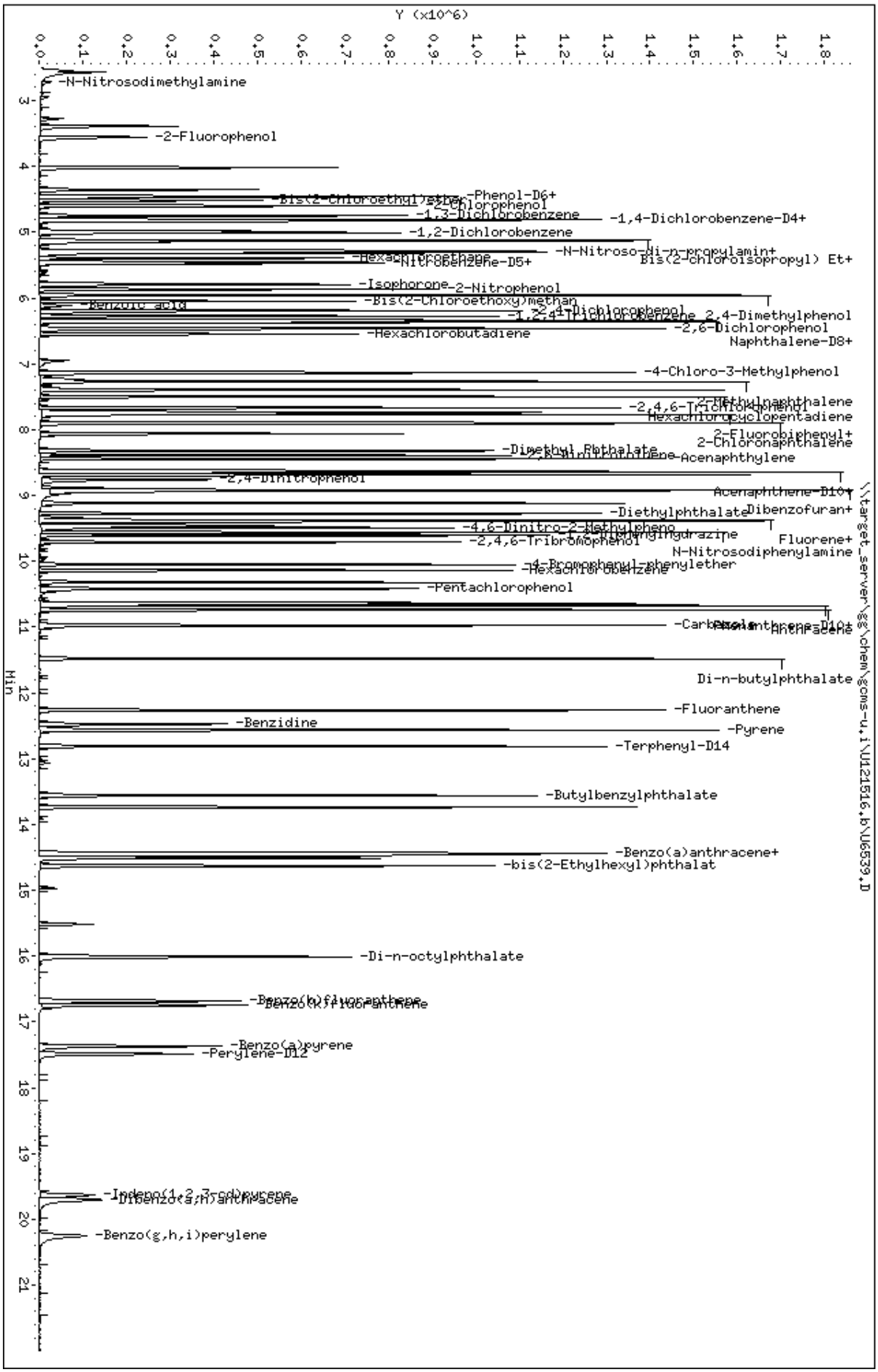
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	1 N-Nitrosodimethylamine	42	2.536	2.536	(0.527)	48834	15.4025	15.4(R)	
$	2 2-Fluorophenol	112	3.551	3.540	(0.738)	160623	19.5678	19.6	
$	4 Phenol-D6	99	4.451	4.451	(0.925)	145694	15.0002	15.0	
	5 Phenol	94	4.461	4.461	(0.927)	172733	16.6022	16.6	
	3 Bis(2-Chloroethyl)ether	93	4.523	4.523	(0.940)	246175	33.2922	33.3	
	6 2-Chlorophenol	128	4.606	4.606	(0.957)	355747	43.0727	43.1	
	7 1,3-Dichlorobenzene	146	4.751	4.751	(0.987)	264002	32.1134	32.1	
*	8 1,4-Dichlorobenzene-D4	152	4.813	4.813	(1.000)	251932	40.0000		
	9 1,4-Dichlorobenzene	146	4.834	4.834	(1.004)	264511	33.9995	34.0	
	10 1,2-Dichlorobenzene	146	5.010	5.010	(1.041)	259536	34.9908	35.0	
	11 Bis(2-chloroisopropyl) Ether	45	5.124	5.134	(1.065)	231587	25.1576	25.2(Q)	
	14 Hexachloroethane	117	5.393	5.403	(1.120)	114149	34.3687	34.4	
	13 N-Nitroso-di-n-propylamine	70	5.289	5.310	(1.099)	164985	37.1321	37.1(Q)	
$	16 Nitrobenzene-D5	82	5.455	5.465	(0.861)	257516	35.7990	35.8	
	17 Nitrobenzene	77	5.476	5.486	(0.864)	237684	36.6704	36.7	
	18 Isophorone	82	5.797	5.786	(0.915)	531316	38.7024	38.7	
	19 2-Nitrophenol	139	5.869	5.869	(0.926)	203777	50.5479	50.5	
	20 2,4-Dimethylphenol	107	5.962	5.962	(0.941)	486321	71.1549	71.2	
	21 Bis(2-Chloroethoxy)methane	93	6.045	6.055	(0.954)	320656	31.9931	32.0	
	22 2,4-Dichlorophenol	162	6.190	6.200	(0.977)	311705	57.6863	57.7	
	23 1,2,4-Trichlorobenzene	180	6.273	6.273	(0.990)	211279	37.1698	37.2	

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6539.D
Report Date: 21-Dec-2016 10:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	25 Naphthalene-D8	136	6.335	6.345	(1.000)	905909	40.0000		
	26 Naphthalene	128	6.366	6.366	(1.005)	705301	39.2410	39.2	
	28 Hexachlorobutadiene	225	6.552	6.552	(1.034)	113771	42.5180	42.5	
	29 4-Chloro-3-Methylphenol	107	7.132	7.142	(1.126)	453687	80.5678	80.6	
	31 Hexachlorocyclopentadiene	237	7.494	7.494	(0.867)	79944	31.4623	31.5	
	32 2,4,6-Trichlorophenol	196	7.660	7.670	(0.886)	222464	56.3272	56.3	
$	33 2-Fluorobiphenyl	172	7.763	7.763	(0.898)	482990	36.3683	36.4	
	35 2-Chloronaphthalene	162	7.908	7.908	(0.915)	436080	34.4696	34.5	
	38 Acenaphthylene	152	8.446	8.457	(0.977)	731608	37.4783	37.5	
	36 Dimethyl Phthalate	163	8.332	8.343	(0.964)	654225	46.8317	46.8	
	37 2,6-Dinitrotoluene	165	8.394	8.405	(0.971)	155054	48.8084	48.8	
*	39 Acenaphthene-D10	164	8.643	8.643	(1.000)	444747	40.0000		
	40 Acenaphthene	153	8.684	8.695	(1.005)	470850	41.8315	41.8	
	41 2,4-Dinitrophenol	184	8.767	8.788	(1.014)	111355	63.7232	63.7	
	44 4-Nitrophenol	109	8.953	8.964	(1.036)	33082	29.4825	29.5(Q)	
	43 2,4-Dinitrotoluene	165	8.933	8.953	(1.034)	187535	49.3889	49.4	
	46 Fluorene	166	9.378	9.388	(1.085)	558944	50.6105	50.6	
	45 Diethylphthalate	149	9.274	9.285	(1.073)	662428	48.6695	48.7	
	47 4-Chlorophenyl-phenylether	204	9.398	9.398	(1.087)	263915	53.1052	53.1	
	48 4,6-Dinitro-2-Methylphenol	198	9.492	9.502	(0.893)	154757	76.1148	76.1	
	49 N-Nitrosodiphenylamine	169	9.564	9.574	(0.900)	429710	40.2222	40.2	
$	51 2,4,6-Tribromophenol	330	9.709	9.719	(1.123)	119741	69.5372	69.5	
	52 4-Bromophenyl-phenylether	248	10.050	10.050	(0.945)	150028	47.7868	47.8	
	53 Hexachlorobenzene	284	10.133	10.144	(0.953)	168652	48.6030	48.6	
	54 Pentachlorophenol	266	10.423	10.433	(0.981)	139136	83.6605	83.7	
*	55 Phenanthrene-D10	188	10.630	10.640	(1.000)	766038	40.0000		
	56 Phenanthrene	178	10.671	10.671	(1.004)	857411	57.5766	57.6	
	57 Anthracene	178	10.734	10.744	(1.010)	870810	50.7430	50.7	
	59 Di-n-butylphthalate	149	11.489	11.489	(1.081)	1126844	53.2883	53.3	
	60 Fluoranthene	202	12.265	12.276	(1.154)	796773	52.5894	52.6	
	61 Benzidine	184	12.472	12.483	(0.863)	295133	79.5321	79.5	
	62 Pyrene	202	12.566	12.576	(0.869)	801076	46.3519	46.4	
$	63 Terphenyl-D14	244	12.814	12.814	(0.886)	486338	49.7672	49.8	
	64 Butylbenzylphthalate	149	13.559	13.559	(0.938)	372583	45.2011	45.2	
	65 Benzo(a)anthracene	228	14.439	14.449	(0.999)	478797	46.8332	46.8	
*	67 Chrysene-D12	240	14.460	14.470	(1.000)	453633	40.0000		
	68 Chrysene	228	14.511	14.511	(1.004)	475826	45.8296	45.8	
	66 3,3'-Dichlorobenzidine	252	14.429	14.439	(0.998)	270895	110.409	110	
	69 bis(2-Ethylhexyl)phthalate	149	14.625	14.636	(1.011)	496829	43.1142	43.1	
	70 Di-n-octylphthalate	149	16.012	16.022	(0.916)	749524	41.8838	41.9	
	71 Benzo(b)fluoranthene	252	16.685	16.706	(0.954)	353132	50.1354	50.1	
	72 Benzo(k)fluoranthene	252	16.747	16.757	(0.958)	377684	49.1892	49.2(H)	
	73 Benzo(a)pyrene	252	17.368	17.378	(0.993)	303611	50.5187	50.5	
*	74 Perylene-D12	264	17.482	17.492	(1.000)	267288	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.635	19.645	(1.123)	206793	65.7544	65.8	
	76 Dibenzo(a,h)anthracene	278	19.707	19.707	(1.127)	164516	51.1149	51.1	
	77 Benzo(g,h,i)perylene	276	20.256	20.256	(1.159)	176263	49.5399	49.5	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.


Y (x10^6)
Min
-N-Nitrosodimethylamine
-2-Fluorophenol
-Phenol-D6+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-N-Nitroso-di-n-propylamin+
Bis(2-Chloroisopropyl) Et+
-Nitrobenzene-D5+
-Isophorone
-2-Nitrophenol
-Benzoic acid
-Bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-2,6-Dichlorophenol
Naphthalene-D8+
-Hexachlorobutadiene
-4-Chloro-3-Methylphenol
2-Methylnaphthalene
-2,4,6-Trichlorophenol
Hexachlorocyclopentadiene
2-Fluorobiphenyl+
2-Chloronaphthalene
-Dimethyl Phthalate
-Acenaphthylene
-2,4-Dinitrophenol
Acenaphthene-D10+
Dibenzofuran+
-Diethylphthalate
-4,6-Dinitro-2-Methylpheno
-2,4,6-Tribromophenol
Fluorene+
N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
Phenanthrene-D10+
Anthracene
Di-n-butylphthalate
-Fluoranthene
-Benzidine
-Pyrene
-Terphenyl-D14
-Butylbenzylphthalate
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene
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Data File: \\target_server\gg\chem\gcms-u,i\U121516,b\U6539,D
Date : 16-DEC-2016 00:51
Client ID: WG196753-LCS
Sample Info: WG196753-2,TJO540
Volume Injected (uL): 1.0
Column phase:
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6542.D
Report Date: 21-Dec-2016 10:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U121516.b\U6542.D
Lab Smp Id: WG196753-3 Client Smp ID: WG196753-LCSD
Inj Date : 16-DEC-2016 02:22 MS Autotune Date: 02-JAN-2015 09:23
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG196753-3,TJ0540
Misc Info : WG196728,WG196753,WG193442-3,TJ0540-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U121516.b\U625A039.m
Meth Date : 15-Dec-2016 15:06 cgomez Quant Type: ISTD
Cal Date : 26-OCT-2016 10:23 Cal File: U6046.D
Als bottle: 31 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Vt/Vo*1000*Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

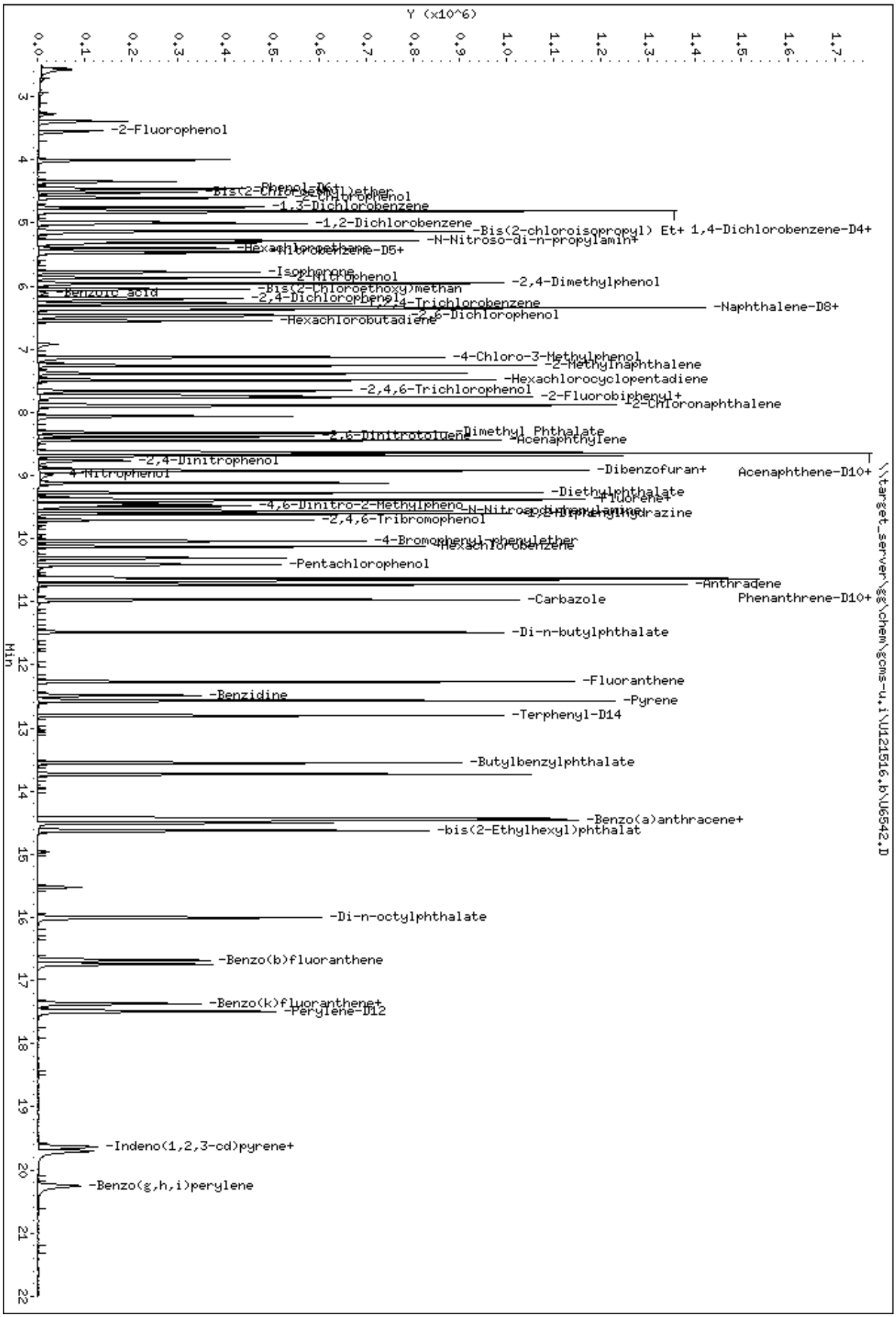
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	1 N-Nitrosodimethylamine	42	2.544	2.536	(0.529)	25816	8.20612	8.21(R)	
$	2 2-Fluorophenol	112	3.548	3.540	(0.738)	87896	10.7915	10.8	
$	4 Phenol-D6	99	4.449	4.451	(0.925)	71617	7.43105	7.43(R)	
	5 Phenol	94	4.470	4.461	(0.929)	83634	8.10129	8.10(Q)	
	3 Bis(2-Chloroethyl)ether	93	4.521	4.523	(0.940)	153190	20.8789	20.9	
	6 2-Chlorophenol	128	4.604	4.606	(0.957)	196636	23.9941	24.0	
	7 1,3-Dichlorobenzene	146	4.749	4.751	(0.987)	170165	20.8607	20.9	
*	8 1,4-Dichlorobenzene-D4	152	4.811	4.813	(1.000)	249979	40.0000		
	9 1,4-Dichlorobenzene	146	4.832	4.834	(1.004)	138774	17.9770	18.0	
	10 1,2-Dichlorobenzene	146	5.008	5.010	(1.041)	165524	22.4904	22.5	
	11 Bis(2-chloroisopropyl) Ether	45	5.132	5.134	(1.067)	149721	16.3915	16.4(QR)	
	14 Hexachloroethane	117	5.391	5.403	(1.120)	71916	21.8221	21.8	
	13 N-Nitroso-di-n-propylamine	70	5.287	5.310	(1.099)	98328	22.3030	22.3(Q)	
$	16 Nitrobenzene-D5	82	5.453	5.465	(0.860)	163756	21.6645	21.7	
	17 Nitrobenzene	77	5.474	5.486	(0.863)	151728	22.2774	22.3	
	18 Isophorone	82	5.774	5.786	(0.910)	295910	20.5130	20.5	
	19 2-Nitrophenol	139	5.867	5.869	(0.925)	112712	26.6074	26.6(R)	
	20 2,4-Dimethylphenol	107	5.950	5.962	(0.938)	299600	41.7164	41.7	
	21 Bis(2-Chloroethoxy)methane	93	6.043	6.055	(0.953)	190661	18.1035	18.1	
	22 2,4-Dichlorophenol	162	6.198	6.200	(0.977)	168769	29.7239	29.7(R)	
	23 1,2,4-Trichlorobenzene	180	6.270	6.273	(0.989)	135536	22.6920	22.7	

Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6542.D
Report Date: 21-Dec-2016 10:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	25 Naphthalene-D8	136	6.343	6.345	(1.000)	951921	40.0000		
	26 Naphthalene	128	6.364	6.366	(1.003)	433090	22.9312	22.9	
	28 Hexachlorobutadiene	225	6.550	6.552	(1.033)	71954	25.5906	25.6	
	29 4-Chloro-3-Methylphenol	107	7.130	7.142	(1.124)	281920	47.6447	47.6	
	31 Hexachlorocyclopentadiene	237	7.492	7.494	(0.867)	48763	18.7398	18.7	
	32 2,4,6-Trichlorophenol	196	7.668	7.670	(0.887)	128967	31.8865	31.9(R)	
$	33 2-Fluorobiphenyl	172	7.761	7.763	(0.898)	309777	22.7774	22.8	
	35 2-Chloronaphthalene	162	7.906	7.908	(0.915)	283013	21.8447	21.8(R)	
	38 Acenaphthylene	152	8.444	8.457	(0.977)	475397	23.7808	23.8	
	36 Dimethyl Phthalate	163	8.320	8.343	(0.963)	420161	29.3696	29.4	
	37 2,6-Dinitrotoluene	165	8.382	8.405	(0.970)	93726	28.8099	28.8	
*	39 Acenaphthene-D10	164	8.641	8.643	(1.000)	455453	40.0000		
	40 Acenaphthene	153	8.682	8.695	(1.005)	308102	26.7291	26.7	
	41 2,4-Dinitrophenol	184	8.765	8.788	(1.014)	58852	32.8866	32.9	
	44 4-Nitrophenol	109	8.982	8.964	(1.040)	14870	12.9406	12.9(aQ)	
	43 2,4-Dinitrotoluene	165	8.930	8.953	(1.034)	118919	30.5822	30.6	
	46 Fluorene	166	9.376	9.388	(1.085)	353268	31.2353	31.2	
	45 Diethylphthalate	149	9.272	9.285	(1.073)	410094	29.4219	29.4	
	47 4-Chlorophenyl-phenylether	204	9.396	9.398	(1.087)	176196	34.6209	34.6	
	48 4,6-Dinitro-2-Methylphenol	198	9.489	9.502	(0.892)	86495	39.2448	39.2	
	49 N-Nitrosodiphenylamine	169	9.562	9.574	(0.899)	293493	25.3432	25.3	
$	51 2,4,6-Tribromophenol	330	9.707	9.719	(1.123)	76376	43.3113	43.3	
	52 4-Bromophenyl-phenylether	248	10.048	10.050	(0.945)	108255	31.8095	31.8	
	53 Hexachlorobenzene	284	10.131	10.144	(0.952)	115498	30.7057	30.7	
	54 Pentachlorophenol	266	10.421	10.433	(0.980)	84440	46.8384	46.8	
*	55 Phenanthrene-D10	188	10.638	10.640	(1.000)	830381	40.0000		
	56 Phenanthrene	178	10.669	10.671	(1.003)	597122	36.9907	37.0	
	57 Anthracene	178	10.731	10.744	(1.009)	601990	32.3605	32.4	
	59 Di-n-butylphthalate	149	11.487	11.489	(1.080)	728059	31.7620	31.8	
	60 Fluoranthene	202	12.263	12.276	(1.153)	557674	33.9560	34.0	
	61 Benzidine	184	12.481	12.483	(0.863)	237813	50.1421	50.1	
	62 Pyrene	202	12.563	12.576	(0.869)	593180	26.8548	26.8	
$	63 Terphenyl-D14	244	12.812	12.814	(0.886)	364572	29.1897	29.2	
	64 Butylbenzylphthalate	149	13.557	13.559	(0.938)	297085	28.2000	28.2	
	65 Benzo(a)anthracene	228	14.437	14.449	(0.999)	389797	29.8320	29.8	
*	67 Chrysene-D12	240	14.457	14.470	(1.000)	579779	40.0000		
	68 Chrysene	228	14.509	14.511	(1.004)	383367	28.8905	28.9	
	66 3,3'-Dichlorobenzidine	252	14.426	14.439	(0.998)	232616	74.1800	74.2	
	69 bis(2-Ethylhexyl)phthalate	149	14.623	14.636	(1.011)	394987	26.8187	26.8	
	70 Di-n-octylphthalate	149	16.010	16.022	(0.915)	623076	24.7501	24.8	
	71 Benzo(b)fluoranthene	252	16.683	16.706	(0.954)	289756	29.2425	29.2	
	72 Benzo(k)fluoranthene	252	17.366	16.757	(0.993)	246658	22.8355	22.8	
	73 Benzo(a)pyrene	252	17.366	17.378	(0.993)	246658	29.1746	29.2	
*	74 Perylene-D12	264	17.490	17.492	(1.000)	376015	40.0000		
	75 Indeno(1,2,3-cd)pyrene	276	19.643	19.645	(1.123)	135512	30.6296	30.6	
	76 Dibenzo(a,h)anthracene	278	19.705	19.707	(1.127)	144524	31.9193	31.9	
	77 Benzo(g,h,i)perylene	276	20.254	20.256	(1.158)	147400	29.4487	29.4	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.


Y (x10^6)
Min
-2-Fluorophenol
-1,3-Dichlorobenzene
-1,2-Dichlorobenzene
-Bis(2-chloroisopropyl) Et+ 1,4-Dichlorobenzene-D4+
-N-Nitroso-di-n-propylamin+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Benzoic acid
-Bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-Hexachlorobutadiene
-2,6-Dichlorophenol
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-Hexachlorocyclopentadiene
-2,4,6-Trichlorophenol
-2-Fluorobiphenyl+
-2-Chloronaphthalene
-Dimethyl Phthalate
-Acenaphthylene
-2,4-Dinitrophenol
-Dibenzofuran+
Acenaphthene-D10+
-Diethylphthalate
-Fluorene+
-4,6-Dinitro-2-Methylpheno
-2,4,6-Tribromophenol
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Anthracene
Phenanthrene-D10+
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Benzidine
-Pyrene
-Terphenyl-D14
-Butylbenzylphthalate
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene+
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene
Data File: \\target_server\gg\chem\gcms-u.i\U121516.b\U6542.D
Date : 16-DEC-2016 02:22
Client ID: WG196753-LCSD
Sample Info: WG196753-3,TJO540
Instrument: gcms-u.i
\\target_server\gg\chem\gcms-u.i\U121516.b\U6542.D

Logbooks and Supporting Documents

625/SVOA
SEP

KATAHDIN ANALYTICAL SERVICES, LLC.
ORGANIC EXTRACTIONS LOG - AQUEOUS SEMI-VOLATILES

Extraction Method: (check one)	SW846 3510 (SEP) ✓		SW846 3520 (CLLE)		SW846 3535 (SPE)
Analytical Method: (check one)	SW846 8270 ✓	EPA 625 ✓	CLP OLM04.2	CLP OLC02.1	CLP SOM01.2
Standards	Surrogate ID (1): SV2797		Spike ID (1): SV2783		
	Surrogate ID (2):		Spike ID (2):		
Solvents/Acid/Base	Solvent Lot # (Mecl2): DQ534		H_2SO_4 Lot # 117597		NaOH Lot # 144107
Consumables	Filter Paper Lot # 9703719		$NaSO_4$ Lot # 279 66083		pH Paper Lot # HC581117
Nitrogen Water Bath Temperature	36C		pH (1st Extraction) ≤2		pH (2nd Extraction) 11
Prep Start Time: 1255	Prep End Time:		CLLE Start Time:		CLLE End Date & Time:

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
12-15-16	KF	WG196753-1 (625) WG196752-1 (SVOA)	1000	1mL	NR	✓		1mL	12-15-16	B1	JMS	625-R398039 SVOA-R398040
		-2 -2			1mL					2		
		-3 -3								3		
		WG196752-4	200		NR					4		TCLP Blank PBT1355S Diluted to 1000mL
									KF	12-15-16		

EX-007 – Revision 3 – 11/11/2015

QAEX321

0000070

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
12-15-16	KF	TJ0246-1 RE	200	1mL	NR	✓		1mL	12-15-16	B5	SMS	RE TCLP Dilution to 1000mL
		-2B RE	200							6		RE
		TJ0276-1A	200							7		RE 12/15
		TJ0503-8D	1050							8		
		TJ0542-11C	1060							9		
		TJ0540-10	1060							10		625
		TJ0558-1H	1020							C1		625 ems-ss-cert
										KF	12-15-16	

Reviewed By_____ Date_____

EX-007 – Revision 3 – 11/11/2015

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-U

DATE OF DFTPP INJECTION: 10261L

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
WG193442-1	SDWQ DFTPP	U0649A	1	1	DFTPP390	2.0	JLH	OK
-3	SSD 060 U1021	U6044		2	U625A039	1.0		"
-2	005	45		3				"
-4	125	46		4				"
-5	IMB	47		5				OK
3510	WG192802-1	48		6				OK
	-2	49		7				OK
	-3	50		8				OK
	WG193287-1	51		9				OK
	-2	52		10				OK
	-3	53		11				OK
	SJ8634-3	54		12				OK
	-1	55		13				1556 L
	SJ8460-1	56		14				+OK
	MeOH	57-59		15				—

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-U

DATE OF DFTPP INJECTION: 121516

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
WG196404	50 ng DFTPP	110673(A)	1	1	DFTPP390	2.0	JLG	OK (A) = 625 TUNE
-2	SSTD050 U1215	06511		2	U8270C12	1.0		OK
WG196728-2	SSTD060 U1215	12		3	U625A039			OK
3550	WG196646-1	13		4	U8270C12			OK
↓	1 -2	14		5				SS1,2,5↓
3550 JLG	TJ0236-1	15		6				OK
3550	TJ0539-1	16		7				OK
	TJ0459-1	17		8				OK
	-3	18		9				OK
	-4	19		10				OK
	-5	20		11				OK
	-6	21		12				OK
	TJ0503-2	22		13				SS1↑ DL1:2
	-3	23		14				OK
	-6	24		15				OK
	-7	25		16				IS4↓ SS1↑
	-5	26		17				OK
	TJ0539-4	27		18				IS5&6↓
	TJ0522-1	28		19				OK
	TJ0499-2	29		20				—
	MeCl2	30		21				
-3	SSTD050 U1215	31		22				
↓	↓	32		↓				
		33						
3510	WG196582-1	34		23	U625A039			
↓	↓ -2	35		24				
↓	TJ0291-1	36		25	↓			SS1,2,5↓
	GPC BLK 12-14	37		26	U8270C12	↓	↓	

STANDARD	CODE
DFTPP	52868
CAL. STD.	STK5215 52867
IS MIX	STK5190

REVIEWED AND APPROVED BY: _____
DATE: _____

next page ↓

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-U

DATE OF DFTPP INJECTION:

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
	WG196753-1	U6538	1	27	U625A039	1.0	JCG	SS1↓
	↓ -2	39		28				
TJ0558-1	~~-3~~	40		29				SS1,2↓
	TJ0540-1 JCG	41		30				
WG196753-3	~~TJ0558-1~~	42		31				SS1↓ (partly lost)
	TJ0246-1 RE	43		32	U8270C12			SS1,2↓ Screen
	↓ -2 RE	44		33				
	TJ0276-1	45		34				
	TJ0503-8	46		35				
	TJ0542-11	47		36				
	WG196752-4	48		37				

STANDARD	CODE
DFTPP	
CAL. STD.	
IS MIX	

REVIEWED AND APPROVED BY:
DATE:

COC / Workorder #

Devens - Devens Consolidation Landfill (DCL) Leachate

360325-Boston

Chain of Custody Record

Page: 1 of: 1

Company	KOMAN GS, LLC
Address:	160 East Main Street, Suite 2F Westborough, MA
Phone: 508-366-7442	Fax: 508-366-7445
Sampled by [Print Name(s)]/Affiliation	
Sampler(s) Signature(s)	

Laboratory: Test America - Savannah
Address:
Contact: Jerry Lanier
Regulatory Facility No.
Project Name: Devens Fall 2016 LTM
Sampling QAP No.
Approval Date:
TAT
Other:

Item No.	Field ID No.	Sampled Date	Sampled Time	Col. Method (see codes)	Matrix (see codes)	Number of Containers	Preservatives (see codes) H	I	I	N	O	S	I	I	I	Analyses Requested: VOC/624 3-40ml VOA vials (HCl)	SVOC/6325 2-1 liter amber	Pesticides/PCBs SW8081 2-1-liter amber glass	**Total Metals*-** SW6010/6020/7470 1-250 ml poly (HNO3)	Cyanide(total)-SW9012 1-250ml poly (NaOH)	Phenols/SW9066 1-250ml amber glass (H2SO4)	TSS/160.2 1-1 liter poly	TPH/SW8015B 2-1 liter amber	pH/SW9045 1-125ml poly	Remarks	Lab. No.
	DCL Leachate	12/8/16	8a	G	W											X	X	X	X	X	X	X	X	X		
	Trip Blank			O	O											X										



Shipping Details: courier pick up | 0 ← Total Number of Containers

Date Out:	Via:	Item No.	Relinquished by/Affiliation	Date	Time		Accepted by/Affiliation	Date	Time
Returned:	Via:			12/9/16	1405			12-9-16	1405
Additional Comments:				12-9-16	1505		V. JACKSON TA	12-10-16	11:02

* = Total Metals include: Al, Cd, Cr, Cu, Pb, Ni, Ag, Zn (6010); As, (6020) & Hg (7470)

email logins and results to:

lekes@komangs.com

eanderson@komangs.com

Lab Comments

Seal # _____

Preserve Where Applicable ☐

On ICE ☐

Temperature _____ C

☐ NJ Reduced
☐ NJ Full
☐ Full CLP
☐ Disk Deliverable
☐ Other (Specify)

NJ Data Deliverable Info

☐ Commercial "A"
☐ Commercial "B"
☐ State Forms

MATRIX CODES: A = Ai GW = Groundwat SE = Sediment SP = Soil SW = Surface Water W = Water (Blanks) O = Other
PRESERVATIVE CODES H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol O = Other
COLLECTION METHOD C = Composite G=Grab P= Pumping O = Other

2.8/2.4 11.1/3.7 3.9/3.5

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-133049-2

Login Number: 133049
List Number: 1
Creator: Ragnaldsen, Amy E

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Fort Devens / DCL Leachate

TestAmerica Job ID: 680-133049-2

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	02-28-17

APPENDIX B.2

SPRING 2016 LONG-TERM MONITORING EVENT

Total and Dissolved Metals
SW 846/6010C/6020A
USEPA Level II Review

Site: AOC 57	SDG #: J126310-1
Laboratory: Test America-Savannah, GA	Date: 6/27/2016
KGS Environmental, Inc. Reviewer: Laurie Ekes KGS Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
57M-95-03X_SPR16	680-126310-1	06/09/2016	SW6010C/6020A Total and Dissolved As, Fe and Mn	Groundwater
57M-96-11X_SPR16	680-126310-2	06/09/2016	SW6010C/6020A Total and Dissolved As, Fe and Mn	Groundwater
57M-AREA3_SW1_SPR16	680-126310-3	06/09/2016	SW6010C/6020A Total and Dissolved As, Fe and Mn	Surface Water
DUP-1	680-126310-6	06/09/2016	SW6010C/6020A Total and Dissolved As, Fe and Mn	Groundwater
57M-95-03X_H	680-126310-4	06/09/2016	SW6010C/6020A Total As, Fe and Mn	Groundwater
57M-96-11X_H	680-126310-5	06/09/2016	SW6010C/6020A Total As, Fe and Mn	Groundwater

Summary – Four (4) groundwater samples, one (1) surface water sample and one (1) field duplicate sample were collected from AOC 57 and submitted for total and dissolved arsenic, iron and manganese analyses. Iron and manganese were analyzed and reported by method SW6010B and arsenic was reported by method SW6020A. Two samples were collected using Hydrasleeve™ technology ("H" suffix); the results will be compared to assess the possibility of using this technique in lieu of low-flow sampling.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. Sample 57M-95-03X_SPR16 (Lab Sample ID: 680-126310-1) was logged in with a sample date of 6/7/2016; it was sampled on 6/9/2016. The sample date was corrected. No other discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/10/26 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries (%R) for the reported target analytes met the %R control

limits established in the QAPP.

Qualification: None required.

MS/MSD – AOC 57 sample 57M-95-03X (Lab Sample ID: 680-126310-1) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %Rs and calculated RPDs for spiked analytes were within the QAPP and laboratory control limits.

Qualification: None required.

Method Blank – The method blanks associated and analyzed with these samples were non-detect for all target analytes.

Qualification: None required.

Field Duplicate – AOC 57 sample DUP-1 (Lab sample ID: 680-126310-6) was a field duplicate of sample 57M-96-11X (Lab sample ID: 680-126310-2). Calculated RPDs were all less than 5%.

	57M-96-11X_SPR16	DUP-1	
	680-126310-2	680-126310-6	
Analyte	**Result (ug/L)**	**Result (ug/L)**	**RPD (%)**
Dissolved Iron	29,000	28,000	3.5
Dissolved Manganese	2,800	2,800	0
Dissolved Arsenic	130	130	0
Iron	32,000	32,000	0
Manganese	2,800	2,800	0
Arsenic	290	290	0

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The total and dissolved metals results reported in SDG J126310-1 for AOC 57 are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
57M-95-03X_SPR16	680-126310-1	Total and Dissolved As, Fe and Mn	No qualifications needed.			
57M-96-11X_SPR16	680-126310-2	Total and Dissolved As, Fe and Mn	No qualifications needed.			
57M-AREA3_SW1_SPR16	680-126310-3	Total and Dissolved As, Fe and Mn	No qualifications needed.			
DUP-1	680-126310-6	Total and Dissolved As, Fe and Mn	No qualifications needed.			
57M-95-03X_H	680-126310-4	Total As, Fe and Mn	No qualifications needed.			
57M-96-11X_H	680-126310-5	Total As, Fe and Mn	No qualifications needed.			

AOC 57_Spring 2016 LTM Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-4	57M-95-03X_H	06/09/2016	6010C	Iron	5,500	ug/L		50	50	17	1
680-126310-4	57M-95-03X_H	06/09/2016	6010C	Manganese	110.0	ug/L		10	3	1	1
680-126310-4	57M-95-03X_H	06/09/2016	6020A	Arsenic	43.0	ug/L		3	3	1.5	1
680-126310-1	57M-95-03X_SPR16	06/07/2016	6010C	Dissolved Iron	4,500	ug/L	J	50	50	17	1
680-126310-1	57M-95-03X_SPR16	06/07/2016	6010C	Dissolved Manganese	140.0	ug/L		10	3	1	1
680-126310-1	57M-95-03X_SPR16	06/07/2016	6010C	Iron	4,700	ug/L		50	50	17	1
680-126310-1	57M-95-03X_SPR16	06/07/2016	6010C	Manganese	130.0	ug/L		10	3	1	1
680-126310-1	57M-95-03X_SPR16	06/07/2016	6020A	Dissolved Arsenic	25.0	ug/L		3	3	1.5	1
680-126310-1	57M-95-03X_SPR16	06/07/2016	6020A	Arsenic	31.0	ug/L		3	3	1.5	1
680-126310-5	57M-96-11X_H	06/09/2016	6010C	Iron	40,000	ug/L		50	50	17	1
680-126310-5	57M-96-11X_H	06/09/2016	6010C	Manganese	2,900	ug/L		10	3	1	1
680-126310-5	57M-96-11X_H	06/09/2016	6020A	Arsenic	890.0	ug/L		3	3	1.5	1
680-126310-2	57M-96-11X_SPR16	06/09/2016	6010C	Dissolved Iron	29,000	ug/L		50	50	17	1
680-126310-2	57M-96-11X_SPR16	06/09/2016	6010C	Dissolved Manganese	2,800	ug/L		10	3	1	1
680-126310-2	57M-96-11X_SPR16	06/09/2016	6010C	Iron	32,000	ug/L		50	50	17	1
680-126310-2	57M-96-11X_SPR16	06/09/2016	6010C	Manganese	2,800	ug/L		10	3	1	1
680-126310-2	57M-96-11X_SPR16	06/09/2016	6020A	Dissolved Arsenic	130.0	ug/L		3	3	1.5	1
680-126310-2	57M-96-11X_SPR16	06/09/2016	6020A	Arsenic	290.0	ug/L		3	3	1.5	1
680-126310-3	57M-AREA3_SW1_SPR16	06/09/2016	6010C	Dissolved Iron	6,500	ug/L		50	50	17	1
680-126310-3	57M-AREA3_SW1_SPR16	06/09/2016	6010C	Dissolved Manganese	1,300	ug/L		10	3	1	1
680-126310-3	57M-AREA3_SW1_SPR16	06/09/2016	6010C	Iron	19,000	ug/L		50	50	17	1
680-126310-3	57M-AREA3_SW1_SPR16	06/09/2016	6010C	Manganese	1,400	ug/L		10	3	1	1
680-126310-3	57M-AREA3_SW1_SPR16	06/09/2016	6020A	Dissolved Arsenic	8.1	ug/L		3	3	1.5	1
680-126310-3	57M-AREA3_SW1_SPR16	06/09/2016	6020A	Arsenic	23.0	ug/L		3	3	1.5	1
680-126310-6	DUP-1	06/09/2016	6010C	Dissolved Iron	28,000	ug/L		50	50	17	1
680-126310-6	DUP-1	06/09/2016	6010C	Dissolved Manganese	2,800	ug/L		10	3	1	1
680-126310-6	DUP-1	06/09/2016	6010C	Iron	32,000	ug/L		50	50	17	1
680-126310-6	DUP-1	06/09/2016	6010C	Manganese	2,800	ug/L		10	3	1	1
680-126310-6	DUP-1	06/09/2016	6020A	Dissolved Arsenic	130.0	ug/L		3	3	1.5	1
680-126310-6	DUP-1	06/09/2016	6020A	Arsenic	290.0	ug/L		3	3	1.5	1

Notes:

µg/L = microgram per liter

U/UJ = non-detect

J = Estimated result

LOQ = Limit of quantitation

LOD = Limit of Detection

MDL = Method Detection Limit

Extractable Petroleum Hydrocarbons
MADEP Method EPH-04-1.1
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: J126189-1
Laboratory: Test America-Savannah, GA EPH analyses subcontracted to Katahdin, Scarborough, ME	Date: 6/29/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
LFM99-05A-0616	SJ4154-1	06/08/16	MA DEP EPH	Groundwater
LFM-99-02B_SPR16	SJ4226-1	06/09/16	MA DEP EPH	Groundwater
DUP-1	SJ4226-3	06/09/16	MA DEP EPH	Groundwater
LFM-99-06A_SPR16	SJ4226-2	06/09/16	MA DEP EPH	Groundwater

Summary – Samples for EPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine. Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample and submitted for Extractable Petroleum Hydrocarbon (EPH) analyses by MADEP method EPH 04-1.1. Samples were reported in two Katahdin SDGs; J4154 and J4226 and compiled in the Test America SDG.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/9 and 6/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – Surrogate recoveries were within the control limits specified in the QAPP

Qualification: None required

Laboratory Control Sample – The LCS/LCSD pairs prepared and analyzed with these samples met the %R and RPD control limits for all target EPH compounds.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for target EPH on

sample LFM-99-02B_SPR16 (Lab sample ID: SJ4226-1). The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – The method blank prepared and analyzed with sample LFM-99-05A had low level estimated detections of several PAH compounds. The sample was non-detect for PAH. Other method blanks reported in this SDG were non-detect for all target EPH compounds.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: SJ4226-3) was a field duplicate of sample LFM-99-02B (Lab sample ID: SJ4226-1). EPH target compounds were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The EPH results are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
LFM99-05A-0616	SJ4154-1	MA DEP EPH	No qualifications needed.			
LFM-99-02B_SPR16	SJ4226-1	MA DEP EPH	No qualifications needed.			
DUP-1	SJ4226-3	MA DEP EPH	No qualifications needed.			
LFM-99-06A_SPR16	SJ4226-2	MA DEP EPH	No qualifications needed.			

Volatile Petroleum Hydrocarbons
MADEP Method VPH-04-1.1
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: J126189-1
Laboratory: Test America-Savannah, GA VPH analyses subcontracted to Katahdin, Scarborough, ME	Date: 6/29/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
LFM99-05A-0616	SJ4154-1	06/08/16	MA DEP VPH	Groundwater
LFM99-02B-H	SJ4154-2	06/08/16	MA DEP VPH	Groundwater
LFM99-06A-H	SJ4154-3	06/08/16	MA DEP VPH	Groundwater
LFM99-05A-H	SJ4154-4	06/08/16	MA DEP VPH	Groundwater
TRIP BLANK	SJ4154-5	06/08/16	MA DEP VPH	Trip Blank
LFM-99-02B_SPR16	SJ4226-1	06/09/16	MA DEP VPH	Groundwater
DUP-1	SJ4226-3	06/09/16	MA DEP VPH	Groundwater
LFM-99-06A_SPR16	SJ4226-2	06/09/16	MA DEP VPH	Groundwater

Summary – Samples for VPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine. Data validation was performed on the data for a total of six (6) groundwater samples, one (1) field duplicate sample and one (1) trip blank sample submitted for Volatile Petroleum Hydrocarbon (VPH) analyses by MADEP method VPH 04-1.1. Samples were reported in two Katahdin SDGs; J4154 and J4226 and compiled in the Test America SDG. Three samples were collected using Hydrasleeve™ technology ("H" suffix); the results will be compared to assess the possibility of using this technique in lieu of low-flow sampling.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/9 and 6/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – All surrogate recoveries were within the control limits specified in the QAPP.

Qualification: None required

Laboratory Control Sample – LCS/LCSD pairs analyzed with these samples met all %R and RPD control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for all target VPHs on sample LFM-99-02B_SPR16 (Lab sample ID: SJ4226-1). The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – Method blanks analyzed with these samples were non-detect for all target VPH compounds.

Qualification: None required.

Trip Blanks – One trip blank sample Trip Blank (Lab Sample ID: SJ4154-5) was submitted with these samples. Target VPH were non-detect in the TB sample.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: SJ4226-3) was a field duplicate of sample LFM-99-02B (Lab sample ID: SJ4226-1). Low levels of ethylbenzene (0.82 µg/L), m,p-xylene (2.0 µg/L) and o-xylene (0.89 µg/L) were detected in the duplicate samples but were non-detect in the native sample.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VPH results are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
LFM99-05A-0616	SJ4154-1	MA DEP VPH	No qualifications needed.			
LFM99-02B-H	SJ4154-2	MA DEP VPH	No qualifications needed.			
LFM99-06A-H	SJ4154-3	MA DEP VPH	No qualifications needed.			
LFM99-05A-H	SJ4154-4	MA DEP VPH	No qualifications needed.			
TRIP BLANK	SJ4154-5	MA DEP VPH	No qualifications needed.			
LFM-99-02B_SPR16	SJ4226-1	MA DEP VPH	No qualifications needed.			
DUP-1	SJ4226-3	MA DEP VPH	No qualifications needed.			
LFM-99-06A_SPR16	SJ4226-2	MA DEP VPH	No qualifications needed.			

Pesticides
SW846/8081B
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: J126189-1
Laboratory: Test America-Savannah, GA	Date: 6/27/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
LFM 99-05A-0616	680-126189-2	06/08/2016	Pesticides	Groundwater
LFM-99-02B_SPR16	680-126246-1	06/09/2016	Pesticides	Groundwater
LFM-99-06A_SPR16	680-126246-2	06/09/2016	Pesticides	Groundwater
DUP-1	680-126246-3	06/09/2016	Pesticides	Groundwater

Summary - Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample submitted for Pesticide analyses by EPA method SW846/8081B. Samples were reported in SDGs; J126189-1.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/9/2016 and 6/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – Surrogate recoveries were within the control limits specified in the QAPP

Qualification: None required

Laboratory Control Sample – The LCSs analyzed with these samples met the %R control limits for all pesticide compounds.

Qualification: None required.

MS/MSD – Sample LFM-99-02B (Lab Sample ID: 680-126246-1) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – Method blanks analyzed for pesticides with these samples on 6/15 and 6/16/2016 were non-detect for all pesticide compounds.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: 680-126246-3) was a field duplicate of sample LFM-99-02B (Lab sample ID: 680-126246-1). The results for pesticide compounds results were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U."

Qualification: None required.

Qualification Summary Table - The Pesticide results reported in SDG J126189-1 are acceptable as reported. The data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
LFM 99-05A-0616	680-126189-2	Pesticides	No qualifications needed			
LFM-99-02B_SPR16	680-126246-1	Pesticides	No qualifications needed			
LFM-99-06A_SPR16	680-126246-2	Pesticides	No qualifications needed			
DUP-1	680-126246-3	Pesticides	No qualifications needed			

Total Metals
SW 846/6010C/6020A/7470A
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: J126189-1
Laboratory: Test America-Savannah, GA	Date: 6/27/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
LFM 99-05A-0616	680-126189-2	06/08/2016	Total Metals plus Mercury	Groundwater
LFM-99-02B_SPR16	680-126246-1	06/09/2016	Total Metals plus Mercury	Groundwater
LFM-99-06A_SPR16	680-126246-2	06/09/2016	Total Metals plus Mercury	Groundwater
DUP-1	680-126246-3	06/09/2016	Total Metals plus Mercury	Groundwater
LFM 99 02B-H	680-126189-6	06/08/2016	Total Metals plus Mercury	Groundwater
LFM 99 06A-H	680-126189-7	06/08/2016	Total Metals plus Mercury	Groundwater

Summary - Data validation was performed on the data for a total of five (5) groundwater samples and one (1) field duplicate sample collected and submitted for total metals analyses by Methods SW846/6010C for target analyte metals, SW847/6020A for arsenic and 7470A for mercury. Two samples were collected using Hydrasleeve™ technology ("H" suffix); the results will be compared to assess the possibility of using this technique in lieu of low-flow sampling.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/9 and 6/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time (28 days for mercury) required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries for the reported target analytes met all %R control limits established in the QAPP.

Qualification: None required.

MS/MSD – Sample LFM-99-02B (Lab Sample ID: MC41969-1) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %R and RPD results for target analytes were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – The method blanks associated and analyzed with these samples were non-detect for all target analytes.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: 680-126246-3) was a field duplicate of sample LFM-99-02B (Lab sample ID: 680-126246-1). Calculated RPDs were all less than 10%.

	LFM-99-02B_SPR16	DUP-1	
	680-126246-1	680-126246-3	
Analyte	**Result (ug/L)**	**Result (ug/L)**	**RPD (%)**
Barium	7.20	7.10	1.4
Calcium	48,000	50,000	4.1
Magnesium	5,300	5,400	1.9
Potassium	2,300	2,400	4.2
Sodium	130,000	120,000	8.0

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The total metals results reported in SDG J126246-1 are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	**Lab Sample ID**	**Analysis or Compound**	**Lab Value**	**Lab Qualifier**	**Validated Value**	**Validation Qualifier**
LFM 99-05A-0616	680-126189-2	Total Metals plus Mercury	No Qualifications needed.			
LFM-99-02B_SPR16	680-126246-1	Total Metals plus Mercury	No Qualifications needed.			
LFM-99-06A_SPR16	680-126246-2	Total Metals plus Mercury	No Qualifications needed.			
DUP-1	680-126246-3	Total Metals plus Mercury	No Qualifications needed.			
LFM 99 02B-H	680-126189-6	Total Metals plus Mercury	No Qualifications needed.			
LFM 99 06A-H	680-126189-7	Total Metals plus Mercury	No Qualifications needed.			

Wet Chemistry

Total Alkalinity (SM2320B), Chloride and Sulfate (SW9056A) Nitrate/Nitrite (E353.2), Total Cyanide (SW9012B), Total Dissolved Solids (TDS) (SM2540C-11) and Chemical Oxygen Demand (COD) (E410.4)

USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: J126189-1
Laboratory: Test America-Savannah, GA	Date: 6/28/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
LFM 99-05A-0616	680-126189-1/2	06/08/2016	Misc. Parameters	Groundwater
LFM-99-02B_SPR16	680-126246-1	06/09/2016	Misc. Parameters	Groundwater
LFM-99-06A_SPR16	680-126246-2	06/09/2016	Misc. Parameters	Groundwater
DUP-1	680-126246-3	06/09/2016	Misc. Parameters	Groundwater

Summary - Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample submitted for the miscellaneous wet chemistry analyses listed above. The samples submitted for alkalinity, TDS, nitrate/nitrite and COD analyses were shipped to Test America-Denver for analysis. The samples submitted for chloride, sulfate and total cyanide were analyzed as Test America-Savannah.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory on 6/9 and 6/10/2016 in acceptable condition and temperature, and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – All samples were analyzed within the respective holding times required by the QAPP for preserved aqueous samples.

Qualification: None required.

Method Blank – A low level of alkalinity (2.35 and 1.79 mg/L) was reported in the MBs analyzed with these samples. Sample results were greater than 50 times the blank levels; qualifications were not needed. The method blanks for all other parameters were free from contamination.

Qualification: None required.

Laboratory Control Sample – The LCS and/or LCSD %R results for all methods associated with these samples met the control limits established by the QAPP.

Qualification: None required.

MS/Duplicate – Sample LFM-99-02B (Lab Sample ID: J126246-1) was spiked and analyzed as matrix spike/duplicate samples. The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: J126246-3) was a field duplicate of sample LFM-99-02B (Lab sample ID: J126246-1). The results for COD and total cyanide were non-detect. Detected results for TDS, nitrate/nitrite, chloride, sulfate and alkalinity were comparable. FD results are summarized below.

	LFM-99-02B_SPR16	DUP-1	
	680-126246-1	680-126246-3	
Analyte	**Result (mg/L)**	**Result (mg/L)**	**RPD (%)**
Alkalinity	71	71	0
Total Dissolved Solids (TDS)	530	520	1.9
Nitrate Nitrite as N	0.60	0.62	3.3
Chloride	230	240	4.2
Sulfate	17	17	0

Qualification: None required.

Compound Quantitation – The results for chloride were reported from 10X dilutions. Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table: The results reported for the miscellaneous parameters in SDG J126246-1 are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value (mg/L)	Lab Qualifier	Validated Value (mg/L)	Validation Qualifier
LFM 99-05A-0616	680-126189-1/2	Misc. Parameters	No qualifications needed.			
LFM-99-02B_SPR16	680-126246-1	Misc. Parameters	No qualifications needed.			
LFM-99-06A_SPR16	680-126246-2	Misc. Parameters	No qualifications needed.			
DUP-1	680-126246-3	Misc. Parameters	No qualifications needed.			

DCL Spring 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Aluminum	70	ug/L	U	200	70	24	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Antimony	15	ug/L	U	20	15	5.3	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Barium	3.3	ug/L	J	10	5	1.7	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Beryllium	0.30	ug/L	U	4	0.3	0.1	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Cadmium	3.0	ug/L	U	5	3	1	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Calcium	42,000	ug/L		500	75	25	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Chromium	4.0	ug/L	U	10	4	1.6	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Cobalt	3.0	ug/L	U	10	3	1	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Copper	5.0	ug/L	U	20	5	1.8	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Iron	25	ug/L	J	50	50	17	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Lead	10	ug/L	U	10	10	3.9	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Magnesium	6,100	ug/L		500	75	33	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Manganese	3.0	ug/L	U	10	3	1	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Nickel	5.0	ug/L	U	40	5	2.1	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Potassium	1,600	ug/L		1000	50	17	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Selenium	20	ug/L	U	20	20	9.9	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Silver	1.5	ug/L	U	10	1.5	0.6	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Sodium	67,000	ug/L		1000	1000	480	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Thallium	15	ug/L	U	25	15	6	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Vanadium	3.0	ug/L	U	10	3	1	1
680-126189-6	LFM 99 02B-H	06/08/2016	6010C	Zinc	20	ug/L	U	20	20	7	1
680-126189-6	LFM 99 02B-H	06/08/2016	6020A	Arsenic	3.0	ug/L	U	3	3	1.5	1
680-126189-6	LFM 99 02B-H	06/08/2016	7470A	Mercury	0.20	ug/L	U	0.2	0.2	0.08	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Aluminum	2,000	ug/L		200	70	24	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Antimony	15	ug/L	U	20	15	5.3	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Barium	14	ug/L		10	5	1.7	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Beryllium	0.30	ug/L	U	4	0.3	0.1	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Cadmium	3.0	ug/L	U	5	3	1	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Calcium	75,000	ug/L		500	75	25	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Chromium	6.0	ug/L	J	10	4	1.6	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Cobalt	1.9	ug/L	J	10	3	1	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Copper	3.6	ug/L	J	20	5	1.8	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Iron	3,800	ug/L		50	50	17	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Lead	10	ug/L	U	10	10	3.9	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Magnesium	9,400	ug/L		500	75	33	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Manganese	66	ug/L		10	3	1	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Nickel	10	ug/L	J	40	5	2.1	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Potassium	3,000	ug/L		1000	50	17	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Selenium	20	ug/L	U	20	20	9.9	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Silver	1.5	ug/L	U	10	1.5	0.6	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Sodium	190,000	ug/L		10000	10000	4800	10
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Thallium	15	ug/L	U	25	15	6	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Vanadium	2.5	ug/L	J	10	3	1	1
680-126189-7	LFM 99 06A-H	06/08/2016	6010C	Zinc	13	ug/L	J	20	20	7	1
680-126189-7	LFM 99 06A-H	06/08/2016	6020A	Arsenic	5.7	ug/L		3	3	1.5	1
680-126189-7	LFM 99 06A-H	06/08/2016	7470A	Mercury	0.20	ug/L	U	0.2	0.2	0.08	1
680-126189-1	LFM 99-05A-0616	06/08/2016	353.2	Nitrate Nitrite as N	2.9	mg/L		0.1	0.05	0.019	1
680-126189-1	LFM 99-05A-0616	06/08/2016	410.4	Chemical Oxygen Demand	10	mg/L	U	20	10	4.1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Aluminum	150	ug/L	J	200	70	24	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Antimony	15	ug/L	U	20	15	5.3	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Barium	14	ug/L		10	5	1.7	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Beryllium	0.30	ug/L	U	4	0.3	0.1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Cadmium	3.0	ug/L	U	5	3	1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Calcium	66,000	ug/L		500	75	25	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Chromium	4.0	ug/L	U	10	4	1.6	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Cobalt	3.0	ug/L	U	10	3	1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Copper	5.0	ug/L	U	20	5	1.8	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Iron	300	ug/L		50	50	17	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Lead	10	ug/L	U	10	10	3.9	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Magnesium	8,100	ug/L		500	75	33	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Manganese	11	ug/L		10	3	1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Nickel	2.4	ug/L	J	40	5	2.1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Potassium	1,700	ug/L		1000	50	17	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Selenium	20	ug/L	U	20	20	9.9	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Silver	1.5	ug/L	U	10	1.5	0.6	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Sodium	79,000	ug/L		1000	1000	480	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Thallium	15	ug/L	U	25	15	6	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Vanadium	3.0	ug/L	U	10	3	1	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6010C	Zinc	20	ug/L	U	20	20	7	1
680-126189-2	LFM 99-05A-0616	06/08/2016	6020A	Arsenic	1.7	ug/L	J	3	3	1.5	1
680-126189-2	LFM 99-05A-0616	06/08/2016	7470A	Mercury	0.20	ug/L	U	0.2	0.2	0.08	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	4,4'-DDD	0.012	ug/L	U	0.048	0.012	0.006	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	4,4'-DDE	0.012	ug/L	U	0.048	0.012	0.0048	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	4,4'-DDT	0.012	ug/L	U	0.048	0.012	0.0067	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Aldrin	0.012	ug/L	U	0.048	0.012	0.0068	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	alpha-BHC	0.0071	ug/L	U	0.048	0.0071	0.0032	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	beta-BHC	0.012	ug/L	U	0.048	0.012	0.0087	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Chlordane (technical)	0.15	ug/L	U	0.48	0.15	0.09	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	DCB Decachlorobiphenyl	0.16	ug/L					1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	delta-BHC	0.012	ug/L	U	0.048	0.012	0.0071	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Dieldrin	0.0071	ug/L	U	0.048	0.0071	0.0036	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Endosulfan I	0.0071	ug/L	U	0.048	0.0071	0.0033	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Endosulfan II	0.012	ug/L	U	0.048	0.012	0.004	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Endosulfan sulfate	0.012	ug/L	U	0.048	0.012	0.0048	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Endrin	0.012	ug/L	U	0.048	0.012	0.005	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Endrin aldehyde	0.012	ug/L	U	0.048	0.012	0.0058	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Endrin ketone	0.012	ug/L	U	0.048	0.012	0.0044	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	gamma-BHC (Lindane)	0.0071	ug/L	U	0.048	0.0071	0.0034	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Heptachlor	0.012	ug/L	U	0.048	0.012	0.0068	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Heptachlor epoxide	0.0071	ug/L	U	0.048	0.0071	0.0035	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Methoxychlor	0.012	ug/L	U	0.048	0.012	0.0093	1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Tetrachloro-m-xylene	0.25	ug/L					1
680-126189-2	LFM 99-05A-0616	06/08/2016	8081B 8082A	Toxaphene	0.76	ug/L	U	4.8	0.76	0.38	1
680-126189-2	LFM 99-05A-0616	06/08/2016	9012B	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.0025	1
680-126189-2	LFM 99-05A-0616	06/08/2016	9056A	Chloride	160	mg/L		5	4	2	10
680-126189-2	LFM 99-05A-0616	06/08/2016	9056A	Sulfate	22	mg/L		1	0.8	0.4	1
680-126189-1	LFM 99-05A-0616	06/08/2016	SM 2320B	Alkalinity	100	mg/L		5	3.2	1.1	1
680-126189-1	LFM 99-05A-0616	06/08/2016	SM 2540C	Total Dissolved Solids (TDS)	470	mg/L		10	10	4.7	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	353.2	Nitrate Nitrite as N	0.6	mg/L		0.1	0.05	0.019	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	410.4	Chemical Oxygen Demand	10	mg/L	U	20	10	4.1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Aluminum	70	ug/L	U J	200	70	24	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Antimony	15	ug/L	U J	20	15	5.3	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Barium	7.2	ug/L	J	10	5	1.7	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Beryllium	0.3	ug/L	U J	4	0.3	0.1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Cadmium	3.0	ug/L	U J	5	3	1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Calcium	48,000	ug/L	J	500	75	25	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Chromium	4.0	ug/L	U J	10	4	1.6	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Cobalt	3.0	ug/L	U J	10	3	1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Copper	5.0	ug/L	U J	20	5	1.8	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Iron	50	ug/L	U J	50	50	17	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Lead	10	ug/L	U J	10	10	3.9	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Magnesium	5,300	ug/L	J	500	75	33	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Manganese	3.0	ug/L	U J	10	3	1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Nickel	5.0	ug/L	U J	40	5	2.1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Potassium	2,300	ug/L	J	1000	50	17	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Selenium	20	ug/L	U J	20	20	9.9	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Silver	1.5	ug/L	U J	10	1.5	0.6	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Sodium	130,000	ug/L	J	10000	10000	4800	10
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Thallium	15	ug/L	U J	25	15	6	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Vanadium	3.0	ug/L	U J	10	3	1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6010C	Zinc	20	ug/L	U J	20	20	7	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	6020A	Arsenic	3.0	ug/L	U J	3	3	1.5	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	7470A	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	4,4'-DDD	0.013	ug/L	U	0.049	0.013	0.0062	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	4,4'-DDE	0.013	ug/L	U	0.049	0.013	0.005	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	4,4'-DDT	0.013	ug/L	U	0.049	0.013	0.0069	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Aldrin	0.013	ug/L	U	0.049	0.013	0.0071	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	alpha-BHC	0.0074	ug/L	U	0.049	0.0074	0.0034	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	beta-BHC	0.013	ug/L	U	0.049	0.013	0.009	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Chlordane (technical)	0.16	ug/L	U	0.49	0.16	0.094	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	DCB Decachlorobiphenyl	0.28	ug/L					1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	delta-BHC	0.013	ug/L	U	0.049	0.013	0.0074	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Dieldrin	0.0074	ug/L	U	0.049	0.0074	0.0037	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Endosulfan I	0.0074	ug/L	U	0.049	0.0074	0.0035	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Endosulfan II	0.013	ug/L	U	0.049	0.013	0.0041	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Endosulfan sulfate	0.013	ug/L	U	0.049	0.013	0.005	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Endrin	0.013	ug/L	U	0.049	0.013	0.0052	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Endrin aldehyde	0.013	ug/L	U	0.049	0.013	0.006	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Endrin ketone	0.013	ug/L	U	0.049	0.013	0.0045	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	gamma-BHC (Lindane)	0.0074	ug/L	U	0.049	0.0074	0.0036	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Heptachlor	0.013	ug/L	U	0.049	0.013	0.007	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Heptachlor epoxide	0.0074	ug/L	U	0.049	0.0074	0.0036	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Methoxychlor	0.013	ug/L	U	0.049	0.013	0.0097	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Tetrachloro-m-xylene	0.25	ug/L					1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	8081B 8082A	Toxaphene	0.79	ug/L	U	4.9	0.79	0.39	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	9012B	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.0025	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	9056A	Chloride	230	mg/L		5	4	2	10
680-126246-1	LFM-99-02B_SPR16	06/09/2016	9056A	Sulfate	17	mg/L		1	0.8	0.4	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	2-METHYLNAPHTHALENE	2.1	UG/L	U	2.1	2.1	0.83	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	ACENAPHTHENE	2.1	UG/L	U	2.1	2.1	1.9	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	ACENAPHTHYLENE	2.1	UG/L	U	2.1	2.1	0.83	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	ANTHRACENE	2.1	UG/L	U	2.1	2.1	1.4	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	BENZO(A)ANTHRACENE	2.1	UG/L	U	2.1	2.1	1.4	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	BENZO(A)PYRENE	2.1	UG/L	U	2.1	2.1	1.4	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	2.1	UG/L	U	2.1	2.1	0.83	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	2.1	UG/L	U	2.1	2.1	1.0	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	2.1	UG/L	U	2.1	2.1	1.4	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	C11-C22 AROMATICS	100	UG/L	U	100	100	52.	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	C19-C36 ALIPHATICS	100	UG/L	U	100	100	52.	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	C9-C18 ALIPHATICS	100	UG/L	U	100	100	52.	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	CHRYSENE	2.1	UG/L	U	2.1	2.1	0.94	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	2.1	UG/L	U	2.1	2.1	1.2	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	FLUORANTHENE	2.1	UG/L	U	2.1	2.1	0.83	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	FLUORENE	2.1	UG/L	U	2.1	2.1	0.94	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	2.1	UG/L	U	2.1	2.1	1.4	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	NAPHTHALENE	2.1	UG/L	U	2.1	2.1	0.94	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	PHENANTHRENE	2.1	UG/L	U	2.1	2.1	0.94	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP EPH	PYRENE	2.1	UG/L	U	2.1	2.1	1.1	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.44	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.	10.	0.86	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.48	
SJ4226-1	LFM-99-02B_SPR16	06/09/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
680-126246-1	LFM-99-02B_SPR16	06/09/2016	SM 2320B	Alkalinity	71	mg/L		5	3.2	1.1	1
680-126246-1	LFM-99-02B_SPR16	06/09/2016	SM 2540C	Total Dissolved Solids (TDS)	530	mg/L		10	10	4.7	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	353.2	Nitrate Nitrite as N	0.62	mg/L		0.1	0.05	0.019	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	410.4	Chemical Oxygen Demand	10	mg/L	U	20	10	4.1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Aluminum	70	ug/L	U	200	70	24	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Antimony	15	ug/L	U	20	15	5.3	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Barium	7.1	ug/L	J	10	5	1.7	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Beryllium	0.3	ug/L	U	4	0.3	0.1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Cadmium	3.0	ug/L	U	5	3	1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Calcium	50,000	ug/L		500	75	25	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Chromium	4.0	ug/L	U	10	4	1.6	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Cobalt	3.0	ug/L	U	10	3	1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Copper	5.0	ug/L	U	20	5	1.8	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Iron	50	ug/L	U	50	50	17	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Lead	10	ug/L	U	10	10	3.9	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Magnesium	5,400	ug/L		500	75	33	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Manganese	3.0	ug/L	U	10	3	1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Nickel	5.0	ug/L	U	40	5	2.1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Potassium	2,400	ug/L		1000	50	17	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Selenium	20	ug/L	U	20	20	9.9	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Silver	1.5	ug/L	U	10	1.5	0.6	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Sodium	120,000	ug/L		10000	10000	4800	10
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Thallium	15	ug/L	U	25	15	6	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Vanadium	3.0	ug/L	U	10	3	1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6010C	Zinc	20	ug/L	U	20	20	7	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	6020A	Arsenic	3.0	ug/L	U	3	3	1.5	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	7470A	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	4,4'-DDD	0.013	ug/L	U	0.051	0.013	0.0064	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	4,4'-DDE	0.013	ug/L	U	0.051	0.013	0.0052	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	4,4'-DDT	0.013	ug/L	U	0.051	0.013	0.0072	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Aldrin	0.013	ug/L	U	0.051	0.013	0.0074	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	alpha-BHC	0.0077	ug/L	U	0.051	0.0077	0.0035	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	beta-BHC	0.013	ug/L	U	0.051	0.013	0.0093	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Chlordane (technical)	0.16	ug/L	U	0.51	0.16	0.097	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	DCB Decachlorobiphenyl	0.3	ug/L					1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	delta-BHC	0.013	ug/L	U	0.051	0.013	0.0077	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Dieldrin	0.0077	ug/L	U	0.051	0.0077	0.0039	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Endosulfan I	0.0077	ug/L	U	0.051	0.0077	0.0036	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Endosulfan II	0.013	ug/L	U	0.051	0.013	0.0043	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Endosulfan sulfate	0.013	ug/L	U	0.051	0.013	0.0052	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Endrin	0.013	ug/L	U	0.051	0.013	0.0054	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Endrin aldehyde	0.013	ug/L	U	0.051	0.013	0.0062	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Endrin ketone	0.013	ug/L	U	0.051	0.013	0.0047	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	gamma-BHC (Lindane)	0.0077	ug/L	U	0.051	0.0077	0.0037	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Heptachlor	0.013	ug/L	U	0.051	0.013	0.0073	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Heptachlor epoxide	0.0077	ug/L	U	0.051	0.0077	0.0038	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Methoxychlor	0.013	ug/L	U	0.051	0.013	0.01	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Tetrachloro-m-xylene	0.27	ug/L					1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	8081B 8082A	Toxaphene	0.82	ug/L	U	5.1	0.82	0.41	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	9012B	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.0025	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	9056A	Chloride	240	mg/L		5	4	2	10
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	9056A	Sulfate	17	mg/L		1	0.8	0.4	1
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	ACENAPHTHENE	1.9	UG/L	U	1.9	1.9	1.7	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	UG/L	U	1.9	1.9	1.2	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.94	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	UG/L	U	1.9	1.9	1.2	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	C11-C22 AROMATICS	94	UG/L	U	94.	94.	47.	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	C19-C36 ALIPHATICS	94	UG/L	U	94.	94.	47.	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	C9-C18 ALIPHATICS	94	UG/L	U	94.	94.	47.	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	CHRYSENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.1	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	FLUORENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	NAPHTHALENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	PHENANTHRENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP EPH	PYRENE	1.9	UG/L	U	1.9	1.9	1.0	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	ETHYLBENZENE	0.82	UG/L	J	5.0	5.0	0.44	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	M-,P-XYLENE	1.8	UG/L	J	10.	10.	0.86	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	O-XYLENE	1.1	UG/L	J	5.0	5.0	0.48	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4226-3	DUP-1 (LFM-99-02B)	06/09/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	SM 2320B	Alkalinity	71	mg/L		5	3.2	1.1	1
680-126246-3	DUP-1 (LFM-99-02B)	06/09/2016	SM 2540C	Total Dissolved Solids (TDS)	520	mg/L		10	10	4.7	1
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.44	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.	10.	0.86	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.48	
SJ4154-2	LFM99-02B-H	06/08/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	ACENAPHTHENE	1.9	UG/L	U	1.9	1.9	1.7	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	UG/L	U	1.9	1.9	1.2	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.94	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	UG/L	U	1.9	1.9	1.2	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	C11-C22 AROMATICS	94	UG/L	U	94.	94.	47.	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	C19-C36 ALIPHATICS	94	UG/L	U	94.	94.	47.	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	C9-C18 ALIPHATICS	94	UG/L	U	94.	94.	47.	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	CHRYSENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.1	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	FLUORENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	NAPHTHALENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	PHENANTHRENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4154-1RE	LFM99-05A-0616	06/08/2016	MA DEP EPH	PYRENE	1.9	UG/L	U	1.9	1.9	1.0	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	

DCL Spring 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.44	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.	10.	0.86	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.48	
SJ4154-1	LFM99-05A-0616	06/08/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.44	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.	10.	0.86	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.48	
SJ4154-4	LFM99-05A-H	06/08/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
680-126246-2	LFM-99-06A_SPR16	06/09/2016	353.2	Nitrate Nitrite as N	0.98	mg/L		0.1	0.05	0.019	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	410.4	Chemical Oxygen Demand	10	mg/L	U	20	10	4.1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Aluminum	650	ug/L		200	70	24	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Antimony	15	ug/L	U	20	15	5.3	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Barium	9.1	ug/L	J	10	5	1.7	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Beryllium	0.3	ug/L	U	4	0.3	0.1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Cadmium	3.0	ug/L	U	5	3	1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Calcium	76,000	ug/L		500	75	25	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Chromium	2.2	ug/L	J	10	4	1.6	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Cobalt	3.0	ug/L	U	10	3	1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Copper	5.0	ug/L	U	20	5	1.8	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Iron	1,200	ug/L		50	50	17	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Lead	10	ug/L	U	10	10	3.9	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Magnesium	8,900	ug/L		500	75	33	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Manganese	26	ug/L		10	3	1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Nickel	4.9	ug/L	J	40	5	2.1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Potassium	2,600	ug/L		1000	50	17	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Selenium	20	ug/L	U	20	20	9.9	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Silver	1.5	ug/L	U	10	1.5	0.6	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Sodium	200,000	ug/L		10000	10000	4800	10
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Thallium	15	ug/L	U	25	15	6	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Vanadium	3.0	ug/L	U	10	3	1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6010C	Zinc	7.0	ug/L	J	20	20	7	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	6020A	Arsenic	2.3	ug/L	J	3	3	1.5	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	7470A	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	4,4'-DDD	0.012	ug/L	U	0.048	0.012	0.006	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	4,4'-DDE	0.012	ug/L	U	0.048	0.012	0.0049	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	4,4'-DDT	0.012	ug/L	U	0.048	0.012	0.0067	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Aldrin	0.012	ug/L	U	0.048	0.012	0.0069	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	alpha-BHC	0.0072	ug/L	U	0.048	0.0072	0.0033	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	beta-BHC	0.012	ug/L	U	0.048	0.012	0.0087	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Chlordane (technical)	0.15	ug/L	U	0.48	0.15	0.091	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	DCB Decachlorobiphenyl	0.25	ug/L					1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	delta-BHC	0.012	ug/L	U	0.048	0.012	0.0072	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Dieldrin	0.0072	ug/L	U	0.048	0.0072	0.0036	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Endosulfan I	0.0072	ug/L	U	0.048	0.0072	0.0033	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Endosulfan II	0.012	ug/L	U	0.048	0.012	0.004	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Endosulfan sulfate	0.012	ug/L	U	0.048	0.012	0.0049	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Endrin	0.012	ug/L	U	0.048	0.012	0.0051	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Endrin aldehyde	0.012	ug/L	U	0.048	0.012	0.0058	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Endrin ketone	0.012	ug/L	U	0.048	0.012	0.0044	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	gamma-BHC (Lindane)	0.0072	ug/L	U	0.048	0.0072	0.0034	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Heptachlor	0.012	ug/L	U	0.048	0.012	0.0068	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Heptachlor epoxide	0.0072	ug/L	U	0.048	0.0072	0.0035	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Methoxychlor	0.012	ug/L	U	0.048	0.012	0.0094	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Tetrachloro-m-xylene	0.24	ug/L					1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	8081B 8082A	Toxaphene	0.77	ug/L	U	4.8	0.77	0.38	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	9012B	Cyanide, Total	0.0026	mg/L	J	0.01	0.005	0.0025	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	9056A	Chloride	370	mg/L		5	4	2	10
680-126246-2	LFM-99-06A_SPR16	06/09/2016	9056A	Sulfate	29	mg/L		1	0.8	0.4	1
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	ACENAPHTHENE	1.9	UG/L	U	1.9	1.9	1.7	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	UG/L	U	1.9	1.9	1.2	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.94	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	UG/L	U	1.9	1.9	1.2	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	C11-C22 AROMATICS	94	UG/L	U	94.	94.	47.	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	C19-C36 ALIPHATICS	94	UG/L	U	94.	94.	47.	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	C9-C18 ALIPHATICS	94	UG/L	U	94.	94.	47.	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	CHRYSENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	UG/L	U	1.9	1.9	1.1	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	FLUORANTHENE	1.9	UG/L	U	1.9	1.9	0.75	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	FLUORENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	UG/L	U	1.9	1.9	1.3	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	NAPHTHALENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	PHENANTHRENE	1.9	UG/L	U	1.9	1.9	0.85	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP EPH	PYRENE	1.9	UG/L	U	1.9	1.9	1.0	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.44	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.	10.	0.86	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.48	
SJ4226-2	LFM-99-06A_SPR16	06/09/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
680-126246-2	LFM-99-06A_SPR16	06/09/2016	SM 2320B	Alkalinity	88	mg/L		5	3.2	1.1	1
680-126246-2	LFM-99-06A_SPR16	06/09/2016	SM 2540C	Total Dissolved Solids (TDS)	810	mg/L		10	10	4.7	1
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	ETHYLBENZENE	0.82	UG/L	J	5.0	5.0	0.44	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	M-,P-XYLENE	2.0	UG/L	J	10.	10.	0.86	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	O-XYLENE	0.89	UG/L	J	5.0	5.0	0.48	
SJ4154-3	LFM99-06A-H	06/08/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0	3.0	0.61	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100	100	50.	

DCL Spring 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100	100	50.	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.44	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.	10.	0.86	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.63	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.5	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.48	
SJ4154-5	TRIP BLANK	06/08/2016	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0	5.0	0.54	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U/UJ = non-detect

J = Estimated result

LOQ = Limit of quantitation

LOD = Limit of Detection

MDL = Method Detection Limit

Volatile Organic Compounds
SW-846 Method 8260B
USEPA Level II Review

Site: AOC 32	SDG #: J126310-1
Laboratory: Test America-Savannah, GA	Date: 6/28/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
32M-01-13XBR_SPR16	680-126310-7	06/10/2016	VOCs	Groundwater
32M-01-14XOB_SPR16	680-126310-8	06/10/2016	VOCs	Groundwater
32M-01-17XBR_SPR16	680-126310-9	06/10/2016	VOCs	Groundwater
32M-01-18XBR_SPR16	680-126310-10	06/10/2016	VOCs	Groundwater
32M-DUP-1	680-126310-11	06/10/2016	VOCs	Groundwater
32M-01-17XBR_H	680-126310-13	06/10/2016	VOCs	Groundwater
Trip Blank	680-126310-12	06/10/2016	VOCs	Trip Blank

Summary - Data validation was performed on the data for five (5) groundwater samples, one (1) field duplicate sample and one (1) trip blank sample collected from AOC32 and submitted for Volatile Organic (VOC) analyses by SW-846 Method 8260B DOD. One sample was collected using Hydrasleeve™ technology ("H" suffix); the results will be compared to assess the possibility of using this technique in lieu of low-flow sampling.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Qualification: None required.

Initial Calibration - Initial calibration curve analyzed on 5/4/2016 (Analytical batch 431923) exhibited acceptable %RSDS (≤30%) for and average RRF (>0.050) values for all target compounds.

Qualification: None required.

Initial Calibration Verification (ICV): - Initial calibration verification analyzed on 5/4/2016 (ICV 680-431923/12) exhibited acceptable %Ds (≤25.0%).

Qualification: None required.

Continuing Calibration Verification (CCV): - The CCV analyzed on 6/17/2016 (CCV 680-437749/3) exhibited %D greater than 20.0% for hexachlorobutadiene (25.3%). The %Ds for all other target compounds were less than 20% with acceptable RRF values.

Qualification: The non-detect results for hexachlorobutadiene were qualified as estimated (UJ) in all samples.

Surrogates – Surrogate recoveries were within the control limits for all samples.

Qualification: None required.

Internal Standard (IS) Area Performance: - All samples exhibited acceptable area counts for all internal standards.

Qualification: None required.

LCS/LCSD – Percent recoveries and RPDs for the LCS/LCDS (MSU1363-BS) analyzed on 10/28/2015 with these samples were within control limits established in the QAPP.

Qualification: None required.

MS/MSD – Sample 32M-01-17XBR (Lab Sample ID: 280-126310-9) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %Rs and calculated RPDs were within control limits for all target VOCs.

Qualification: None required.

Method Blank – The method blank analyzed on 6/17/2016 with these samples was free of contamination.

Qualification: None required.

Field Blanks – Sample Trip Blank (Lab Sample ID: 280-126310-12) was the trip blank submitted with these samples. Target VOCs were all non-detect.

Qualification: None required.

Field Duplicate – Samples 32M-DUP-1 (Lab Sample ID: 280-126310-11) was the field duplicate sample of 32M-01-17XBR (Lab Sample ID: 280-126310-9). The VOC results were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Sample 32M-01-18XBR (Lab Sample ID: 280-126310-10) was analyzed at a 5X dilution due to high level of target compounds. Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VOC results reported in this SDG are acceptablewith the noted qualifications and may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
32M-01-13XBR_SPR16	680-126310-7	hexachlorobutadiene	5	U	5	UJ
32M-01-14XOB_SPR16	680-126310-8	hexachlorobutadiene	5	U	5	UJ
32M-01-17XBR_SPR16	680-126310-9	hexachlorobutadiene	5	U	5	UJ
32M-01-18XBR_SPR16	680-126310-10	hexachlorobutadiene	25	U	25	UJ
32M-DUP-1	680-126310-11	hexachlorobutadiene	5	U	5	UJ
32M-01-17XBR_H	680-126310-13	hexachlorobutadiene	5	U	5	UJ
Trip Blank	680-126310-12	hexachlorobutadiene	5	U	5	UJ

Volatile Petroleum Hydrocarbons
MADEP Method VPH-04-1.1
USEPA Level II Review

Site: AOC 32/43A	SDG #: J126310-1
Laboratory: Test America-Savannah, GA VPH analysis subcontracted to Katahdin, Scarborough, ME	Date: 6/29/2016
H&S Environmental, Inc. Reviewer: Laurie Ekes H&S Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
32M-01-13XBR_SPR16	SJ4284-1	06/10/16	MA DEP VPH	Groundwater
32M-01-14XOB_SPR16	SJ4284-2	06/10/16	MA DEP VPH	Groundwater
32M-01-17XBR_SPR16	SJ4284-3	06/10/16	MA DEP VPH	Groundwater
32M-01-18XBR_SPR16	SJ4284-4	06/10/16	MA DEP VPH	Groundwater
32M-DUP-1	SJ4284-5	06/10/16	MA DEP VPH	Groundwater

Summary – Samples for VPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine. Data validation was performed on the data for four (4) groundwater samples and one (1) field duplicate sample submitted for Volatile Petroleum Hydrocarbon (VPH) analyses by MADEP method VPH 04-1.1. Samples were reported in Katahdin SDG; J4284 and compiled in the Test America SDG.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/11/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – All surrogate recoveries were within the control limits specified in the QAPP.

Qualification: None required

Laboratory Control Sample – LCS/LCSD pairs analyzed with these samples met all %R and RPD control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for all target VPHs on sample 32M-01-17XBR_SPR16 (Lab sample ID: SJ4284-3). The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – Method blanks analyzed with these samples were non-detect for all target VPH compounds.

Qualification: None required.

Trip Blanks – A trip blank sample was not submitted with these samples.

Qualification: None required.

Field Duplicate – Sample 32M-DUP-1 (Lab sample ID: SJ4284-5) was a field duplicate of sample 32M-01-17XBR_SPR16 (Lab sample ID: SJ4284-3). VPH results were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VPH results are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
32M-01-13XBR_SPR16	SJ4284-1	MA DEP VPH	No qualification needed.			
32M-01-14XOB_SPR16	SJ4284-2	MA DEP VPH	No qualification needed.			
32M-01-17XBR_SPR16	SJ4284-3	MA DEP VPH	No qualification needed.			
32M-01-18XBR_SPR16	SJ4284-4	MA DEP VPH	No qualification needed.			
32M-DUP-1	SJ4284-5	MA DEP VPH	No qualification needed.			

Dissolved Metals
SW 846/6010C/6020A
USEPA Level II Review

Site: AOC 32	SDG #: J126310-1
Laboratory: Test America-Savannah, GA	Date: 6/27/2016
KGS Environmental, Inc. Reviewer: Laurie Ekes KGS Peer Reviewer:	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
32M-01-13XBR_SPR16	680-126310-7	06/10/2016	SW6010C/6020A Dissolved As and Mn	Groundwater
32M-01-14XOB_SPR16	680-126310-8	06/10/2016	SW6010C/6020A Dissolved As and Mn	Groundwater
32M-01-17XBR_SPR16	680-126310-9	06/10/2016	SW6010C/6020A Dissolved As and Mn	Groundwater
32M-01-18XBR_SPR16	680-126310-10	06/10/2016	SW6010C/6020A Dissolved As and Mn	Groundwater
32M-DUP-1	680-126310-11	06/10/2016	SW6010C/6020A Dissolved As and Mn	Groundwater
32M-01-17XBR_H	680-126310-13	06/10/2016	SW6010C/6020A Dissolved As and Mn	Groundwater (lab filtered)

Summary – Five (5) groundwater samples and one (1) field duplicate sample were collected from AOC 32 and submitted for dissolved arsenic and manganese analyses. Manganese was analyzed and reported by method SW6010B and arsenic was reported by method SW6020A. One sample was collected using Hydrasleeve™ technology ("H" suffix); the results will be compared to assess the possibility of using this technique in lieu of low-flow sampling.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 6/11/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries (%R) for the reported target analytes met the %R control limits established in the QAPP.

Qualification: None required.

MS/MSD –AOC 32 sample 32M-01-17XBR (Lab Sample ID: 680-126310-9) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %Rs and calculated RPDs for spiked analytes were within the QAPP and laboratory control limits.

Qualification: None required.

Method Blank – The method blanks associated and analyzed with these samples were non-detect for all target analytes.

Qualification: None required.

Field Duplicate – AOC 32 sample 32M-DUP-1 (Lab Sample ID: 680-126310-11) was a field duplicate of sample 32M-01-17XBR (Lab Sample ID: 680-126310-9); the results for dissolved arsenic and manganese were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The dissolved metals results reported in SDG J126310-1 for AOC 32 are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
32M-01-13XBR_SPR16	680-126310-7	SW6010C/6020A Dissolved As and Mn	No qualifications needed.			
32M-01-14XOB_SPR16	680-126310-8	SW6010C/6020A Dissolved As and Mn	No qualifications needed.			
32M-01-17XBR_SPR16	680-126310-9	SW6010C/6020A Dissolved As and Mn	No qualifications needed.			
32M-01-18XBR_SPR16	680-126310-10	SW6010C/6020A Dissolved As and Mn	No qualifications needed.			
32M-DUP-1	680-126310-11	SW6010C/6020A Dissolved As and Mn	No qualifications needed.			
32M-01-17XBR_H	680-126310-13	SW6010C/6020A Dissolved As and Mn	No qualifications needed.			

AOC 32/43A and AOC57_Spring 2016 LTM Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	6010C	Dissolved Manganese	3.0	ug/L	U	10	3	1	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	6020A	Dissolved Arsenic	3.0	ug/L	U	3	3	1.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1,2-Trichloroethane	1.0	ug/L	U	1	1	0.33	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,3,5-Trimethylbenzene	1.0	ug/L	U	1	1	0.31	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	2-Butanone (MEK)	10.0	ug/L	U	10	10	3.4	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	2-Hexanone	5.0	ug/L	U	10	5	2	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Acetone	10.0	ug/L	U	10	10	7	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Benzene	1.0	ug/L	U	1	1	0.43	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Bromoform	1.0	ug/L	U	1	1	0.43	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Carbon tetrachloride	1.0	ug/L	U	1	1	0.33	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45	1

AOC 32/43A and AOC57_Spring 2016 LTM Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Chlorodibromomethane	1.0	ug/L	U	1	1	0.32	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Chloroform	1.0	ug/L	U	1	1	0.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Ethylbenzene	1.0	ug/L	U	1	1	0.33	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Isopropylbenzene	0.50	ug/L	U	1	0.5	0.35	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Toluene	1.0	ug/L	U	1	1	0.48	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Vinyl acetate	1.0	ug/L	U	2	1	0.81	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5	1
680-126310-7	32M-01-13XBR_SPR16	06/10/2016	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23	1
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0		0.61	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100		50.	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0		0.44	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.		0.86	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0		0.63	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0		1.5	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0		0.48	
SJ4284-1	32M-01-13XBR_SPR16	06/10/16	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0		0.54	
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	6010C	Dissolved Manganese	1,800	ug/L		10	3	1	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	6020A	Dissolved Arsenic	13.0	ug/L		3	3	1.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1,2-Trichloroethane	1.0	ug/L	U	1	1	0.33	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2-Dichlorobenzene	0.75	ug/L	J	1	1	0.37	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,3,5-Trimethylbenzene	1.0	ug/L	U	1	1	0.31	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	2-Butanone (MEK)	10.0	ug/L	U	10	10	3.4	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	2-Hexanone	5.0	ug/L	U	10	5	2	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Acetone	10.0	ug/L	U	10	10	7	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Benzene	1.0	ug/L	U	1	1	0.43	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Bromoform	1.0	ug/L	U	1	1	0.43	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Carbon tetrachloride	1.0	ug/L	U	1	1	0.33	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Chlorodibromomethane	1.0	ug/L	U	1	1	0.32	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Chloroform	1.0	ug/L	U	1	1	0.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Ethylbenzene	1.0	ug/L	U	1	1	0.33	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Isopropylbenzene	0.50	ug/L	U	1	0.5	0.35	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Toluene	1.0	ug/L	U	1	1	0.48	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Vinyl acetate	1.0	ug/L	U	2	1	0.81	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5	1
680-126310-8	32M-01-14XOB_SPR16	06/10/2016	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23	1
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0		0.61	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100		50.	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100		50.	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0		0.44	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.		0.86	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0		0.63	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0		1.5	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0		0.48	
SJ4284-2	32M-01-14XOB_SPR16	06/10/16	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0		0.54	
680-126310-13	32M-01-17XBR_H	06/10/2016	6010C	Dissolved Manganese	46.0	ug/L		10	3	1	1
680-126310-13	32M-01-17XBR_H	06/10/2016	6020A	Dissolved Arsenic	3.0	ug/L	U	3	3	1.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1,2-Trichloroethane	1.0	ug/L	U	1	1	0.33	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2-Dichlorobenzene	1.1	ug/L		1	1	0.37	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,3,5-Trimethylbenzene	1.0	ug/L	U	1	1	0.31	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,3-Dichlorobenzene	0.48	ug/L	J	1	1	0.43	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	2-Butanone (MEK)	10.0	ug/L	U	10	10	3.4	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	2-Hexanone	5.0	ug/L	U	10	5	2	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Acetone	10.0	ug/L	U	10	10	7	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Benzene	1.0	ug/L	U	1	1	0.43	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Bromoform	1.0	ug/L	U	1	1	0.43	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Carbon tetrachloride	1.0	ug/L	U	1	1	0.33	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Chlorodibromomethane	1.0	ug/L	U	1	1	0.32	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Chloroform	1.0	ug/L	U	1	1	0.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Ethylbenzene	1.0	ug/L	U	1	1	0.33	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Isopropylbenzene	0.50	ug/L	U	1	0.5	0.35	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Toluene	1.0	ug/L	U	1	1	0.48	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Vinyl acetate	1.0	ug/L	U	2	1	0.81	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5	1
680-126310-13	32M-01-17XBR_H	06/10/2016	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	6010C	Dissolved Manganese	3.0	ug/L	U	10	3	1	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	6020A	Dissolved Arsenic	3.0	ug/L	U	3	3	1.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1,2-Trichloroethane	1.0	ug/L	U	1	1	0.33	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,3,5-Trimethylbenzene	1.0	ug/L	U	1	1	0.31	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	2-Butanone (MEK)	10.0	ug/L	U	10	10	3.4	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	2-Hexanone	5.0	ug/L	U	10	5	2	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Acetone	10.0	ug/L	U	10	10	7	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Benzene	1.0	ug/L	U	1	1	0.43	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Bromoform	1.0	ug/L	U	1	1	0.43	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Carbon tetrachloride	1.0	ug/L	U	1	1	0.33	1

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Chlorodibromomethane	1.0	ug/L	U	1	1	0.32	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Chloroform	1.0	ug/L	U	1	1	0.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Ethylbenzene	1.0	ug/L	U	1	1	0.33	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Isopropylbenzene	0.50	ug/L	U	1	0.5	0.35	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Toluene	1.0	ug/L	U	1	1	0.48	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Vinyl acetate	1.0	ug/L	U	2	1	0.81	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5	1
680-126310-9	32M-01-17XBR_SPR16	06/10/2016	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23	1
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0		0.61	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100		50.	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100		50.	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0		0.44	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.		0.86	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0		0.63	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0		1.5	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0		0.48	
SJ4284-3	32M-01-17XBR_SPR16	06/10/16	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0		0.54	
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	6010C	Dissolved Manganese	1,100	ug/L		10	3	1	1
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	6020A	Dissolved Arsenic	2.8	ug/L	J	3	3	1.5	1
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	5.0	ug/L	U	5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1,1-Trichloroethane	5.0	ug/L	U	5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	5.0	ug/L	U	5	5	3.1	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1,2-Trichloroethane	5.0	ug/L	U	5	5	1.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1-Dichloroethane	5.0	ug/L	U	5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1-Dichloroethene	5.0	ug/L	U	5	5	1.8	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,1-Dichloropropene	5.0	ug/L	U	5	5	1.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2,3-Trichlorobenzene	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2,3-Trichloropropane	5.0	ug/L	U	5	5	2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2,4-Trichlorobenzene	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2,4-Trimethylbenzene	5.0	ug/L	U	5	5	2.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	10.0	ug/L	U	25	10	5.5	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2-Dichlorobenzene	340.0	ug/L		5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2-Dichloroethane	5.0	ug/L	U	5	5	2.5	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2-Dichloroethene, Total	5.0	ug/L	U	10	5	3.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,2-Dichloropropane	5.0	ug/L	U	5	5	3.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,3,5-Trimethylbenzene	5.0	ug/L	U	5	5	1.6	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,3-Dichlorobenzene	58.0	ug/L		5	5	2.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,3-Dichloropropane	5.0	ug/L	U	5	5	1.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	1,4-Dichlorobenzene	38.0	ug/L		5	5	2.3	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	2,2-Dichloropropane	5.0	ug/L	U	5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	2-Butanone (MEK)	50.0	ug/L	U	50	50	17	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	2-Chlorotoluene	2.5	ug/L	U	5	2.5	1.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	2-Hexanone	25.0	ug/L	U	50	25	10	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	4-Chlorotoluene	5.0	ug/L	U	5	5	2.3	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	4-Isopropyltoluene	5.0	ug/L	U	5	5	2.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	25.0	ug/L	U	50	25	11	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Acetone	50.0	ug/L	U	50	50	35	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Benzene	5.0	ug/L	U	5	5	2.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Bromobenzene	5.0	ug/L	U	5	5	2.5	5

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Bromoform	5.0	ug/L	U	5	5	2.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Bromomethane	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Carbon disulfide	10.0	ug/L	U	10	10	2.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Carbon tetrachloride	5.0	ug/L	U	5	5	1.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Chlorobenzene	81.0	ug/L		5	2.5	1.3	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Chlorobromomethane	5.0	ug/L	U	5	5	2.3	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Chlorodibromomethane	5.0	ug/L	U	5	5	1.6	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Chloroethane	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Chloroform	5.0	ug/L	U	5	5	2.5	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Chloromethane	5.0	ug/L	U	5	5	2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	cis-1,2-Dichloroethene	5.0	ug/L	U	5	5	2.1	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	cis-1,3-Dichloropropene	5.0	ug/L	U	5	5	2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Dibromomethane	5.0	ug/L	U	5	5	1.8	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Dichlorobromomethane	5.0	ug/L	U	5	5	2.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Dichlorodifluoromethane	5.0	ug/L	U	5	5	3	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Ethylbenzene	5.0	ug/L	U	5	5	1.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Ethylene Dibromide	5.0	ug/L	U	5	5	2.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Hexachlorobutadiene	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Isopropylbenzene	2.5	ug/L	U	5	2.5	1.8	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Methyl tert-butyl ether	2.5	ug/L	U	50	2.5	1.5	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Methylene Chloride	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	m-Xylene & p-Xylene	5.0	ug/L	U	5	5	1.8	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Naphthalene	25.0	ug/L	U	25	25	13	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	n-Butylbenzene	5.0	ug/L	U	5	5	2.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	N-Propylbenzene	5.0	ug/L	U	5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	o-Xylene	2.5	ug/L	U	5	2.5	1.2	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	sec-Butylbenzene	5.0	ug/L	U	5	5	2.1	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Styrene	2.5	ug/L	U	5	2.5	1.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	tert-Butylbenzene	5.0	ug/L	U	5	5	2.3	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Tetrachloroethene	5.0	ug/L	U	5	5	3.7	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Toluene	5.0	ug/L	U	5	5	2.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	trans-1,2-Dichloroethene	5.0	ug/L	U	5	5	1.9	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	trans-1,3-Dichloropropene	5.0	ug/L	U	5	5	2.1	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Trichloroethene	5.0	ug/L	U	5	5	2.4	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Trichlorofluoromethane	5.0	ug/L	U	5	5	2.1	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Vinyl acetate	5.0	ug/L	U	10	5	4.1	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Vinyl chloride	5.0	ug/L	U	5	5	2.5	5
680-126310-10	32M-01-18XBR_SPR16	06/10/2016	8260B	Xylenes, Total	2.5	ug/L	U	10	2.5	1.2	5

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SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0		0.61	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	BENZENE	6.0	UG/L	U	6.0		1.2	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	C5-C8 ALIPHATICS	200	UG/L	U	200		100	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	C9-C10 AROMATICS	460	UG/L		100		50.	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	C9-C10 AROMATICS	450	UG/L		200		100	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	C9-C12 ALIPHATICS	190	UG/L	J	200		100	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	C9-C12 ALIPHATICS	240	UG/L		100		50.	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	ETHYLBENZENE	10	UG/L	U	10.		0.88	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0		0.44	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	M-,P-XYLENE	20	UG/L	U	20.		1.7	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.		0.86	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0		0.63	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	METHYL TERT-BUTYL ETHER	10	UG/L	U	10.		1.3	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	NAPHTHALENE	10	UG/L	U	10.		3.0	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0		1.5	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	O-XYLENE	10	UG/L	U	10.		0.96	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	O-XYLENE	5.0	UG/L	U	5.0		0.48	
SJ4284-4	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0		0.54	
SJ4284-4DL	32M-01-18XBR_SPR16	06/10/16	MA DEP VPH	TOLUENE	10	UG/L	U	10.		1.1	
680-126310-11	32M-DUP-1	06/10/2016	6010C	Dissolved Manganese	3.0	ug/L	U	10	3	1	1
680-126310-11	32M-DUP-1	06/10/2016	6020A	Dissolved Arsenic	3.0	ug/L	U	3	3	1.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1,2-Trichloroethane	1.0	ug/L	U	1	1	0.33	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67	1

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680-126310-11	32M-DUP-1	06/10/2016	8260B	1,3,5-Trimethylbenzene	1.0	ug/L	U	1	1	0.31	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	2-Butanone (MEK)	10.0	ug/L	U	10	10	3.4	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	2-Hexanone	5.0	ug/L	U	10	5	2	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Acetone	10.0	ug/L	U	10	10	7	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Benzene	1.0	ug/L	U	1	1	0.43	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Bromoform	1.0	ug/L	U	1	1	0.43	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Carbon tetrachloride	1.0	ug/L	U	1	1	0.33	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Chlorodibromomethane	1.0	ug/L	U	1	1	0.32	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Chloroform	1.0	ug/L	U	1	1	0.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Ethylbenzene	1.0	ug/L	U	1	1	0.33	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Isopropylbenzene	0.50	ug/L	U	1	0.5	0.35	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47	1

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680-126310-11	32M-DUP-1	06/10/2016	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Toluene	1.0	ug/L	U	1	1	0.48	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Vinyl acetate	1.0	ug/L	U	2	1	0.81	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5	1
680-126310-11	32M-DUP-1	06/10/2016	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23	1
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	BENZENE	3.0	UG/L	U	3.0		0.61	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	C5-C8 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	C9-C10 AROMATICS	100	UG/L	U	100		50.	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	C9-C12 ALIPHATICS	100	UG/L	U	100		50.	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	ETHYLBENZENE	5.0	UG/L	U	5.0		0.44	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	M-,P-XYLENE	10	UG/L	U	10.		0.86	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0		0.63	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	NAPHTHALENE	5.0	UG/L	U	5.0		1.5	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	O-XYLENE	0.66	UG/L	J	5.0		0.48	
SJ4284-5	32M-DUP-1	06/10/16	MA DEP VPH	TOLUENE	5.0	UG/L	U	5.0		0.54	
680-126310-12	Trip Blank	06/10/2016	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,1,2-Trichloroethane	1.0	ug/L	U	1	1	0.33	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5	1

AOC 32/43A and AOC57_Spring 2016 LTM Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-12	Trip Blank	06/10/2016	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,3,5-Trimethylbenzene	1.0	ug/L	U	1	1	0.31	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34	1
680-126310-12	Trip Blank	06/10/2016	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46	1
680-126310-12	Trip Blank	06/10/2016	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37	1
680-126310-12	Trip Blank	06/10/2016	8260B	2-Butanone (MEK)	10.0	ug/L	U	10	10	3.4	1
680-126310-12	Trip Blank	06/10/2016	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-12	Trip Blank	06/10/2016	8260B	2-Hexanone	5.0	ug/L	U	10	5	2	1
680-126310-12	Trip Blank	06/10/2016	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45	1
680-126310-12	Trip Blank	06/10/2016	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48	1
680-126310-12	Trip Blank	06/10/2016	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1	1
680-126310-12	Trip Blank	06/10/2016	8260B	Acetone	10.0	ug/L	U	10	10	7	1
680-126310-12	Trip Blank	06/10/2016	8260B	Benzene	1.0	ug/L	U	1	1	0.43	1
680-126310-12	Trip Blank	06/10/2016	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	Bromoform	1.0	ug/L	U	1	1	0.43	1
680-126310-12	Trip Blank	06/10/2016	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43	1
680-126310-12	Trip Blank	06/10/2016	8260B	Carbon tetrachloride	1.0	ug/L	U	1	1	0.33	1
680-126310-12	Trip Blank	06/10/2016	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26	1
680-126310-12	Trip Blank	06/10/2016	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45	1
680-126310-12	Trip Blank	06/10/2016	8260B	Chlorodibromomethane	1.0	ug/L	U	1	1	0.32	1
680-126310-12	Trip Blank	06/10/2016	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	Chloroform	1.0	ug/L	U	1	1	0.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4	1
680-126310-12	Trip Blank	06/10/2016	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41	1
680-126310-12	Trip Blank	06/10/2016	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4	1
680-126310-12	Trip Blank	06/10/2016	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35	1
680-126310-12	Trip Blank	06/10/2016	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44	1
680-126310-12	Trip Blank	06/10/2016	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6	1
680-126310-12	Trip Blank	06/10/2016	8260B	Ethylbenzene	1.0	ug/L	U	1	1	0.33	1
680-126310-12	Trip Blank	06/10/2016	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44	1
680-126310-12	Trip Blank	06/10/2016	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	Isopropylbenzene	0.50	ug/L	U	1	0.5	0.35	1
680-126310-12	Trip Blank	06/10/2016	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3	1
680-126310-12	Trip Blank	06/10/2016	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35	1

AOC 32/43A and AOC57_Spring 2016 LTM Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor
680-126310-12	Trip Blank	06/10/2016	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47	1
680-126310-12	Trip Blank	06/10/2016	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38	1
680-126310-12	Trip Blank	06/10/2016	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23	1
680-126310-12	Trip Blank	06/10/2016	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42	1
680-126310-12	Trip Blank	06/10/2016	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27	1
680-126310-12	Trip Blank	06/10/2016	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45	1
680-126310-12	Trip Blank	06/10/2016	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74	1
680-126310-12	Trip Blank	06/10/2016	8260B	Toluene	1.0	ug/L	U	1	1	0.48	1
680-126310-12	Trip Blank	06/10/2016	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37	1
680-126310-12	Trip Blank	06/10/2016	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42	1
680-126310-12	Trip Blank	06/10/2016	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48	1
680-126310-12	Trip Blank	06/10/2016	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42	1
680-126310-12	Trip Blank	06/10/2016	8260B	Vinyl acetate	1.0	ug/L	U	2	1	0.81	1
680-126310-12	Trip Blank	06/10/2016	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5	1
680-126310-12	Trip Blank	06/10/2016	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23	1

Notes:

µg/L = microgram per liter

U/UJ = non-detect

J = Estimated result

LOQ = Limit of quantitation

LOD = Limit of Detection

MDL = Method Detection Limit

APPENDIX B.3
FALL 2016 LONG-TERM MONITORING EVENT

Dissolved Metals
SW 846/6010C/6020A
USEPA Level II Review

Site: AOC 69W	SDG #: 680-131340
Laboratory: Test America-Savannah, GA	Date: 12/05/2016
KGS Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-131340-1	69W-94-13	10/25/2016	Dissolved Metals	Groundwater
680-131340-10	69WP-13-01	10/26/2016	Dissolved Mn only	Groundwater
680-131340-11	69W-DUP-1	10/25/2016	Dissolved Metals	Groundwater
680-131340-2	69W-94-14	10/25/2016	Dissolved Metals	Groundwater
680-131340-3	ZWM-95-15X	10/25/2016	Dissolved Metals	Groundwater
680-131340-4	ZWM-95-18X	10/26/2016	Dissolved Metals	Groundwater
680-131340-5	ZWM-99-22X	10/25/2016	Dissolved Metals	Groundwater
680-131340-6	ZWM-99-23X	10/25/2016	Dissolved Metals	Groundwater
680-131340-7	ZWM-99-24X	10/25/2016	Dissolved Metals	Groundwater
680-131340-8	ZWM-01-25X	10/25/2016	Dissolved Metals	Groundwater
680-131340-9	69WP-08-01	10/26/2016	Dissolved Metals	Groundwater

Summary – Data validation was performed on the data for ten (10) groundwater samples and one (1) field duplicate sample submitted for dissolved metals analyses for the following analytes: iron and manganese, by method SW6010C and arsenic by method SW6020A. Sample 69WP-13-01 was submitted for dissolved manganese analysis only.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial review of data indicated a discrepancy in the iron and manganese results for sample ZWM-99-22X (lab Sample ID: 680-131340-3). After review of the matrix spike/ matrix spike duplicate and the field duplicate results for sample 69W-DUP-1 (Lab Sample ID; 680-131340-11); it appeared that the native sample results for ZWM-99-22X were incorrect. The laboratory was asked to investigate and reanalyze this sample. The reanalyzed results correspond to FD results and historical data and have been reported. No other discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/26/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries (%R) for the all target analytes met the %R control limits established in the QAPP.

Qualification: None required.

MS/MSD – Samples ZWM-99-22X (Lab Sample ID: 680-131340-5) and 69W-DUP-1 (Lab Sample ID: 680-131340-11) were spiked and analyzed as matrix spike/matrix spike duplicate samples. The %Rs and calculated RPDs for both sets of MS/MSD samples were within control limits.

Qualification: None required.

Method Blank – The method blanks associated and analyzed with these samples for both method SW6010C and SW6020A were non-detect for all analytes.

Qualification: None required.

Field Duplicate – Sample 69W-DUP-1 (Lab sample ID: 680-131340-11) was the field duplicate of sample ZWM-99-22X (Lab sample ID: 680-131340-5). Sample results were comparable. The FD sample results are summarized in the table below.

	ZWM-99-22X	69W-DUP-1	
	680-131340-5	680-131340-11	
Analyte	**Result (µg/L)**	**Result (µg/L)**	**RPD (%)**
Iron	18,000	18,000	0
Manganese	960	980	2.1
Arsenic	150	140	6.9

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "LOD U." Analyte detections below the LOQ were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The results for select total metals reported in this SDG are acceptable as reported and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
680-131340-1	69W-94-13	Dissolved Metals	No qualifications needed.			
680-131340-2	69W-94-14	Dissolved Metals	No qualifications needed.			
680-131340-3	ZWM-95-15X	Dissolved Metals	No qualifications needed.			
680-131340-4	ZWM-95-18X	Dissolved Metals	No qualifications needed.			
680-131340-5	ZWM-99-22X	Dissolved Metals	No qualifications needed.			
680-131340-6	ZWM-99-23X	Dissolved Metals	No qualifications needed.			
680-131340-7	ZWM-99-24X	Dissolved Metals	No qualifications needed.			
680-131340-8	ZWM-01-25X	Dissolved Metals	No qualifications needed.			
680-131340-9	69WP-08-01	Dissolved Metals	No qualifications needed.			
680-131340-10	69WP-13-01	Dissolved Mn Only	No qualifications needed.			
680-131340-11	69W-DUP-1	Dissolved Metals	No qualifications needed.			

Extractable Petroleum Hydrocarbons
MADEP Method EPH-04-1.1
USEPA Level II Review

Site: AOC 69W	SDG #: 680-131340
Laboratory: Test America-Savannah, GA EPH analyses subcontracted to Katahdin, Scarborough, ME	Date: 11/18/2016
KGS Reviewer: Laurie Ekes	Project: 1024

TAL Lab Sample ID	Katahdin Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Matrix
680-131340-1	SJ8936-1	69W-94-13	10/25/2016	MADEP EPH	Groundwater
680-131340-2	SJ8936-2	69W-94-14	10/25/2016	MADEP EPH	Groundwater
680-131340-3	SJ8936-3	ZWM-95-15X	10/25/2016	MADEP EPH	Groundwater
680-131340-4	SJ8936-4	ZWM-95-18X	10/26/2016	MADEP EPH	Groundwater
680-131340-5	SJ8936-5	ZWM-99-22X	10/25/2016	MADEP EPH	Groundwater
680-131340-6	SJ8936-6	ZWM-99-23X	10/25/2016	MADEP EPH	Groundwater
680-131340-7	SJ8936-7	ZWM-99-24X	10/25/2016	MADEP EPH	Groundwater
680-131340-8	SJ8936-8	ZWM-01-25X	10/25/2016	MADEP EPH	Groundwater
680-131340-11	SJ8936-9	69W-DUP-01	10/25/2016	MADEP EPH	Groundwater

Summary – Samples for EPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine. Data validation was performed on the data for eight (8) groundwater samples and one (1) field duplicate sample and submitted for Extractable Petroleum Hydrocarbon (EPH) analyses by MADEP method EPH 04-1.1.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/27/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – Sample ZWM-95-15X (Lab Sample ID: SJ8936-3) has low recoveries for two surrogates; the sample was rerun with similar results. The initial results will be reported. Surrogate recoveries were within the control limits for all other samples.

Qualification: The results for sample ZWM-95-15X (Lab Sample ID: SJ8936-3) were qualified as estimated (UJ/J).

Laboratory Control Sample – The LCS/LCSD pairs prepared and analyzed with these samples met the %R and RPD control limits for all target EPH compounds.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for all target EPH on sample ZWM-95-22X (Lab sample ID: SJ8936-5). The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – Method blanks prepared and analyzed with these samples were non-detect for all target EPH compounds.

Qualification: None required.

Field Duplicate – Sample 69W-DUP-01 (Lab sample ID: SJ8936-9) was a field duplicate of sample ZWM-95-22X (Lab sample ID: SJ8936-5). The RPDs between results were variable as expected from low level results. The FD sample results are summarized in the table below.

	ZWM-99-22X	69W-DUP-01	
	SJ8936-5	SJ8936-9	
ANALYTE	Results (ug/L)	Results (ug/L)	RPD (%)
C11-C22 AROMATICS	210	84	85.7
FLUORENE	1.4	1.1	24.0
NAPHTHALENE	1.3	0.9	36.4
UNADJUSTED C11-C22 AROMATICS	210	84	85.7

Qualification: The results for C11-C22 aromatics and naphthalene were qualified as estimated (J).

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The EPH results are acceptable as reported with the noted qualifications and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
SJ8936-1	69W-94-13	MADEP EPH	No qualifications needed.			
SJ8936-2	69W-94-14	MADEP EPH	No qualifications needed.			
SJ8936-3	ZWM-95-15X	2-METHYLNAPHTHALENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	ACENAPHTHENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	ACENAPHTHYLENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	ANTHRACENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	BENZO(A)ANTHRACENE	1.9	U	1.9	UJ

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
SJ8936-3	ZWM-95-15X	BENZO(A)PYRENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	BENZO(B)FLUORANTHENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	BENZO(K)FLUORANTHENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	BENZO[G,H,I]PERYLENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	C11-C22 AROMATICS	100		100	J
SJ8936-3	ZWM-95-15X	C19-C36 ALIPHATICS	120		120	J
SJ8936-3	ZWM-95-15X	C9-C18 ALIPHATICS	220		220	J
SJ8936-3	ZWM-95-15X	CHRYSENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	DIBENZO(A,H)ANTHRACENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	FLUORANTHENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	FLUORENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	INDENO(1,2,3-CD)PYRENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	NAPHTHALENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	PHENANTHRENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	PYRENE	1.9	U	1.9	UJ
SJ8936-3	ZWM-95-15X	UNADJUSTED C11-C22 AROMATICS	100		100	J
SJ8936-4	ZWM-95-18X	MADEP EPH	No qualifications needed.			
SJ8936-5	ZWM-99-22X	C11-C22 AROMATICS	210		210	J
		FLUORENE	1.4	J	1.4	J
		UNADJUSTED C11-C22 AROMATICS	210		210	J
SJ8936-6	ZWM-99-23X	MADEP EPH	No qualifications needed.			
SJ8936-7	ZWM-99-24X	MADEP EPH	No qualifications needed.			
SJ8936-8	ZWM-01-25X	MADEP EPH	No qualifications needed.			
SJ8936-9	69W-DUP-01	C11-C22 AROMATICS	84	J	84	J
		FLUORENE	1.1	J	1.1	J
		UNADJUSTED C11-C22 AROMATICS	84	J	84	J

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-131340-1	69W-94-13	10/25/2016	6010C	Iron	**11,000**	ug/L		50	50	17	1	
680-131340-1	69W-94-13	10/25/2016	6010C	Manganese	**2,600**	ug/L		10	3	1	1	
680-131340-1	69W-94-13	10/25/2016	6020A	Arsenic	**76**	ug/L		3.0	3.0	1.5	1	
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	ACENAPHTHENE	1.9	ug/L	U	1.9	1.9	1.7	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.94	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	**410**	ug/L		94	94	47	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	**160**	ug/L		94	94	47	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	**1100**	ug/L		94	94	47	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	CHRYSENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.1	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	FLUORENE	**1.6**	ug/L	J	1.9	1.9	0.85	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	NAPHTHALENE	**1.4**	ug/L	J	1.9	1.9	0.85	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	PHENANTHRENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	PYRENE	1.9	ug/L	U	1.9	1.9	1	1	SJ8936-1
680-131340-1	69W-94-13	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**410**	ug/L		94	94	47	1	SJ8936-1
680-131340-2	69W-94-14	10/25/2016	6010C	Iron	**87**	ug/L		50	50	17	1	
680-131340-2	69W-94-14	10/25/2016	6010C	Manganese	**27**	ug/L		10	3	1	1	
680-131340-2	69W-94-14	10/25/2016	6020A	Arsenic	3.0	ug/L	U	3.0	3.0	1.5	1	
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	2.2	ug/L	U	2.2	2.2	0.89	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	ACENAPHTHENE	2.2	ug/L	U	2.2	2.2	2	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	2.2	ug/L	U	2.2	2.2	0.89	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	ANTHRACENE	2.2	ug/L	U	2.2	2.2	1.6	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	2.2	ug/L	U	2.2	2.2	1.6	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	2.2	ug/L	U	2.2	2.2	1.4	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	2.2	ug/L	U	2.2	2.2	0.89	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	2.2	ug/L	U	2.2	2.2	1.1	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	2.2	ug/L	U	2.2	2.2	1.4	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	110	ug/L	U	110	110	56	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	110	ug/L	U	110	110	56	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	110	ug/L	U	110	110	56	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	CHRYSENE	2.2	ug/L	U	2.2	2.2	1	1	SJ8936-2

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	2.2	ug/L	U	2.2	2.2	1.3	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	FLUORANTHENE	2.2	ug/L	U	2.2	2.2	0.89	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	FLUORENE	2.2	ug/L	U	2.2	2.2	1	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	2.2	ug/L	U	2.2	2.2	1.6	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	NAPHTHALENE	2.2	ug/L	U	2.2	2.2	1	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	PHENANTHRENE	2.2	ug/L	U	2.2	2.2	1	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	PYRENE	2.2	ug/L	U	2.2	2.2	1.2	1	SJ8936-2
680-131340-2	69W-94-14	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	110	ug/L	U	110	110	56	1	SJ8936-2
680-131340-3	ZWM-95-15X	10/25/2016	6010C	Iron	**180**	ug/L		50	50	17	1	
680-131340-3	ZWM-95-15X	10/25/2016	6010C	Manganese	**17**	ug/L		10	3	1	1	
680-131340-3	ZWM-95-15X	10/25/2016	6020A	Arsenic	**3.7**	ug/L		3.0	3.0	1.5	1	
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	ug/L	UJ	1.9	1.9	0.75	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	ACENAPHTHENE	1.9	ug/L	UJ	1.9	1.9	1.7	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	ug/L	UJ	1.9	1.9	0.75	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	ANTHRACENE	1.9	ug/L	UJ	1.9	1.9	1.3	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	ug/L	UJ	1.9	1.9	1.3	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	ug/L	UJ	1.9	1.9	1.2	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	ug/L	UJ	1.9	1.9	0.75	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	ug/L	UJ	1.9	1.9	0.94	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	ug/L	UJ	1.9	1.9	1.2	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	**100**	ug/L	J	94	94	47	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	**120**	ug/L	J	94	94	47	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	**220**	ug/L	J	94	94	47	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	CHRYSENE	1.9	ug/L	UJ	1.9	1.9	0.85	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	ug/L	UJ	1.9	1.9	1.1	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	FLUORANTHENE	1.9	ug/L	UJ	1.9	1.9	0.75	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	FLUORENE	1.9	ug/L	UJ	1.9	1.9	0.85	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	ug/L	UJ	1.9	1.9	1.3	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	NAPHTHALENE	1.9	ug/L	UJ	1.9	1.9	0.85	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	PHENANTHRENE	1.9	ug/L	UJ	1.9	1.9	0.85	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	PYRENE	1.9	ug/L	UJ	1.9	1.9	1	1	SJ8936-3
680-131340-3	ZWM-95-15X	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**100**	ug/L	J	94	94	47	1	SJ8936-3
680-131340-4	ZWM-95-18X	10/26/2016	6010C	Iron	50	ug/L	U	50	50	17	1	
680-131340-4	ZWM-95-18X	10/26/2016	6010C	Manganese	**12**	ug/L		10	3	1	1	
680-131340-4	ZWM-95-18X	10/26/2016	6020A	Arsenic	3.0	ug/L	U	3.0	3.0	1.5	1	
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	2-METHYLNAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.83	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	ACENAPHTHENE	2.1	ug/L	U	2.1	2.1	1.9	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	ACENAPHTHYLENE	2.1	ug/L	U	2.1	2.1	0.83	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	BENZO(A)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-4

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	BENZO(A)PYRENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.83	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	1	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	C11-C22 AROMATICS	**240**	ug/L		100	100	52	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	C19-C36 ALIPHATICS	100	ug/L	U	100	100	52	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	C9-C18 ALIPHATICS	100	ug/L	U	100	100	52	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	CHRYSENE	2.1	ug/L	U	2.1	2.1	0.94	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.2	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.83	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	FLUORENE	2.1	ug/L	U	2.1	2.1	0.94	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	NAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.94	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	PHENANTHRENE	2.1	ug/L	U	2.1	2.1	0.94	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	PYRENE	2.1	ug/L	U	2.1	2.1	1.1	1	SJ8936-4
680-131340-4	ZWM-95-18X	10/26/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**240**	ug/L		100	100	52	1	SJ8936-4
680-131340-5	ZWM-99-22X	10/25/2016	6010C	Iron	**18,000**	ug/L		50	50	17	1	
680-131340-5	ZWM-99-22X	10/25/2016	6010C	Manganese	**960**	ug/L		10	3	1	1	
680-131340-5	ZWM-99-22X	10/25/2016	6020A	Arsenic	**150**	ug/L		3.0	3.0	1.5	1	
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	ACENAPHTHENE	2.1	ug/L	U	2.1	2.1	1.9	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	1	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	**210**	ug/L	J	100	100	53	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	100	ug/L	U	100	100	53	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	100	ug/L	U	100	100	53	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	CHRYSENE	2.1	ug/L	U	2.1	2.1	0.95	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.3	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	FLUORENE	**1.4**	ug/L	J	2.1	2.1	0.95	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	NAPHTHALENE	**1.3**	ug/L	J	2.1	2.1	0.95	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	PHENANTHRENE	2.1	ug/L	U	2.1	2.1	0.95	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	PYRENE	2.1	ug/L	U	2.1	2.1	1.2	1	SJ8936-5
680-131340-5	ZWM-99-22X	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**210**	ug/L	J	100	100	53	1	SJ8936-5

AOC 69W Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-131340-6	ZWM-99-23X	10/25/2016	6010C	Iron	**1,500**	ug/L		50	50	17	1	
680-131340-6	ZWM-99-23X	10/25/2016	6010C	Manganese	**590**	ug/L		10	3	1	1	
680-131340-6	ZWM-99-23X	10/25/2016	6020A	Arsenic	**7.7**	ug/L		3.0	3.0	1.5	1	
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.85	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	ACENAPHTHENE	2.1	ug/L	U	2.1	2.1	1.9	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	2.1	ug/L	U	2.1	2.1	0.85	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.85	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	1.1	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	**110**	ug/L		110	110	53	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	110	ug/L	U	110	110	53	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	110	ug/L	U	110	110	53	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	CHRYSENE	2.1	ug/L	U	2.1	2.1	0.96	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.3	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.85	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	FLUORENE	2.1	ug/L	U	2.1	2.1	0.96	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	NAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.96	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	PHENANTHRENE	2.1	ug/L	U	2.1	2.1	0.96	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	PYRENE	2.1	ug/L	U	2.1	2.1	1.2	1	SJ8936-6
680-131340-6	ZWM-99-23X	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**110**	ug/L		110	110	53	1	SJ8936-6
680-131340-7	ZWM-99-24X	10/25/2016	6010C	Iron	**41**	ug/L	J	50	50	17	1	
680-131340-7	ZWM-99-24X	10/25/2016	6010C	Manganese	**2.9**	ug/L	J	10	3	1	1	
680-131340-7	ZWM-99-24X	10/25/2016	6020A	Arsenic	3.0	ug/L	U	3.0	3.0	1.5	1	
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	ug/L	U	1.9	1.9	0.77	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	ACENAPHTHENE	1.9	ug/L	U	1.9	1.9	1.7	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	ug/L	U	1.9	1.9	0.77	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.77	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.96	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	**52**	ug/L	J	96	96	48	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	96	ug/L	U	96	96	48	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	96	ug/L	U	96	96	48	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	CHRYSENE	1.9	ug/L	U	1.9	1.9	0.86	1	SJ8936-7

AOC 69W Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.77	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	FLUORENE	1.9	ug/L	U	1.9	1.9	0.86	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	NAPHTHALENE	1.9	ug/L	U	1.9	1.9	0.86	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	PHENANTHRENE	1.9	ug/L	U	1.9	1.9	0.86	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	PYRENE	1.9	ug/L	U	1.9	1.9	1	1	SJ8936-7
680-131340-7	ZWM-99-24X	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**52**	ug/L	J	96	96	48	1	SJ8936-7
680-131340-8	ZWM-01-25X	10/25/2016	6010C	Iron	50	ug/L	U	50	50	17	1	
680-131340-8	ZWM-01-25X	10/25/2016	6010C	Manganese	**78**	ug/L		10	3	1	1	
680-131340-8	ZWM-01-25X	10/25/2016	6020A	Arsenic	3.0	ug/L	U	3.0	3.0	1.5	1	
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	ACENAPHTHENE	1.9	ug/L	U	1.9	1.9	1.7	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.94	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	94	ug/L	U	94	94	47	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	94	ug/L	U	94	94	47	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	94	ug/L	U	94	94	47	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	CHRYSENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.1	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	FLUORENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	NAPHTHALENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	PHENANTHRENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	PYRENE	1.9	ug/L	U	1.9	1.9	1	1	SJ8936-8
680-131340-8	ZWM-01-25X	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	94	ug/L	U	94	94	47	1	SJ8936-8
680-131340-9	69WP-08-01	10/26/2016	6010C	Iron	**7,100**	ug/L		50	50	17	1	
680-131340-9	69WP-08-01	10/26/2016	6010C	Manganese	**79**	ug/L		10	3	1	1	
680-131340-9	69WP-08-01	10/26/2016	6020A	Arsenic	3.0	ug/L	U	3.0	3.0	1.5	1	
680-131340-10	69WP-13-01	10/26/2016	6010C	Manganese	**140**	ug/L		10	3	1	1	
680-131340-11	69W-DUP-1	10/25/2016	6010C	Iron	**18,000**	ug/L		50	50	17	1	
680-131340-11	69W-DUP-1	10/25/2016	6010C	Manganese	**980**	ug/L		10	3	1	1	
680-131340-11	69W-DUP-1	10/25/2016	6020A	Arsenic	**140**	ug/L		3.0	3.0	1.5	1	
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	2-METHYLNAPHTHALENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-9

AOC 69W Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	ACENAPHTHENE	1.9	ug/L	U	1.9	1.9	1.7	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	ACENAPHTHYLENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	BENZO(A)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	BENZO(A)PYRENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	BENZO(B)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	BENZO(K)FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.94	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	BENZO[G,H,I]PERYLENE	1.9	ug/L	U	1.9	1.9	1.2	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	C11-C22 AROMATICS	**84**	ug/L	J	94	94	47	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	C19-C36 ALIPHATICS	94	ug/L	U	94	94	47	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	C9-C18 ALIPHATICS	94	ug/L	U	94	94	47	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	CHRYSENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	DIBENZO(A,H)ANTHRACENE	1.9	ug/L	U	1.9	1.9	1.1	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	FLUORANTHENE	1.9	ug/L	U	1.9	1.9	0.75	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	FLUORENE	**1.1**	ug/L	J	1.9	1.9	0.85	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	INDENO(1,2,3-CD)PYRENE	1.9	ug/L	U	1.9	1.9	1.3	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	NAPHTHALENE	**0.9**	ug/L	J	1.9	1.9	0.85	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	PHENANTHRENE	1.9	ug/L	U	1.9	1.9	0.85	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	PYRENE	1.9	ug/L	U	1.9	1.9	1	1	SJ8936-9
680-131340-11	69W-DUP-01	10/25/2016	MA DEP EPH	UNADJUSTED C11-C22 AROMATICS	**84**	ug/L	J	94	94	47	1	SJ8936-9

Notes:

Qualified validated data

µg/L = microgram per liter

U = non-detect

UJ = Estimated non-detect

J = Estimated result

LOQ = Limit of quantitation

LOD = Limit of Detection

MDL = Method Detection Limit

Volatile Organic Compounds
Method EPA624
USEPA Level II Review

Site: DCL Leachate Sample	SDG #: 680-133049
Laboratory: Test America-Savannah, GA	Date: 01/04/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
DCL Leachate	680-133049-1	12/08/2016	VOCs	Leachate

Summary - Data validation was performed on the data for one sample collected and submitted for VOCs by EPA Method 624. Samples for VOCs by EPA method 624 analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine and reported under Katahdin SDG TJ0540.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Sample Delivery and Condition – All samples arrived at the laboratory on 12/14/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required.

Surrogates – Surrogate recoveries were within the control limits.

Qualification: None required.

Laboratory Control Sample – Percent recoveries for the LCS in (WG197007-LCS) analyzed on 12/20/2016 were within %R control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate samples were not submitted.

Qualification: None required.

Method Blank – The method blank (WG197007-MB) analyzed on 12/20/2016 had carbon disulfide reported at 0.51J µg/L. All other VOCs were non-detect.

Qualification: The result for carbon disulfide (0.41J µg/L) in the DCL Leachate sample was qualified as non-detect 5.0 U) at the reporting limit.

Field Blanks – A trip blank was not submitted.

Qualification: None required.

Field Duplicate – A field duplicate sample was not submitted.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VOC results reported in this SDG are acceptable as reported with the indicated qualifications. The data may be used for its intended purpose.

Semi-Volatile Organic Compounds
Method EPA625
USEPA Level II Review

Site: DCL Leachate Sample	SDG #: 680-133049
Laboratory: Test America-Savannah, GA	Date: 01/04/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
DCL Leachate	680-133049-1	12/08/2016	SVOCs	Leachate

Summary - Data validation was performed on the data for one sample collected and submitted for SVOCs by EPA Method 625. Samples for SVOCs by EPA method 625 analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine and reported under Katahdin SDG TJ0540.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Sample Delivery and Condition – All samples arrived at the laboratory on 12/14/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required.

Surrogates – Surrogate recoveries were within the control limits.

Qualification: None required.

Laboratory Control Sample – Percent recoveries for the LCS (WG196753) analyzed on 12/16/2016 were within %R control limits.

Qualification: None required.

MS/MSD – Matrix spike/matrix pike duplicate samples were not submitted.

Qualification: None required.

Method Blank – The method blank (WG196753-BLANK) analyzed on 12/16/2015 was free of contamination.

Qualification: None required.

Field Duplicate – A field duplicate sample was not submitted.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VOC results reported in this SDG are acceptable as reported; SVOC result were all non-detect. The data may be used for its intended purpose.

Pesticides/PCBs
SW-846 Method 8081B/8082A
USEPA Level II Review

Site: DCL Leachate Sample	SDG #: 680-133049
Laboratory: Test America-Savannah, GA	Date: 01/03/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
DCL LEACHATE	680-133049-1	12/08/2016	Pesticides/PCBs	Leachate

Summary - Data validation was performed on the data for one sample collected and submitted for Pesticides and PCBs by Methods SW846/8081B/8082A.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Sample Delivery and Condition – All samples arrived at the laboratory on 12/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – The sample was extracted within the 7-day holding time required by the QAPP and analyzed within 40 days of extraction.

Qualification: None required.

Surrogates – Surrogate recoveries were within the control limits.

Qualification: None required.

Laboratory Control Sample – Percent recoveries for the LCS in analytical batch 461557 analyzed on 12/14/2016 were within %R control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike samples were not submitted.

Qualification: None required.

Method Blank – The method blank reported in analytical batch 461557 analyzed on 12/14/2016 was free of contamination.

Qualification: None required.

Field Blanks – Field blanks were not submitted.

Qualification: None required.

Field Duplicate – A field duplicate sample was not submitted.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The pesticide/PCBs results reported in this SDG are acceptable as reported. The data may be used for its intended purpose.

Total Metals
SW-846 Method 6010C/6020A (Total Metals)
SW-846 Method 7470A (Mercury)
USEPA Level II Review

Site: DCL Leachate Sample	SDG #: 680-133049
Laboratory: Test America-Savannah, GA	Date: 01/03/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
DCL LEACHATE	680-133049-1	12/08/2016	Total Metals/Mercury	Leachate

Summary - Data validation was performed on the data for one sample collected and submitted for total metals analyses by Methods SW846/6010C, SW846/6020A for arsenic and 7470A for mercury.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 12/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time (28 days for mercury) required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS prepared and analyzed with this sample met the %R control limits for all target analytes.

Qualification: None required.

MS/MSD – Sample DCL Leachate (Lab Sample ID: 680-133049-1) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %Rs and RPD results for MS/MSD sample were within the control limits for all target analytes.

Qualification: None required.

Method Blank – The method blanks associated and analyzed with these samples were non-detect for all target analytes.

Qualification: None required.

Field Duplicate – A field duplicate sample was not submitted.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The total metals results reported in the SDG are acceptable as reported and the data may be used for its intended purpose.

Wet Chemistry

Total Petroleum Hydrocarbons/TPH (SW8015C-DRO)
Total Suspended Solids/TSS (SM2540D), Total Cyanide (SW9012A)
pH (SW9040C) and Total Phenolics (SW9065)
USEPA Level II Review

Site: DCL Leachate Sample	SDG #: 680-133049
Laboratory: Test America-Savannah, GA	Date: 01/03/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
DCL Leachate	680-133049-1	12/08/2016	Miscellaneous Parameters	Leachate

Summary - Data validation was performed on the data for one sample collected and submitted for the miscellaneous parameters listed above.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory on 12/10/2016 in acceptable condition and temperature, and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – The pH analysis was performed past the recommended holding time of 15 minutes. All other analyses were performed within the respective holding times required by the QAPP for preserved aqueous samples.

Qualification: None required.

Method Blank – The method blanks for all parameters were free from contamination.

Qualification: None required.

Laboratory Control Sample – The LCS %R results were within control limits for all parameters.

Qualification: None required.

Matrix Spike – Matrix spike/matrix spike duplicate samples were not submitted.

Qualification: None required.

Field Blanks – Field blank samples were not submitted with this sample set.

Qualification: None required.

Field Duplicate – A field duplicate sample was not submitted.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The results for the miscellaneous parameters reported in this SDG are acceptable as reported. The data may be used for its intended purpose.

DCL Leachate
Fall 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL
680-133049-1	DCL Leachate	12/08/2016	6010C	Aluminum	70	ug/L	U	200	70	24
680-133049-1	DCL Leachate	12/08/2016	6010C	Cadmium	3	ug/L	U	5	3	1
680-133049-1	DCL Leachate	12/08/2016	6010C	Chromium	4	ug/L	U	10	4	1.6
680-133049-1	DCL Leachate	12/08/2016	6010C	Copper	5	ug/L	U	20	5	1.8
680-133049-1	DCL Leachate	12/08/2016	6010C	Lead	10	ug/L	U	10	10	3.9
680-133049-1	DCL Leachate	12/08/2016	6010C	Nickel	3.7	ug/L	J	40	5	2.1
680-133049-1	DCL Leachate	12/08/2016	6010C	Silver	1.5	ug/L	U	10	1.5	0.6
680-133049-1	DCL Leachate	12/08/2016	6010C	Zinc	20	ug/L	U	20	20	7
680-133049-1	DCL Leachate	12/08/2016	6020A	Arsenic	3	ug/L	U	3	3	1.5
680-133049-1	DCL Leachate	12/08/2016	7470A	Mercury	0.2	ug/L	U	0.2	0.2	0.08
680-133049-1	DCL Leachate	12/08/2016	8015C DRO	Diesel Range Organics [C10-C28]	0.87	mg/L		0.096	0.082	0.048
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	4,4'-DDD	0.0095	ug/L	U	0.048	0.0095	0.006
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	4,4'-DDE	0.0095	ug/L	U	0.048	0.0095	0.0049
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	4,4'-DDT	0.017	ug/L	U	0.048	0.017	0.0067
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Aldrin	0.017	ug/L	U	0.048	0.017	0.0069
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	alpha-BHC	0.0095	ug/L	U	0.048	0.0095	0.0032
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	beta-BHC	0.017	ug/L	U	0.048	0.017	0.0087
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Chlordane (technical)	0.29	ug/L	U	0.48	0.29	0.091
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	delta-BHC	0.017	ug/L	U	0.048	0.017	0.0072
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Dieldrin	0.0095	ug/L	U	0.048	0.0095	0.0036
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Endosulfan I	0.0095	ug/L	U	0.048	0.0095	0.0033
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Endosulfan II	0.0095	ug/L	U	0.048	0.0095	0.004
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Endosulfan sulfate	0.0095	ug/L	U	0.048	0.0095	0.0049
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Endrin	0.0095	ug/L	U Q	0.048	0.0095	0.0051
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Endrin aldehyde	0.0095	ug/L	U	0.048	0.0095	0.0058
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Endrin ketone	0.0095	ug/L	U	0.048	0.0095	0.0044
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	gamma-BHC (Lindane)	0.0095	ug/L	U	0.048	0.0095	0.0034
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Heptachlor	0.017	ug/L	U	0.048	0.017	0.0068
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Heptachlor epoxide	0.0095	ug/L	U	0.048	0.0095	0.0035
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Methoxychlor	0.017	ug/L	U	0.048	0.017	0.0093
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1016	0.34	ug/L	U	0.95	0.34	0.17
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1221	0.31	ug/L	U	0.95	0.31	0.18
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1232	0.43	ug/L	U	0.95	0.43	0.24
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1242	0.43	ug/L	U	0.95	0.43	0.18
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1248	0.43	ug/L	U	0.95	0.43	0.2
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1254	0.31	ug/L	U	0.95	0.31	0.1
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	PCB-1260	0.34	ug/L	U	0.95	0.34	0.11
680-133049-1	DCL Leachate	12/08/2016	8081B 8082A	Toxaphene	0.76	ug/L	U	4.8	0.76	0.38
680-133049-1	DCL Leachate	12/08/2016	9012B	Cyanide, Total	0.005	mg/L	U J	0.01	0.005	0.0025
680-133049-1	DCL Leachate	12/08/2016	9040C	pH	7.7	SU				

DCL Leachate
Fall 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL
680-133049-1	DCL Leachate	12/08/2016	9065	Phenolics, Total Recoverable	0.05	mg/L	U	0.05	0.05	0.025
680-133049-1	DCL Leachate	12/08/2016	SM 2540D	Total Suspended Solids	1.2	mg/L	J	4	2.8	1.1
TJ0540-1	DCL Leachate	12/08/2016	624	1,1,1-TRICHLOROETHANE	5	UG/L	U	5	5	0.20
TJ0540-1	DCL Leachate	12/08/2016	624	1,1,2,2-TETRACHLOROETHANE	5	UG/L	U	5	5	0.38
TJ0540-1	DCL Leachate	12/08/2016	624	1,1,2-TRICHLORO-1,2,2-TRIFLUOROE	5	UG/L	U	5	5	0.31
TJ0540-1	DCL Leachate	12/08/2016	624	1,1,2-TRICHLOROETHANE	5	UG/L	U	5	5	0.33
TJ0540-1	DCL Leachate	12/08/2016	624	1,1-DICHLOROETHANE	5	UG/L	U	5	5	0.21
TJ0540-1	DCL Leachate	12/08/2016	624	1,1-DICHLOROETHENE	5	UG/L	U	5	5	0.35
TJ0540-1	DCL Leachate	12/08/2016	624	1,2,4-TRICHLOROBENZENE	5	UG/L	U	5	5	0.37
TJ0540-1	DCL Leachate	12/08/2016	624	1,2-DIBROMO-3-CHLOROPROPANE	5	UG/L	U	5	5	0.50
TJ0540-1	DCL Leachate	12/08/2016	624	1,2-DIBROMOETHANE	5	UG/L	U	5	5	0.22
TJ0540-1	DCL Leachate	12/08/2016	624	1,2-DICHLOROBENZENE	5	UG/L	U	5	5	0.15
TJ0540-1	DCL Leachate	12/08/2016	624	1,2-DICHLOROETHANE	5	UG/L	U	5	5	0.20
TJ0540-1	DCL Leachate	12/08/2016	624	1,2-DICHLOROETHYLENE	10	UG/L	U	10	10	0.21
TJ0540-1	DCL Leachate	12/08/2016	624	1,2-DICHLOROPROPANE	5	UG/L	U	5	5	0.25
TJ0540-1	DCL Leachate	12/08/2016	624	1,3-DICHLOROBENZENE	5	UG/L	U	5	5	0.26
TJ0540-1	DCL Leachate	12/08/2016	624	1,4-DICHLOROBENZENE	5	UG/L	U	5	5	0.24
TJ0540-1	DCL Leachate	12/08/2016	624	2-BUTANONE	10	UG/L	U	10	10	1.3
TJ0540-1	DCL Leachate	12/08/2016	624	2-HEXANONE	5	UG/L	U	5	5	1.7
TJ0540-1	DCL Leachate	12/08/2016	624	4-METHYL-2-PENTANONE	5	UG/L	U	5	5	1.3
TJ0540-1	DCL Leachate	12/08/2016	624	ACETONE	3.8	UG/L	J	10	10	2.2
TJ0540-1	DCL Leachate	12/08/2016	624	BENZENE	5	UG/L	U	5	5	0.26
TJ0540-1	DCL Leachate	12/08/2016	624	BROMODICHLOROMETHANE	5	UG/L	U	5	5	0.33
TJ0540-1	DCL Leachate	12/08/2016	624	BROMOFORM	5	UG/L	U	5	5	0.23
TJ0540-1	DCL Leachate	12/08/2016	624	BROMOMETHANE	5	UG/L	U	5	5	0.49
TJ0540-1	DCL Leachate	12/08/2016	624	CARBON DISULFIDE	5	UG/L	U	5	5	0.25
TJ0540-1	DCL Leachate	12/08/2016	624	CARBON TETRACHLORIDE	5	UG/L	U	5	5	0.22
TJ0540-1	DCL Leachate	12/08/2016	624	CHLOROBENZENE	5	UG/L	U	5	5	0.22
TJ0540-1	DCL Leachate	12/08/2016	624	CHLOROETHANE	5	UG/L	U	5	5	0.55
TJ0540-1	DCL Leachate	12/08/2016	624	CHLOROFORM	5	UG/L	U	5	5	0.32
TJ0540-1	DCL Leachate	12/08/2016	624	CHLOROMETHANE	5	UG/L	U	5	5	0.36
TJ0540-1	DCL Leachate	12/08/2016	624	CIS-1,2-DICHLOROETHENE	5	UG/L	U	5	5	0.21
TJ0540-1	DCL Leachate	12/08/2016	624	CIS-1,3-DICHLOROPROPENE	5	UG/L	U	5	5	0.19
TJ0540-1	DCL Leachate	12/08/2016	624	CYCLOHEXANE	5	UG/L	U	5	5	0.31
TJ0540-1	DCL Leachate	12/08/2016	624	DIBROMOCHLOROMETHANE	5	UG/L	U	5	5	0.30
TJ0540-1	DCL Leachate	12/08/2016	624	DICHLORODIFLUOROMETHANE	5	UG/L	U	5	5	0.24
TJ0540-1	DCL Leachate	12/08/2016	624	ETHYLBENZENE	5	UG/L	U	5	5	0.21
TJ0540-1	DCL Leachate	12/08/2016	624	ISOPROPYLBENZENE	5	UG/L	U	5	5	0.23
TJ0540-1	DCL Leachate	12/08/2016	624	M-,P-XYLENE	10	UG/L	U	10	10	0.59
TJ0540-1	DCL Leachate	12/08/2016	624	METHYL ACETATE	5	UG/L	U	5	5	0.53

DCL Leachate
Fall 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL
TJ0540-1	DCL Leachate	12/08/2016	624	METHYL TERT-BUTYL ETHER	5	UG/L	U	5	5	0.36
TJ0540-1	DCL Leachate	12/08/2016	624	METHYLCYCLOHEXANE	5	UG/L	U	5	5	0.30
TJ0540-1	DCL Leachate	12/08/2016	624	METHYLENE CHLORIDE	10	UG/L	U	10	10	1.1
TJ0540-1	DCL Leachate	12/08/2016	624	O-XYLENE	5	UG/L	U	5	5	0.25
TJ0540-1	DCL Leachate	12/08/2016	624	STYRENE	5	UG/L	U	5	5	0.23
TJ0540-1	DCL Leachate	12/08/2016	624	TETRACHLOROETHENE	5	UG/L	U	5	5	0.40
TJ0540-1	DCL Leachate	12/08/2016	624	TOLUENE	5	UG/L	U	5	5	0.27
TJ0540-1	DCL Leachate	12/08/2016	624	TRANS-1,2-DICHLOROETHENE	5	UG/L	U	5	5	0.25
TJ0540-1	DCL Leachate	12/08/2016	624	TRANS-1,3-DICHLOROPROPENE	5	UG/L	U	5	5	0.20
TJ0540-1	DCL Leachate	12/08/2016	624	TRICHLOROETHENE	5	UG/L	U	5	5	0.28
TJ0540-1	DCL Leachate	12/08/2016	624	TRICHLOROFLUOROMETHANE	5	UG/L	U	5	5	0.24
TJ0540-1	DCL Leachate	12/08/2016	624	VINYL CHLORIDE	5	UG/L	U	5	5	0.25
TJ0540-1	DCL Leachate	12/08/2016	624	XYLENES (TOTAL)	15	UG/L	U	15	15	0.25
TJ0540-1	DCL Leachate	12/08/2016	625	1,2,4-TRICHLOROBENZENE	4.7	UG/L	U	4.7	4.7	1.7
TJ0540-1	DCL Leachate	12/08/2016	625	1,2-DICHLOROBENZENE	4.7	UG/L	U	4.7	4.7	1.7
TJ0540-1	DCL Leachate	12/08/2016	625	1,3-DICHLOROBENZENE	4.7	UG/L	U	4.7	4.7	1.6
TJ0540-1	DCL Leachate	12/08/2016	625	1,4-DICHLOROBENZENE	4.7	UG/L	U	4.7	4.7	1.8
TJ0540-1	DCL Leachate	12/08/2016	625	2,4,6-TRICHLOROPHENOL	4.7	UG/L	U	4.7	4.7	2.4
TJ0540-1	DCL Leachate	12/08/2016	625	2,4-DICHLOROPHENOL	4.7	UG/L	U	4.7	4.7	2.9
TJ0540-1	DCL Leachate	12/08/2016	625	2,4-DIMETHYLPHENOL	4.7	UG/L	U	4.7	4.7	2.5
TJ0540-1	DCL Leachate	12/08/2016	625	2,4-DINITROPHENOL	24	UG/L	U	24	24	17.
TJ0540-1	DCL Leachate	12/08/2016	625	2,4-DINITROTOLUENE	4.7	UG/L	U	4.7	4.7	0.43
TJ0540-1	DCL Leachate	12/08/2016	625	2,6-DINITROTOLUENE	4.7	UG/L	U	4.7	4.7	0.58
TJ0540-1	DCL Leachate	12/08/2016	625	2-CHLORONAPHTHALENE	4.7	UG/L	U	4.7	4.7	1.6
TJ0540-1	DCL Leachate	12/08/2016	625	2-CHLOROPHENOL	4.7	UG/L	U	4.7	4.7	2.2
TJ0540-1	DCL Leachate	12/08/2016	625	2-NITROPHENOL	4.7	UG/L	U	4.7	4.7	2.5
TJ0540-1	DCL Leachate	12/08/2016	625	3,3'-DICHLOROBENZIDINE	4.7	UG/L	U	4.7	4.7	1.7
TJ0540-1	DCL Leachate	12/08/2016	625	4,6-DINITRO-2-METHYLPHENOL	24	UG/L	U	24	24	1.1
TJ0540-1	DCL Leachate	12/08/2016	625	4-BROMOPHENYL PHENYL ETHER	4.7	UG/L	U	4.7	4.7	1.0
TJ0540-1	DCL Leachate	12/08/2016	625	4-CHLORO-3-METHYLPHENOL	4.7	UG/L	U	4.7	4.7	2.1
TJ0540-1	DCL Leachate	12/08/2016	625	4-CHLOROPHENYL PHENYL ETHER	4.7	UG/L	U	4.7	4.7	1.1
TJ0540-1	DCL Leachate	12/08/2016	625	4-NITROPHENOL	19	UG/L	U	19	19	4.3
TJ0540-1	DCL Leachate	12/08/2016	625	ACENAPHTHENE	4.7	UG/L	U	4.7	4.7	1.2
TJ0540-1	DCL Leachate	12/08/2016	625	ACENAPHTHYLENE	4.7	UG/L	U	4.7	4.7	1.0
TJ0540-1	DCL Leachate	12/08/2016	625	ANTHRACENE	4.7	UG/L	U	4.7	4.7	0.71
TJ0540-1	DCL Leachate	12/08/2016	625	BENZIDINE	24	UG/L	U	24	24	11.
TJ0540-1	DCL Leachate	12/08/2016	625	BENZO(A)ANTHRACENE	4.7	UG/L	U	4.7	4.7	0.63
TJ0540-1	DCL Leachate	12/08/2016	625	BENZO(A)PYRENE	4.7	UG/L	U	4.7	4.7	2.0
TJ0540-1	DCL Leachate	12/08/2016	625	BENZO(B)FLUORANTHENE	4.7	UG/L	U	4.7	4.7	2.1
TJ0540-1	DCL Leachate	12/08/2016	625	BENZO(K)FLUORANTHENE	4.7	UG/L	U	4.7	4.7	2.3

DCL Leachate
Fall 2016 Validated Data

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	MDL
TJ0540-1	DCL Leachate	12/08/2016	625	BENZO[G,H,I]PERYLENE	4.7	UG/L	U	4.7	4.7	1.2
TJ0540-1	DCL Leachate	12/08/2016	625	BIS(2-CHLOROETHOXY) METHANE	4.7	UG/L	U	4.7	4.7	0.83
TJ0540-1	DCL Leachate	12/08/2016	625	BIS(2-CHLOROETHYL) ETHER	4.7	UG/L	U	4.7	4.7	0.93
TJ0540-1	DCL Leachate	12/08/2016	625	BIS(2-CHLOROISOPROPYL) ETHER	4.7	UG/L	U	4.7	4.7	1.1
TJ0540-1	DCL Leachate	12/08/2016	625	BIS(2-ETHYLHEXYL) PHTHALATE	4.7	UG/L	U	4.7	4.7	0.53
TJ0540-1	DCL Leachate	12/08/2016	625	BUTYL BENZYL PHTHALATE	4.7	UG/L	U	4.7	4.7	0.51
TJ0540-1	DCL Leachate	12/08/2016	625	CHRYSENE	4.7	UG/L	U	4.7	4.7	0.85
TJ0540-1	DCL Leachate	12/08/2016	625	DIBENZO(A,H)ANTHRACENE	4.7	UG/L	U	4.7	4.7	1.2
TJ0540-1	DCL Leachate	12/08/2016	625	DIETHYL PHTHALATE	4.7	UG/L	U	4.7	4.7	0.71
TJ0540-1	DCL Leachate	12/08/2016	625	DIMETHYL PHTHALATE	4.7	UG/L	U	4.7	4.7	0.85
TJ0540-1	DCL Leachate	12/08/2016	625	DI-N-BUTYL PHTHALATE	4.7	UG/L	U	4.7	4.7	0.72
TJ0540-1	DCL Leachate	12/08/2016	625	DI-N-OCTYLPHTHALATE	4.7	UG/L	U	4.7	4.7	0.63
TJ0540-1	DCL Leachate	12/08/2016	625	FLUORANTHENE	4.7	UG/L	U	4.7	4.7	0.66
TJ0540-1	DCL Leachate	12/08/2016	625	FLUORENE	4.7	UG/L	U	4.7	4.7	0.92
TJ0540-1	DCL Leachate	12/08/2016	625	HEXACHLOROBENZENE	4.7	UG/L	U	4.7	4.7	0.86
TJ0540-1	DCL Leachate	12/08/2016	625	HEXACHLOROBUTADIENE	4.7	UG/L	U	4.7	4.7	1.5
TJ0540-1	DCL Leachate	12/08/2016	625	HEXACHLOROCYCLOPENTADIENE	4.7	UG/L	U	4.7	4.7	0.69
TJ0540-1	DCL Leachate	12/08/2016	625	HEXACHLOROETHANE	4.7	UG/L	U	4.7	4.7	1.6
TJ0540-1	DCL Leachate	12/08/2016	625	INDENO(1,2,3-CD)PYRENE	4.7	UG/L	U	4.7	4.7	1.2
TJ0540-1	DCL Leachate	12/08/2016	625	ISOPHORONE	4.7	UG/L	U	4.7	4.7	0.78
TJ0540-1	DCL Leachate	12/08/2016	625	NAPHTHALENE	4.7	UG/L	U	4.7	4.7	1.7
TJ0540-1	DCL Leachate	12/08/2016	625	NITROBENZENE	4.7	UG/L	U	4.7	4.7	0.98
TJ0540-1	DCL Leachate	12/08/2016	625	N-NITROSODIMETHYLAMINE	4.7	UG/L	U	4.7	4.7	0.99
TJ0540-1	DCL Leachate	12/08/2016	625	N-NITROSO-DI-N-PROPYLAMINE	4.7	UG/L	U	4.7	4.7	0.73
TJ0540-1	DCL Leachate	12/08/2016	625	N-NITROSODIPHENYLAMINE	4.7	UG/L	U	4.7	4.7	0.51
TJ0540-1	DCL Leachate	12/08/2016	625	PENTACHLOROPHENOL	19	UG/L	U	19	19	1.6
TJ0540-1	DCL Leachate	12/08/2016	625	PHENANTHRENE	4.7	UG/L	U	4.7	4.7	2.6
TJ0540-1	DCL Leachate	12/08/2016	625	PHENOL	4.7	UG/L	U	4.7	4.7	1.2
TJ0540-1	DCL Leachate	12/08/2016	625	PYRENE	4.7	UG/L	U	4.7	4.7	0.58

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
U = Non-detect
J = Estimated Result
LOQ = Limit of Quantitation
LOD = Limit of Detection
MDL = Method Detection Limit

Volatile Petroleum Hydrocarbons
MADEP Method VPH-04-1.1
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: 680-130852
Laboratory: Test America-Savannah, GA VPH analyses subcontracted to Katahdin, Scarborough, ME	Date: 11/10/2016
KGS Reviewer: Laurie Ekes	Project: 1024

TAL Lab Sample ID	Katahdin Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Matrix
680-130852-1	SJ8461-1	LFM-99-05A	10/12/2016	MADEP VPH	Groundwater
680-130852-2	SJ8461-2	LFM-99-02B	10/12/2016	MADEP VPH	Groundwater
680-130852-3	SJ8461-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	Groundwater
680-130852-4	SJ8461-4	DUP-01	10/13/2016	MADEP VPH	Groundwater
	SJ8461-5	TRIP BLANK	10/13/2016	MADEP VPH	Trip Blank

Summary – Samples for VPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine. Data validation was performed on the data for three (3) groundwater samples, one (1) field duplicate sample and one (1) trip blank sample submitted for Volatile Petroleum Hydrocarbon (VPH) analyses by MADEP method VPH 04-1.1.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/14/2013 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – All surrogate recoveries were within the control limits specified in the QAPP.

Qualification: None required

Laboratory Control Sample – LCS/LCSD pairs analyzed with these samples met all %R and RPD control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for all target VPHs on sample LFM-99-06ARP (Lab sample ID: SJ8471-3). The %R and RPD results were within

laboratory control limits for all analytes.

Qualification: None required.

Method Blank – Method blanks analyzed with these samples were non-detect for all target VPH compounds.

Qualification: None required.

Trip Blanks – One trip blank sample Trip Blank (Lab Sample ID: SJ8461-5) was submitted with these samples. The TB sample was non-detect for all target VPH.

Qualification: None required.

Field Duplicate – Sample DUP-01 (Lab sample ID: SJ8461-4) was a field duplicate of sample LFM-99-06ARP (Lab sample ID: SJ8461-3). A low level of toluene (0.41J µg/L) was detected in the duplicate sample but was non-detect in the native sample.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VPH results are acceptable as reported and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis or Compound	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
SJ8461-1	LFM-99-05A	MADEP VPH	No qualifications needed.			
SJ8461-2	LFM-99-02B	MADEP VPH	No qualifications needed.			
SJ8461-3	LFM-99-06A-RP	MADEP VPH	No qualifications needed.			
SJ8461-4	DUP-01	MADEP VPH	No qualifications needed.			
SJ8461-5	TRIP BLANK	MADEP VPH	No qualifications needed.			

Extractable Petroleum Hydrocarbons
MADEP Method EPH-04-1.1
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: 680-130852
Laboratory: Test America-Savannah, GA VPH analyses subcontracted to Katahdin, Scarborough, ME	Date: 11/10/2016
KGS Reviewer: Laurie Ekes	Project: 1024

TAL Lab Sample ID	Katahdin Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Matrix
680-130852-1	SJ8461-1	LFM-99-05A	10/12/2016	MADEP EPH	Groundwater
680-130852-2	SJ8461-2	LFM-99-02B	10/12/2016	MADEP EPH	Groundwater
680-130852-3	SJ8461-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	Groundwater
680-130852-4	SJ8461-4	DUP-01	10/13/2016	MADEP EPH	Groundwater

Summary – Samples for EPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine. Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample and submitted for Extractable Petroleum Hydrocarbon (EPH) analyses by MADEP method EPH 04-1.1.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/14/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – Surrogate recoveries were within the control limits specified in the QAPP

Qualification: None required

Laboratory Control Sample – The LCS/LCSD pairs prepared and analyzed with these samples met the %R and RPD control limits for all target EPH compounds.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for all target EPH on sample LFM-99-06ARP (Lab sample ID: SJ8471-3). The %R and RPD results were within the QAPP and laboratory control limits for all analytes.

Qualification: None required.

Method Blank – Method blanks prepared and analyzed with these samples were non-detect for all target EPH compounds.

Qualification: None required.

Field Duplicate – Sample DUP-01 (Lab sample ID: SJ8461-4) was a field duplicate of sample LFM-99-06ARP (Lab sample ID: SJ8461-3). EPH target compounds were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The EPH results are acceptable as reported and the data may be used for its intended purpose.

Client Sample ID	Lab Sample ID	Analysis or Compound	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
SJ8461-1	LFM-99-05A	MADEP VPH	No qualifications needed.			
SJ8461-2	LFM-99-02B	MADEP VPH	No qualifications needed.			
SJ8461-3	LFM-99-06A-RP	MADEP VPH	No qualifications needed.			
SJ8461-4	DUP-01	MADEP VPH	No qualifications needed.			
SJ8461-5	TRIP BLANK	MADEP VPH	No qualifications needed.			

Pesticides
SW846/8081B
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: 680-130852
Laboratory: Test America-Savannah, GA	Date: 11/10/2016
KGS Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-130852-1	LFM-99-05A	10/12/2016	Pesticides	Groundwater
680-130852-2	LFM-99-02B	10/12/2016	Pesticides	Groundwater
680-130852-3	LFM-99-06A-RP	10/13/2016	Pesticides	Groundwater
680-130852-4	DUP-1	10/13/2016	Pesticides	Groundwater

Summary - Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample submitted for Pesticide analyses by EPA method SW846/8081B.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/14/2016 and 6/10/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – Surrogate recoveries were within the control limits specified in the QAPP

Qualification: None required

Laboratory Control Sample – The LCS (680-453474/16A) analyzed with these samples on 10/18/2016 met the %R control limits for all pesticide compounds.

Qualification: None required.

MS/MSD – Sample LFM-99-06ARP (Lab Sample ID: 680-130852-3) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %R results for several pesticide compounds were below control limits. The RPDs were within the laboratory control limits for all analytes.

Qualification: The non-detect results for Aldrin, alpha-BHC, dieldrin, endosulfan I, endrin, gamma-BHC, heptachlor and heptachlor epoxide were qualified as estimated non-detects (UJ).

Method Blank – The method blank (680-453474/15A) prepared and analyzed for pesticides with these samples on 10/18/2016 was non-detect for all pesticide compounds.

Qualification: None required.

Field Duplicate – Sample DUP1 (Lab Sample ID: 680-130852-4) was the field duplicate sample of LFM-99-05A (Lab Sample ID: 680-130852-1). Pesticide compounds were non-detect in both samples.

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "LOD U." Analyte detections below the LOD were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The Pesticide results reported in this SDG are acceptable as reported and may be used for their intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
680-130852-1	LFM-99-05A	Pesticides	No qualifications needed.			
680-130852-2	LFM-99-02B	Pesticides	No qualifications needed.			
680-130852-3	LFM-99-06A-RP	4,4'-DDE	0.01	UJ	0.01	UJ
680-130852-3	LFM-99-06A-RP	Aldrin	0.018	UJ	0.018	UJ
680-130852-3	LFM-99-06A-RP	alpha-BHC	0.01	UJ	0.01	UJ
680-130852-3	LFM-99-06A-RP	Dieldrin	0.01	UJ	0.01	UJ
680-130852-3	LFM-99-06A-RP	Endosulfan I	0.01	UJ	0.01	UJ
680-130852-3	LFM-99-06A-RP	Endrin	0.01	UJ	0.01	UJ
680-130852-3	LFM-99-06A-RP	gamma-BHC (Lindane)	0.01	UJ	0.01	UJ
680-130852-3	LFM-99-06A-RP	Heptachlor	0.018	UJ	0.018	UJ
680-130852-3	LFM-99-06A-RP	Heptachlor epoxide	0.01	UJ	0.01	UJ
680-130852-4	DUP-1	Pesticides	No qualifications needed.			

Total Metals
SW 846/6010C/6020A/7470A
USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: 680-130852
Laboratory: Test America-Savannah, GA	Date: 11/10/2016
KGS Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-130852-1	LFM-99-05A	10/12/2016	Select Metals	Groundwater
680-130852-2	LFM-99-02B	10/12/2016	Select Metals	Groundwater
680-130852-3	LFM-99-06A-RP	10/13/2016	Select Metals	Groundwater
680-130852-4	DUP-1	10/13/2016	Select Metals	Groundwater

Summary – Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample submitted for select total metals analyses for the following analytes: barium, cadmium, chromium, copper, iron, lead, manganese, selenium and silver by method SW6010C; arsenic by method SW6020A and mercury by method SW7470A.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/14/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries (%R) for the all target analytes met the %R control limits established in the QAPP.

Qualification: None required.

MS/MSD – Sample LFM-99-06ARP (Lab Sample ID: 680-130852-3) was spiked and analyzed as matrix spike/matrix spike duplicate samples. The %Rs and calculated RPDs for the spiked analytes were within the QAPP and laboratory control limits.

Qualification: None required.

Method Blank – The method blank (MB454041/1A) associated and analyzed with these samples on 10/21/2016 was non-detect for all analytes.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: 680-130852-4) was the field duplicate of sample LFM-

99-06ARP (Lab sample ID: 680-130852-3). Barium was the only analytes detected in both samples; all other analytes results were non-detect. The FD sample results are summarized in the table below.

		680-130853-3	**680-130852-4**	
		LFM-99-06ARP	**DUP-1**	
Method	Analyte	**Result (µg/L)**	**Result (µg/L)**	**RPD (%)**
6010C	Barium	5.0	4.5	10/5

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "LOD U." Analyte detections below the LOQ were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The results for select total metals reported in this SDG are acceptable as reported and the data may be used for its intended purpose.

Lab Sample ID	**Client Sample ID**	**Analysis**	**Lab Value (µg/L)**	**Lab Qualifier**	**Validated Value (µg/L)**	**Validation Qualifier**
680-130852-1	LFM-99-05A	Select metals	No qualifications needed.			
680-130852-2	LFM-99-02B	Select metals	No qualifications needed.			
680-130852-3	LFM-99-06A-RP	Select metals	No qualifications needed.			
680-130852-4	DUP-1	Select metals	No qualifications needed.			

Wet Chemistry

Total Alkalinity (SM2320B), Chloride and Sulfate (SW9056A) Nitrate/Nitrite (E353.2), Total Cyanide (SW9012B), Total Dissolved Solids (TDS) (SM2540C) and Chemical Oxygen Demand (COD) (E410.4)

USEPA Level II Review

Site: Devens Consolidation Landfill (DCL)	SDG #: 680-130852
Laboratory: Test America-Savannah, GA	Date: 11/10/2016
KGS Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-130852-1	LFM-99-05A	10/12/2016	Miscellaneous Parameters	Groundwater
680-130852-2	LFM-99-02B	10/12/2016	Miscellaneous Parameters	Groundwater
680-130852-3	LFM-99-06A-RP	10/13/2016	Miscellaneous Parameters	Groundwater
680-130852-4	DUP-1	10/13/2016	Miscellaneous Parameters	Groundwater

Summary - Data validation was performed on the data for three (3) groundwater samples and one (1) field duplicate sample submitted for the miscellaneous wet chemistry analyses listed above. The samples submitted for alkalinity, TDS, nitrate/nitrite and COD analyses were shipped to Test America-Denver for analysis. The samples submitted for chloride, sulfate and total cyanide were analyzed at Test America-Savannah.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory on 10/14/2016 in acceptable condition and temperature, and were properly preserved. Proper custody was documented.

Qualification: None required.

Holding Times – All samples were analyzed within the respective holding times required by the QAPP for preserved aqueous samples.

Qualification: None required.

Method Blank – A low level of alkalinity (2.57 mg/L) was reported in the MB analyzed with these samples. Sample results for alkalinity were greater than 10 times the blank levels; qualifications were not needed. The method blanks for all other parameters were free from contamination.

Qualification: None required.

Laboratory Control Sample – The LCS and/or LCSD %R results for all methods associated with these samples met the control limits established by the QAPP.

Qualification: None required.

MS/Duplicate – Sample LFM-99-06ARP (Lab Sample ID: 680-130852-3) was spiked and

analyzed as matrix spike/duplicate samples. The %R and RPD results were within the laboratory control limits for all analytes.

Qualification: None required.

Field Duplicate – Sample DUP-1 (Lab sample ID: 680-130852-4) was a field duplicate of sample LFM-99-06ARP (Lab sample ID: 680-130852-3). The results for COD and total cyanide were non-detect. Detected results for TDS, nitrate/nitrite, chloride, sulfate and alkalinity were comparable. FD results are summarized below.

	LFM-99-06A-RP	**DUP-1**	
	680-130852-3	**680-130852-4**	
Analyte	**Result (mg/L)**	**Result (mg/L)**	**RPD (%)**
Nitrate/Nitrite-N	1.1	1.1	0
Chloride	300	300	0
Sulfate	31	31	0
Alkalinity	120	120	0
TDS	690	660	4.4

Qualification: None required.

Compound Quantitation – The results for chloride were reported from 10X dilutions. Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "LOD U." Analyte detections below the LOQ were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table: The results for the miscellaneous parameters reported in this are acceptable as reported and the data may be used for its intended purpose.

Lab Sample ID	**Client Sample ID**	**Analysis**	**Lab Value (µg/L)**	**Lab Qualifier**	**Validated Value (µg/L)**	**Validation Qualifier**
680-130852-1	LFM-99-05A	Miscellaneous Parameters	No qualifications needed.			
680-130852-2	LFM-99-02B	Miscellaneous Parameters	No qualifications needed.			
680-130852-3	LFM-99-06A-RP	Miscellaneous Parameters	No qualifications needed.			
680-130852-4	DUP-1	Miscellaneous Parameters	No qualifications needed.			

DCL LTM Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-1	LFM-99-05A	10/12/2016	353.2		Nitrate/Nitrite-N	**3.8**	mg/L		0.1	0.05	0.019	1	
680-130852-1	LFM-99-05A	10/12/2016	410.4		Chemical Oxygen Demand	10	mg/L	U	20	10	4.1	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7440-39-3	Barium	**21**	ug/L		10	5	1.7	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7440-43-9	Cadmium	3.0	ug/L	U	5.0	3.0	1.0	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7440-47-3	Chromium	4.0	ug/L	U	10	4	1.6	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7440-50-8	Copper	5.0	ug/L	U	20	5	1.8	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7439-89-6	Iron	**94**	ug/L		50	50	17	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7439-96-5	Manganese	**5.1**	ug/L	J	10	3	1	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130852-1	LFM-99-05A	10/12/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130852-1	LFM-99-05A	10/12/2016	6020A	7440-38-2	Arsenic	3.0	ug/L	U	3	3	1.5	1	
680-130852-1	LFM-99-05A	10/12/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	72-54-8	4,4'-DDD	0.011	ug/L	U	0.053	0.011	0.007	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	72-55-9	4,4'-DDE	0.011	ug/L	U	0.053	0.011	0.005	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	50-29-3	4,4'-DDT	0.019	ug/L	U	0.053	0.019	0.008	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	309-00-2	Aldrin	0.019	ug/L	U	0.053	0.019	0.008	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	319-84-6	alpha-BHC	0.011	ug/L	U	0.053	0.011	0.004	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	319-85-7	beta-BHC	0.019	ug/L	U	0.053	0.019	0.01	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	57-74-9	Chlordane (technical)	0.32	ug/L	U	0.53	0.32	0.1	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	319-86-8	delta-BHC	0.019	ug/L	U	0.053	0.019	0.008	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	60-57-1	Dieldrin	0.011	ug/L	U	0.053	0.011	0.004	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	959-98-8	Endosulfan I	0.011	ug/L	U	0.053	0.011	0.004	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	33213-65-9	Endosulfan II	0.011	ug/L	U	0.053	0.011	0.005	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	1031-07-8	Endosulfan sulfate	0.011	ug/L	U	0.053	0.011	0.005	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	72-20-8	Endrin	0.011	ug/L	U	0.053	0.011	0.006	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	7421-93-4	Endrin aldehyde	0.011	ug/L	U	0.053	0.011	0.007	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	53494-70-5	Endrin ketone	0.011	ug/L	U	0.053	0.011	0.005	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	58-89-9	gamma-BHC (Lindane)	0.011	ug/L	U	0.053	0.011	0.004	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	76-44-8	Heptachlor	0.019	ug/L	U	0.053	0.019	0.008	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	1024-57-3	Heptachlor epoxide	0.011	ug/L	U	0.053	0.011	0.004	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	72-43-5	Methoxychlor	0.019	ug/L	U	0.053	0.019	0.01	1	
680-130852-1	LFM-99-05A	10/12/2016	8081B 8082A	8001-35-2	Toxaphene	0.85	ug/L	U	5.3	0.85	0.43	1	
680-130852-1	LFM-99-05A	10/12/2016	9012B	57-12-5	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.003	1	
680-130852-1	LFM-99-05A	10/12/2016	9056A	16887-00-6	Chloride	**260**	mg/L		5.0	5.0	2.0	10	
680-130852-1	LFM-99-05A	10/12/2016	9056A	14808-79-8	Sulfate	**23**	mg/L		1.0	1.0	0.4	1	
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	91-57-6	2-METHYLNAPHTHALENE	2.2	ug/L	U	2.2	2.2	0.86	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	83-32-9	ACENAPHTHENE	2.2	ug/L	U	2.2	2.2	1.9	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	208-96-8	ACENAPHTHYLENE	2.2	ug/L	U	2.2	2.2	0.86	1	SJ8461-1

DCL LTM Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	120-12-7	ANTHRACENE	2.2	ug/L	U	2.2	2.2	1.5	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	56-55-3	BENZO(A)ANTHRACENE	2.2	ug/L	U	2.2	2.2	1.5	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	50-32-8	BENZO(A)PYRENE	2.2	ug/L	U	2.2	2.2	1.4	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	205-99-2	BENZO(B)FLUORANTHENE	2.2	ug/L	U	2.2	2.2	0.86	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	207-08-9	BENZO(K)FLUORANTHENE	2.2	ug/L	U	2.2	2.2	1.1	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	191-24-2	BENZO[G,H,I]PERYLENE	2.2	ug/L	U	2.2	2.2	1.4	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	NED433	C11-C22 AROMATICS	110	ug/L	U	110	110	54	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	NED434	C19-C36 ALIPHATICS	110	ug/L	U	110	110	54	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	NED435	C9-C18 ALIPHATICS	110	ug/L	U	110	110	54	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	218-01-9	CHRYSENE	2.2	ug/L	U	2.2	2.2	0.97	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	53-70-3	DIBENZO(A,H)ANTHRACENE	2.2	ug/L	U	2.2	2.2	1.3	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	206-44-0	FLUORANTHENE	2.2	ug/L	U	2.2	2.2	0.86	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	86-73-7	FLUORENE	2.2	ug/L	U	2.2	2.2	0.97	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	193-39-5	INDENO(1,2,3-CD)PYRENE	2.2	ug/L	U	2.2	2.2	1.5	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	91-20-3	NAPHTHALENE	**3.2**	ug/L		2.2	2.2	0.97	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	85-01-8	PHENANTHRENE	2.2	ug/L	U	2.2	2.2	0.97	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	129-00-0	PYRENE	2.2	ug/L	U	2.2	2.2	1.2	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP EPH	NED436	UNADJUSTED C11-C22 AROMATICS	110	ug/L	U	110	110	54	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	71-43-2	BENZENE	3.0	ug/L	U	3.0	3.0	0.31	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH		C5-C8 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH		C9-C10 AROMATICS	100	ug/L	U	100	100	50	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH		C9-C12 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	ug/L	U	5.0	5.0	0.42	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	ug/L	U	10	10	0.92	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	ug/L	U	5.0	5.0	0.31	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	ug/L	U	5.0	5.0	1.6	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	ug/L	U	5.0	5.0	0.47	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	MADEP VPH	108-88-3	TOLUENE	**1.0**	ug/L	J	5.0	5.0	0.34	1	SJ8461-1
680-130852-1	LFM-99-05A	10/12/2016	SM 2320B		Alkalinity	**87**	mg/L		5.0	3.2	1.1	1	
680-130852-1	LFM-99-05A	10/12/2016	SM 2540C		Total Dissolved Solids (TDS)	**560**	mg/L		10	10	4.7	1	
680-130852-2	LFM-99-02B	10/12/2016	353.2		Nitrate/Nitrite-N	**0.81**	mg/L		0.1	0.05	0.019	1	
680-130852-2	LFM-99-02B	10/12/2016	410.4		Chemical Oxygen Demand	**5.0**	mg/L	J	20	10	4.1	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7440-39-3	Barium	**15**	ug/L		10	5	1.7	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7440-43-9	Cadmium	3.0	ug/L	U	5.0	3.0	1.0	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7440-47-3	Chromium	**6.0**	ug/L	J	10	4	1.6	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7440-50-8	Copper	5.0	ug/L	U	20	5	1.8	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7439-89-6	Iron	**27**	ug/L	J	50	50	17	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7439-96-5	Manganese	**2.0**	ug/L	J	10	3	1	1	

DCL LTM Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-2	LFM-99-02B	10/12/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130852-2	LFM-99-02B	10/12/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130852-2	LFM-99-02B	10/12/2016	6020A	7440-38-2	Arsenic	3.0	ug/L	U	3	3	1.5	1	
680-130852-2	LFM-99-02B	10/12/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	72-54-8	4,4'-DDD	0.01	ug/L	U	0.052	0.01	0.007	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	72-55-9	4,4'-DDE	0.01	ug/L	U	0.052	0.01	0.005	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	50-29-3	4,4'-DDT	0.019	ug/L	U	0.052	0.019	0.007	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	309-00-2	Aldrin	0.019	ug/L	U	0.052	0.019	0.007	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	319-84-6	alpha-BHC	0.01	ug/L	U	0.052	0.01	0.004	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	319-85-7	beta-BHC	0.019	ug/L	U	0.052	0.019	0.009	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	57-74-9	Chlordane (technical)	0.31	ug/L	U	0.52	0.31	0.098	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	319-86-8	delta-BHC	0.019	ug/L	U	0.052	0.019	0.008	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	60-57-1	Dieldrin	0.01	ug/L	U	0.052	0.01	0.004	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	959-98-8	Endosulfan I	0.01	ug/L	U	0.052	0.01	0.004	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	33213-65-9	Endosulfan II	0.01	ug/L	U	0.052	0.01	0.004	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	1031-07-8	Endosulfan sulfate	0.01	ug/L	U	0.052	0.01	0.005	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	72-20-8	Endrin	0.01	ug/L	U	0.052	0.01	0.006	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	7421-93-4	Endrin aldehyde	0.01	ug/L	U	0.052	0.01	0.006	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	53494-70-5	Endrin ketone	0.01	ug/L	U	0.052	0.01	0.005	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	58-89-9	gamma-BHC (Lindane)	0.01	ug/L	U	0.052	0.01	0.004	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	76-44-8	Heptachlor	0.019	ug/L	U	0.052	0.019	0.007	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	1024-57-3	Heptachlor epoxide	0.01	ug/L	U	0.052	0.01	0.004	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	72-43-5	Methoxychlor	0.019	ug/L	U	0.052	0.019	0.01	1	
680-130852-2	LFM-99-02B	10/12/2016	8081B 8082A	8001-35-2	Toxaphene	0.83	ug/L	U	5.2	0.83	0.41	1	
680-130852-2	LFM-99-02B	10/12/2016	9012B	57-12-5	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.003	1	
680-130852-2	LFM-99-02B	10/12/2016	9056A	16887-00-6	Chloride	**360**	mg/L		5.0	5.0	2.0	10	
680-130852-2	LFM-99-02B	10/12/2016	9056A	14808-79-8	Sulfate	**25**	mg/L		1.0	1.0	0.4	1	
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	91-57-6	2-METHYLNAPHTHALENE	2.3	ug/L	U	2.3	2.3	0.91	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	83-32-9	ACENAPHTHENE	2.3	ug/L	U	2.3	2.3	2	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	208-96-8	ACENAPHTHYLENE	2.3	ug/L	U	2.3	2.3	0.91	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	120-12-7	ANTHRACENE	2.3	ug/L	U	2.3	2.3	1.6	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	56-55-3	BENZO(A)ANTHRACENE	2.3	ug/L	U	2.3	2.3	1.6	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	50-32-8	BENZO(A)PYRENE	2.3	ug/L	U	2.3	2.3	1.5	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	205-99-2	BENZO(B)FLUORANTHENE	2.3	ug/L	U	2.3	2.3	0.91	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	207-08-9	BENZO(K)FLUORANTHENE	2.3	ug/L	U	2.3	2.3	1.1	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	191-24-2	BENZO[G,H,I]PERYLENE	2.3	ug/L	U	2.3	2.3	1.5	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	NED433	C11-C22 AROMATICS	110	ug/L	U	110	110	57	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	NED434	C19-C36 ALIPHATICS	110	ug/L	U	110	110	57	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	NED435	C9-C18 ALIPHATICS	110	ug/L	U	110	110	57	1	SJ8461-2

DCL LTM Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	218-01-9	CHRYSENE	2.3	ug/L	U	2.3	2.3	1	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	53-70-3	DIBENZO(A,H)ANTHRACENE	2.3	ug/L	U	2.3	2.3	1.4	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	206-44-0	FLUORANTHENE	2.3	ug/L	U	2.3	2.3	0.91	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	86-73-7	FLUORENE	2.3	ug/L	U	2.3	2.3	1	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	193-39-5	INDENO(1,2,3-CD)PYRENE	2.3	ug/L	U	2.3	2.3	1.6	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	91-20-3	NAPHTHALENE	2.3	ug/L	U	2.3	2.3	1	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	85-01-8	PHENANTHRENE	2.3	ug/L	U	2.3	2.3	1	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	129-00-0	PYRENE	2.3	ug/L	U	2.3	2.3	1.2	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP EPH	NED436	UNADJUSTED C11-C22 AROMATICS	110	ug/L	U	110	110	57	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	71-43-2	BENZENE	3.0	ug/L	U	3.0	3.0	0.31	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH		C5-C8 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH		C9-C10 AROMATICS	100	ug/L	U	100	100	50	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH		C9-C12 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	ug/L	U	5.0	5.0	0.42	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	ug/L	U	10	10	0.92	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	ug/L	U	5.0	5.0	0.31	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	ug/L	U	5.0	5.0	1.6	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	ug/L	U	5.0	5.0	0.47	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	MADEP VPH	108-88-3	TOLUENE	**0.40**	ug/L	J	5.0	5.0	0.34	1	SJ8461-2
680-130852-2	LFM-99-02B	10/12/2016	SM 2320B		Alkalinity	**110**	mg/L		5.0	3.2	1.1	1	
680-130852-2	LFM-99-02B	10/12/2016	SM 2540C		Total Dissolved Solids (TDS)	**730**	mg/L		10	10	4.7	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	353.2		Nitrate/Nitrite-N	**1.1**	mg/L		0.1	0.05	0.019	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	410.4		Chemical Oxygen Demand	10	mg/L	U	20	10	4.1	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7440-39-3	Barium	**5.0**	ug/L	J	10	5	1.7	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7440-43-9	Cadmium	3.0	ug/L	U	5.0	3.0	1.0	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7440-47-3	Chromium	4.0	ug/L	U	10	4	1.6	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7440-50-8	Copper	5.0	ug/L	U	20	5	1.8	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7439-89-6	Iron	50	ug/L	U	50	50	17	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7439-96-5	Manganese	3.0	ug/L	U	10	3	1	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	6020A	7440-38-2	Arsenic	3.0	ug/L	U	3	3	1.5	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	72-54-8	4,4'-DDD	0.01	ug/L	U	0.051	0.01	0.006	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	72-55-9	4,4'-DDE	0.01	ug/L	UJ	0.051	0.01	0.005	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	50-29-3	4,4'-DDT	0.018	ug/L	U	0.051	0.018	0.007	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	309-00-2	Aldrin	0.018	ug/L	UJ	0.051	0.018	0.007	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	319-84-6	alpha-BHC	0.01	ug/L	UJ	0.051	0.01	0.004	1	

DCL LTM Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	319-85-7	beta-BHC	0.018	ug/L	U	0.051	0.018	0.009	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	57-74-9	Chlordane (technical)	0.3	ug/L	U	0.51	0.3	0.096	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	319-86-8	delta-BHC	0.018	ug/L	U	0.051	0.018	0.008	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	60-57-1	Dieldrin	0.01	ug/L	UJ	0.051	0.01	0.004	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	959-98-8	Endosulfan I	0.01	ug/L	UJ	0.051	0.01	0.004	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	33213-65-9	Endosulfan II	0.01	ug/L	U	0.051	0.01	0.004	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	1031-07-8	Endosulfan sulfate	0.01	ug/L	U	0.051	0.01	0.005	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	72-20-8	Endrin	0.01	ug/L	UJ	0.051	0.01	0.005	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	7421-93-4	Endrin aldehyde	0.01	ug/L	U	0.051	0.01	0.006	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	53494-70-5	Endrin ketone	0.01	ug/L	U	0.051	0.01	0.005	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	58-89-9	gamma-BHC (Lindane)	0.01	ug/L	UJ	0.051	0.01	0.004	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	76-44-8	Heptachlor	0.018	ug/L	UJ	0.051	0.018	0.007	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	1024-57-3	Heptachlor epoxide	0.01	ug/L	UJ	0.051	0.01	0.004	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	72-43-5	Methoxychlor	0.018	ug/L	U	0.051	0.018	0.01	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	8081B 8082A	8001-35-2	Toxaphene	0.81	ug/L	U	5.1	0.81	0.41	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	9012B	57-12-5	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.003	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	9056A	16887-00-6	Chloride	**300**	mg/L		13	13	5	25	
680-130852-3	LFM-99-06A-RP	10/13/2016	9056A	14808-79-8	Sulfate	**31**	mg/L		1.0	1.0	0.4	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	91-57-6	2-METHYLNAPHTHALENE	2.0	ug/L	U	2.0	2.0	0.82	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	83-32-9	ACENAPHTHENE	2.0	ug/L	U	2.0	2.0	1.8	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	208-96-8	ACENAPHTHYLENE	2.0	ug/L	U	2.0	2.0	0.82	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	120-12-7	ANTHRACENE	2.0	ug/L	U	2.0	2.0	1.4	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	56-55-3	BENZO(A)ANTHRACENE	2.0	ug/L	U	2.0	2.0	1.4	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	50-32-8	BENZO(A)PYRENE	2.0	ug/L	U	2.0	2.0	1.3	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	205-99-2	BENZO(B)FLUORANTHENE	2.0	ug/L	U	2.0	2.0	0.82	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	207-08-9	BENZO(K)FLUORANTHENE	2.0	ug/L	U	2.0	2.0	1	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	191-24-2	BENZO[G,H,I]PERYLENE	2.0	ug/L	U	2.0	2.0	1.3	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	NED433	C11-C22 AROMATICS	100	ug/L	U	100	100	51	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	NED434	C19-C36 ALIPHATICS	100	ug/L	U	100	100	51	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	NED435	C9-C18 ALIPHATICS	100	ug/L	U	100	100	51	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	218-01-9	CHRYSENE	2.0	ug/L	U	2.0	2.0	0.92	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	53-70-3	DIBENZO(A,H)ANTHRACENE	2.0	ug/L	U	2.0	2.0	1.2	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	206-44-0	FLUORANTHENE	2.0	ug/L	U	2.0	2.0	0.82	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	86-73-7	FLUORENE	2.0	ug/L	U	2.0	2.0	0.92	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	193-39-5	INDENO(1,2,3-CD)PYRENE	2.0	ug/L	U	2.0	2.0	1.4	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	91-20-3	NAPHTHALENE	2.0	ug/L	U	2.0	2.0	0.92	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	85-01-8	PHENANTHRENE	2.0	ug/L	U	2.0	2.0	0.92	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	129-00-0	PYRENE	2.0	ug/L	U	2.0	2.0	1.1	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP EPH	NED436	UNADJUSTED C11-C22 AROMATICS	100	ug/L	U	100	100	51	1	SJ8461-3

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	71-43-2	BENZENE	3.0	ug/L	U	3.0	3.0	0.31	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH		C5-C8 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH		C9-C10 AROMATICS	100	ug/L	U	100	100	50	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH		C9-C12 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	ug/L	U	5.0	5.0	0.42	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	ug/L	U	10	10	0.92	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	ug/L	U	5.0	5.0	0.31	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	ug/L	U	5.0	5.0	1.6	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	ug/L	U	5.0	5.0	0.47	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	MADEP VPH	108-88-3	TOLUENE	5.0	ug/L	U	5.0	5.0	0.34	1	SJ8461-3
680-130852-3	LFM-99-06A-RP	10/13/2016	SM 2320B		Alkalinity	**120**	mg/L		5.0	3.2	1.1	1	
680-130852-3	LFM-99-06A-RP	10/13/2016	SM 2540C		Total Dissolved Solids (TDS)	**690**	mg/L		10	10	4.7	1	
680-130852-4	DUP-1	10/13/2016	353.2		Nitrate/Nitrite-N	**1.1**	mg/L		0.1	0.05	0.019	1	
680-130852-4	DUP-1	10/13/2016	410.4		Chemical Oxygen Demand	**5.4**	mg/L	J	20	10	4.1	1	
680-130852-4	DUP-1	10/13/2016	6010C	7440-39-3	Barium	**4.5**	ug/L	J	10	5	1.7	1	
680-130852-4	DUP-1	10/13/2016	6010C	7440-43-9	Cadmium	3.0	ug/L	U	5.0	3.0	1.0	1	
680-130852-4	DUP-1	10/13/2016	6010C	7440-47-3	Chromium	4.0	ug/L	U	10	4	1.6	1	
680-130852-4	DUP-1	10/13/2016	6010C	7440-50-8	Copper	5.0	ug/L	U	20	5	1.8	1	
680-130852-4	DUP-1	10/13/2016	6010C	7439-89-6	Iron	50	ug/L	U	50	50	17	1	
680-130852-4	DUP-1	10/13/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130852-4	DUP-1	10/13/2016	6010C	7439-96-5	Manganese	3.0	ug/L	U	10	3	1	1	
680-130852-4	DUP-1	10/13/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130852-4	DUP-1	10/13/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130852-4	DUP-1	10/13/2016	6020A	7440-38-2	Arsenic	3.0	ug/L	U	3	3	1.5	1	
680-130852-4	DUP-1	10/13/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	72-54-8	4,4'-DDD	0.01	ug/L	U	0.051	0.01	0.006	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	72-55-9	4,4'-DDE	0.01	ug/L	U	0.051	0.01	0.005	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	50-29-3	4,4'-DDT	0.018	ug/L	U	0.051	0.018	0.007	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	309-00-2	Aldrin	0.018	ug/L	U	0.051	0.018	0.007	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	319-84-6	alpha-BHC	0.01	ug/L	U	0.051	0.01	0.003	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	319-85-7	beta-BHC	0.018	ug/L	U	0.051	0.018	0.009	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	57-74-9	Chlordane (technical)	0.3	ug/L	U	0.51	0.3	0.096	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	319-86-8	delta-BHC	0.018	ug/L	U	0.051	0.018	0.008	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	60-57-1	Dieldrin	0.01	ug/L	U	0.051	0.01	0.004	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	959-98-8	Endosulfan I	0.01	ug/L	U	0.051	0.01	0.004	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	33213-65-9	Endosulfan II	0.01	ug/L	U	0.051	0.01	0.004	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	1031-07-8	Endosulfan sulfate	0.01	ug/L	U	0.051	0.01	0.005	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	72-20-8	Endrin	0.01	ug/L	U	0.051	0.01	0.005	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	7421-93-4	Endrin aldehyde	0.01	ug/L	U	0.051	0.01	0.006	1	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-4	DUP-1	10/13/2016	8081B 8082A	53494-70-5	Endrin ketone	0.01	ug/L	U	0.051	0.01	0.005	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	58-89-9	gamma-BHC (Lindane)	0.01	ug/L	U	0.051	0.01	0.004	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	76-44-8	Heptachlor	0.018	ug/L	U	0.051	0.018	0.007	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	1024-57-3	Heptachlor epoxide	0.01	ug/L	U	0.051	0.01	0.004	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	72-43-5	Methoxychlor	0.018	ug/L	U	0.051	0.018	0.01	1	
680-130852-4	DUP-1	10/13/2016	8081B 8082A	8001-35-2	Toxaphene	0.81	ug/L	U	5.1	0.81	0.41	1	
680-130852-4	DUP-1	10/13/2016	9012B	57-12-5	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.003	1	
680-130852-4	DUP-1	10/13/2016	9056A	16887-00-6	Chloride	**300**	mg/L		5.0	5.0	2.0	10	
680-130852-4	DUP-1	10/13/2016	9056A	14808-79-8	Sulfate	**31**	mg/L		1.0	1.0	0.4	1	
680-130852-4	DUP-1	10/13/2016	MADEP EPH	91-57-6	2-METHYLNAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	83-32-9	ACENAPHTHENE	2.1	ug/L	U	2.1	2.1	1.9	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	208-96-8	ACENAPHTHYLENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	120-12-7	ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	56-55-3	BENZO(A)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	50-32-8	BENZO(A)PYRENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	205-99-2	BENZO(B)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	207-08-9	BENZO(K)FLUORANTHENE	2.1	ug/L	U	2.1	2.1	1	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	191-24-2	BENZO[G,H,I]PERYLENE	2.1	ug/L	U	2.1	2.1	1.4	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	NED433	C11-C22 AROMATICS	100	ug/L	U	100	100	53	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	NED434	C19-C36 ALIPHATICS	100	ug/L	U	100	100	53	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	NED435	C9-C18 ALIPHATICS	100	ug/L	U	100	100	53	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	218-01-9	CHRYSENE	2.1	ug/L	U	2.1	2.1	0.95	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	53-70-3	DIBENZO(A,H)ANTHRACENE	2.1	ug/L	U	2.1	2.1	1.3	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	206-44-0	FLUORANTHENE	2.1	ug/L	U	2.1	2.1	0.84	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	86-73-7	FLUORENE	2.1	ug/L	U	2.1	2.1	0.95	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	193-39-5	INDENO(1,2,3-CD)PYRENE	2.1	ug/L	U	2.1	2.1	1.5	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	91-20-3	NAPHTHALENE	2.1	ug/L	U	2.1	2.1	0.95	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	85-01-8	PHENANTHRENE	2.1	ug/L	U	2.1	2.1	0.95	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	129-00-0	PYRENE	2.1	ug/L	U	2.1	2.1	1.2	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP EPH	NED436	UNADJUSTED C11-C22 AROMATICS	100	ug/L	U	100	100	53	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH	71-43-2	BENZENE	3.0	ug/L	U	3.0	3.0	0.31	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH		C5-C8 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH		C9-C10 AROMATICS	100	ug/L	U	100	100	50	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH		C9-C12 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	ug/L	U	5.0	5.0	0.42	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	ug/L	U	10	10	0.92	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	ug/L	U	5.0	5.0	0.31	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	ug/L	U	5.0	5.0	1.6	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	ug/L	U	5.0	5.0	0.47	1	SJ8461-4

DCL LTM Fall 2016 Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130852-4	DUP-1	10/13/2016	MADEP VPH	108-88-3	TOLUENE	**0.41**	ug/L	J	5.0	5.0	0.34	1	SJ8461-4
680-130852-4	DUP-1	10/13/2016	SM 2320B		Alkalinity	**120**	mg/L		5.0	3.2	1.1	1	
680-130852-4	DUP-1	10/13/2016	SM 2540C		Total Dissolved Solids (TDS)	**660**	mg/L		10	10	4.7	1	
	TRIP BLANK	10/13/2016	MADEP VPH	71-43-2	BENZENE	3.0	ug/L	U	3.0	3.0	0.31	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH		C5-C8 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH		C9-C10 AROMATICS	100	ug/L	U	100	100	50	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH		C9-C12 ALIPHATICS	100	ug/L	U	100	100	50	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	ug/L	U	5.0	5.0	0.42	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	ug/L	U	10	10	0.92	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	ug/L	U	5.0	5.0	0.31	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	ug/L	U	5.0	5.0	1.6	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	ug/L	U	5.0	5.0	0.47	1	SJ8461-5
	TRIP BLANK	10/13/2016	MADEP VPH	108-88-3	TOLUENE	5.0	ug/L	U	5.0	5.0	0.34	1	SJ8461-5

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
U = non-detect
UJ = Estiamted non-detect
J = Estimated result
LOQ = Limit of quantitation
LOD = Limit of Detection
MDL = Method Detection Limit

Volatile Petroleum Hydrocarbons
MADEP Method VPH-04-1.1
USEPA Level II Review

Site: AOC43G	SDG #: 680-130949
Laboratory: Test America-Savannah, GA VPH analyses subcontracted to Katahdin, Scarborough, ME	Date: 11/11/2016
KGS Reviewer: Laurie Ekes	Project: 1024

TAL Lab Sample ID	Katahdin Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Matrix
680-130949-1	SJ8563-1	AAFES-2	10/14/2016	VPH	Groundwater
680-130949-2	SJ8563-2	XGM-94-04X	10/14/2016	VPH	Groundwater
680-130949-3	SJ8563-3	XGM-93-02X	10/17/2016	VPH	Groundwater
680-130949-4	SJ8563-4	XGM-97-12X	10/17/2016	VPH	Groundwater
680-130949-6	SJ8563-5	43G-DUP1	10/17/2016	VPH	Groundwater
	SJ8563-6	TRIP BLANK	10/17/2016	VPH	Trip Blank

Summary – Samples for VPH analysis were subcontracted by Test America to Katahdin Analytical Services in Scarborough, Maine and reported under Katahdin SDG SJ8563. Data validation was performed on the data for four (4) groundwater samples, one (1) field duplicate sample and one (1) trip blank sample submitted for Volatile Petroleum Hydrocarbon (VPH) analyses by MADEP method VPH 04-1.1.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/18/2013 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Surrogates – All surrogate recoveries were within the control limits specified in the QAPP.

Qualification: None required

Laboratory Control Sample – LCS/LCSD pairs analyzed with these samples met all %R and RPD control limits established in the QAPP.

Qualification: None required.

MS/MSD – Matrix spike/matrix spike duplicate analyses were performed for all target VPHs on sample XGM-94-04X (Lab sample ID: SJ8563-2). The %Rs for the VPH ranges, C9-C12 aliphatics and C9-C10 aromatics were above control limit. These non-compliances are likely due to matrix interferences. The %Rs for the remaining VPH were within control limits. All RPD results were within laboratory control limits.

Qualification: None required.

Method Blank – Method blanks analyzed with these samples were non-detect for all target VPH compounds.

Qualification: None required.

Trip Blanks – One trip blank sample, Trip Blank (Lab Sample ID: SJ8563-6), was submitted with these samples. The TB sample was non-detect for all target VPH.

Qualification: None required.

Field Duplicate – Sample 43G-DUP-01 (Lab sample ID: SJ8563-5) was a field duplicate of sample XGM-97-12X (Lab sample ID: SJ8563-4). The results for the detected VPH compounds were comparable between the FD pair. The FD sample results are summarized in the table below.

	SJ8563-4	**SJ8563-5**	
	XGM-97-12X	**43G-DUP1**	
ANALYTE	**Result (µg/L)**	**Result (µg/L)**	**RPD (%)**
C5-C8 ALIPHATICS	420	420	0
C9-C10 AROMATICS	340	370	8.5
C9-C12 ALIPHATICS	230	220	4.4
ETHYLBENZENE	23	23	0
NAPHTHALENE	2.6J	2.6J	0

Qualification: None required.

Compound Quantitation – Four samples required reanalysis at dilutions due to high levels of C9-C10 aromatic VPH. Both the diluted and undiluted results were reported for these samples. Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The VPH results are acceptable as reported and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis or Compound	Lab Value	Lab Qualifier	Validated Value	Validation Qualifier
SJ8563-1	AAFES-2	VPH	No qualifications needed.			
SJ8563-2	XGM-94-04X	VPH	No qualifications needed.			
SJ8563-3	XGM-93-02X	VPH	No qualifications needed.			
SJ8563-4	XGM-97-12X	VPH	No qualifications needed.			
SJ8563-5	43G-DUP1	VPH	No qualifications needed.			
SJ8563-6	TRIP BLANK	VPH	No qualifications needed.			

Total Metals and Alkalinity
SW 846/6010C/6020A/7470A and SM2320B
USEPA Level II Review

Site: AOC 43G	SDG #: 680-130949
Laboratory: Test America-Savannah, GA	Date: 11/9/2016
KGS Reviewer: Laurie Ekes	Project: 1024

Client Sample ID	Lab Sample ID	Date Sampled	Analysis	Matrix
680-130949-1	AAFES-2	10/14/2016	Total Metals, Alkalinity	Groundwater
680-130949-2	XGM-94-04X	10/14/2016	Total Metals, Alkalinity	Groundwater
680-130949-3	XGM-93-02X	10/17/2016	Total Metals, Alkalinity	Groundwater
680-130949-4	XGM-97-12X	10/17/2016	Total Metals, Alkalinity	Groundwater
680-130949-5	AAFES-7	10/17/2016	Total Metals Only	Groundwater
680-130949-6	43G-DUP1	10/17/2016	Total Metals, Alkalinity	Groundwater

Summary – Data validation was performed on the data for a total of five (5) groundwater and one (1) field duplicate sample collected and submitted for total metals and alkalinity. Samples were submitted for full Target Analyte Metals (TAL) analyses following the recommendations of the February 2015 LTMMP.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 10/18/2016 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

Qualification: None required

Holding Times – All samples were analyzed within the 6-month holding time required by the QAPP for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries (%R) for the all target analytes met the %R control limits established in the QAPP.

Qualification: None required.

MS/MSD – Sample XGM-94-04X (Lab Sample ID: 680-130949-2) was spiked and analyzed as matrix spike/matrix spike duplicate samples for TAL metals. The sample results for sodium and calcium were greater than four (4) times the spike values. The MS/MSD %Rs for aluminum, iron, magnesium and manganese were below control limits. The %Rs and calculated RPDs for all other spiked analytes were within the QAPP and laboratory control limits.

Qualification: The results for aluminum, iron, magnesium and manganese in sample XGM-94-04X were qualified as estimated (J).

Method Blank – The method blanks associated and analyzed with these samples were non-detect for all TAL metals. Low levels of alkalinity (1.22 and 2.61 mg/L) were reported in methods blanks; the results

for alkalinity in all AOC43G samples were greater than ten (10) times these blank levels.

Qualification: None required.

Field Duplicate – Sample 43G-DUP-1 (Lab sample ID: 680-130949-6) was the field duplicate of sample XGM-97-12X (Lab sample ID: 680-130949-4). The FD sample results are summarized in the table below. Calculated RPDs were all less than 10% for all detected analytes except for aluminum. The calculated RPD for aluminum was 133%.

		680-130949-4	**680-130949-6**	
		XGM-97-12X	**43G-DUP1**	
Method	Analyte	**Result (µg/L)**	**Result (µg/L)**	**RPD (%)**
6010C	Aluminum	46	230	**133.3**
6010C	Barium	55	54	1.83
6010C	Calcium	120,000	110,000	8.70
6010C	Chromium	2.7	2.7	0
6010C	Cobalt	7.2	7.6	5.40
6010C	Iron	25,000	25,000	0
6010C	Magnesium	16,000	16,000	0
6010C	Manganese	1,700	1,600	6.06
6010C	Nickel	15	16	6.45
6010C	Potassium	6,200	5,900	4.96
6010C	Sodium	250,000	240,000	4.08
6010C	Zinc	37	39	5.26
6020A	Arsenic	21	22	4.65
		Result (mg/L)	Result (mg/L)	
SM 2320B	Alkalinity	140	150	6.89

Qualification: The results for aluminum in the FD sample pairs were qualified as estimated (J).

Compound Quantitation – Samples were diluted prior to analysis due to high levels of sodium; both diluted and undiluted results were reported for all samples. Analyte non-detections were reported as "ND"; these results should be considered the equivalent of "PQL U." Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The total and dissolved metals results reported in SDG 680-130949 are acceptable as reported with the noted qualifications and the data may be used for its intended purpose.

Client Sample ID	**Lab Sample ID**	**Analysis**	**Lab Value**	**Lab Qualifier**	**Validated Value**	**Validation Qualifier**
680-130949-1	AAFES-2	Total Metals, Alkalinity	No qualifications needed.			
680-130949-2	XGM-94-04X	Aluminum	670	J	670	J
680-130949-2	XGM-94-04X	Iron	1,600	J	1,600	J
680-130949-2	XGM-94-04X	Magnesium	20,000	J	20,000	J
680-130949-2	XGM-94-04X	Manganese	1,500	J	1,500	J
680-130949-3	XGM-93-02X	Total Metals, Alkalinity	No qualifications needed.			
680-130949-4	XGM-97-12X	Aluminum (total)	46	J	46	J
680-130949-5	AAFES-7	Total Metals	No qualifications needed.			
680-130949-6	43G-DUP1	Aluminum (total)	230		230	J

AOC 43G Fall 2016 LTM Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130949-1	AAFES-2	10/14/2016	6010C	7429-90-5	Aluminum	53	ug/L	J	200	70	24	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-39-3	Barium	53	ug/L		10	5.0	1.7	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-43-9	Cadmium	3	ug/L	U	5.0	3.0	1.0	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-70-2	Calcium	84,000	ug/L		500	75	25	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-47-3	Chromium	1.6	ug/L	J	10	4.0	1.6	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-48-4	Cobalt	3	ug/L	U	10	3.0	1.0	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-50-8	Copper	5	ug/L	U	20	5.0	1.8	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7439-89-6	Iron	11,000	ug/L		50	50	17	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7439-95-4	Magnesium	23,000	ug/L		500	75	33	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7439-96-5	Manganese	2,800	ug/L		10	3.0	1.0	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-02-0	Nickel	2.4	ug/L	J	40	5.0	2.1	1	
680-130949-1	AAFES-2	10/14/2016	6010C	09/07/7440	Potassium	3,100	ug/L		1000	50	17	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-23-5	Sodium	160,000	ug/L		10000	10000	4800	10	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-62-2	Vanadium	3	ug/L	U	10	3.0	1.0	1	
680-130949-1	AAFES-2	10/14/2016	6010C	7440-66-6	Zinc	20	ug/L	U	20	20	7.0	1	
680-130949-1	AAFES-2	10/14/2016	6020A	7440-36-0	Antimony	1.5	ug/L	U	5.0	1.5	0.5	1	
680-130949-1	AAFES-2	10/14/2016	6020A	7440-38-2	Arsenic	16	ug/L		3.0	3.0	1.5	1	
680-130949-1	AAFES-2	10/14/2016	6020A	7440-41-7	Beryllium	0.4	ug/L	U	0.5	0.4	0.17	1	
680-130949-1	AAFES-2	10/14/2016	6020A	7440-28-0	Thallium	1.0	ug/L	U	1.0	1.0	0.49	1	
680-130949-1	AAFES-2	10/14/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	71-43-2	BENZENE	3.0	UG/L	U	3.0	3.0	0.31	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH		C5-C8 ALIPHATICS	850	UG/L		100	100	50	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH		C9-C10 AROMATICS	730	UG/L		500	200	250	5	SJ8563-1DL
680-130949-1	AAFES-2	10/14/2016	MADEP VPH		C9-C12 ALIPHATICS	430	UG/L		100	100	50	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	100-41-4	ETHYLBENZENE	22	UG/L		5.0	5.0	0.42	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	11	UG/L		10	10	0.92	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	4.8	UG/L	J	5.0	5.0	0.31	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	91-20-3	NAPHTHALENE	16	UG/L		5.0	5.0	1.6	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	95-47-6	O-XYLENE	1.9	UG/L	J	5.0	5.0	0.47	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	MADEP VPH	108-88-3	TOLUENE	0.44	UG/L	J	5.0	5.0	0.34	1	SJ8563-1
680-130949-1	AAFES-2	10/14/2016	SM 2320B		Alkalinity	140	mg/L		5.0	3.2	1.1	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7429-90-5	Aluminum	40	ug/L	J	200	70	24	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-39-3	Barium	15	ug/L		10	5.0	1.7	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-43-9	Cadmium	3	ug/L	U	5.0	3.0	1.0	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-70-2	Calcium	62,000	ug/L		500	75	25	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-47-3	Chromium	8.1	ug/L	J	10	4.0	1.6	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-48-4	Cobalt	3	ug/L	U	10	3.0	1.0	1	

AOC 43G Fall 2016 LTM Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130949-5	AAFES-7	10/17/2016	6010C	7440-50-8	Copper	5	ug/L	U	20	5.0	1.8	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7439-89-6	Iron	180	ug/L		50	50	17	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7439-95-4	Magnesium	7,900	ug/L		500	75	33	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7439-96-5	Manganese	510	ug/L		10	3.0	1.0	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-02-0	Nickel	10	ug/L	J	40	5.0	2.1	1	
680-130949-5	AAFES-7	10/17/2016	6010C	09/07/7440	Potassium	3,800	ug/L		1000	50	17	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-23-5	Sodium	240,000	ug/L		10000	10000	4800	10	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-62-2	Vanadium	3	ug/L	U	10	3.0	1.0	1	
680-130949-5	AAFES-7	10/17/2016	6010C	7440-66-6	Zinc	20	ug/L	U	20	20	7.0	1	
680-130949-5	AAFES-7	10/17/2016	6020A	7440-36-0	Antimony	1.5	ug/L	U	5.0	1.5	0.5	1	
680-130949-5	AAFES-7	10/17/2016	6020A	7440-38-2	Arsenic	3	ug/L	U	3.0	3.0	1.5	1	
680-130949-5	AAFES-7	10/17/2016	6020A	7440-41-7	Beryllium	0.4	ug/L	U	0.5	0.4	0.17	1	
680-130949-5	AAFES-7	10/17/2016	6020A	7440-28-0	Thallium	1.0	ug/L	U	1.0	1.0	0.49	1	
680-130949-5	AAFES-7	10/17/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7429-90-5	Aluminum	36	ug/L	J	200	70	24	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-39-3	Barium	34	ug/L		10	5.0	1.7	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-43-9	Cadmium	3	ug/L	U	5.0	3.0	1.0	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-70-2	Calcium	110,000	ug/L		500	75	25	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-47-3	Chromium	4	ug/L	U	10	4.0	1.6	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-48-4	Cobalt	3	ug/L	U	10	3.0	1.0	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-50-8	Copper	2.9	ug/L	J	20	5.0	1.8	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7439-89-6	Iron	6,000	ug/L		50	50	17	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7439-95-4	Magnesium	19,000	ug/L		500	75	33	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7439-96-5	Manganese	1,400	ug/L		10	3.0	1.0	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-02-0	Nickel	2.4	ug/L	J	40	5.0	2.1	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	09/07/7440	Potassium	4,900	ug/L		1000	50	17	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-23-5	Sodium	210,000	ug/L		10000	10000	4800	10	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-62-2	Vanadium	3	ug/L	U	10	3.0	1.0	1	
680-130949-3	XGM-93-02X	10/17/2016	6010C	7440-66-6	Zinc	15	ug/L	J	20	20	7.0	1	
680-130949-3	XGM-93-02X	10/17/2016	6020A	7440-36-0	Antimony	1.5	ug/L	U	5.0	1.5	0.5	1	
680-130949-3	XGM-93-02X	10/17/2016	6020A	7440-38-2	Arsenic	4.5	ug/L		3.0	3.0	1.5	1	
680-130949-3	XGM-93-02X	10/17/2016	6020A	7440-41-7	Beryllium	0.4	ug/L	U	0.5	0.4	0.17	1	
680-130949-3	XGM-93-02X	10/17/2016	6020A	7440-28-0	Thallium	1.0	ug/L	U	1.0	1.0	0.49	1	
680-130949-3	XGM-93-02X	10/17/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	71-43-2	BENZENE	3.0	UG/L	U	3.0	3.0	0.31	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH		C5-C8 ALIPHATICS	94	UG/L	J	100	100	50	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH		C9-C10 AROMATICS	100	UG/L	U	100	200	50	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH		C9-C12 ALIPHATICS	56	UG/L	J	100	100	50	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.42	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	UG/L	U	10	10	0.92	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	2.7	UG/L	J	5.0	5.0	0.31	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.6	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.47	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	MADEP VPH	108-88-3	TOLUENE	5.0	UG/L	U	5.0	5.0	0.34	1	SJ8563-3
680-130949-3	XGM-93-02X	10/17/2016	SM 2320B		Alkalinity	160	mg/L		5.0	3.2	1.1	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7429-90-5	Aluminum	670	ug/L	J	200	70	24	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-39-3	Barium	12	ug/L		10	5.0	1.7	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-43-9	Cadmium	3	ug/L	U	5.0	3.0	1.0	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-70-2	Calcium	100,000	ug/L		500	75	25	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-47-3	Chromium	4	ug/L	U	10	4.0	1.6	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-48-4	Cobalt	2.2	ug/L	J	10	3.0	1.0	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-50-8	Copper	5	ug/L	U	20	5.0	1.8	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7439-89-6	Iron	1,600	ug/L	J	50	50	17	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7439-95-4	Magnesium	20,000	ug/L	J	500	75	33	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7439-96-5	Manganese	1,500	ug/L	J	10	3.0	1.0	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-02-0	Nickel	8.3	ug/L	J	40	5.0	2.1	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	09/07/7440	Potassium	2,800	ug/L		1000	50	17	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-23-5	Sodium	130,000	ug/L		10000	10000	4800	10	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-62-2	Vanadium	1.5	ug/L	J	10	3.0	1.0	1	
680-130949-2	XGM-94-04X	10/14/2016	6010C	7440-66-6	Zinc	20	ug/L	U	20	20	7.0	1	
680-130949-2	XGM-94-04X	10/14/2016	6020A	7440-36-0	Antimony	1.5	ug/L	U	5.0	1.5	0.5	1	
680-130949-2	XGM-94-04X	10/14/2016	6020A	7440-38-2	Arsenic	4.3	ug/L		3.0	3.0	1.5	1	
680-130949-2	XGM-94-04X	10/14/2016	6020A	7440-41-7	Beryllium	0.4	ug/L	U	0.5	0.4	0.17	1	
680-130949-2	XGM-94-04X	10/14/2016	6020A	7440-28-0	Thallium	1.0	ug/L	U	1.0	1.0	0.49	1	
680-130949-2	XGM-94-04X	10/14/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	71-43-2	BENZENE	3.0	UG/L	U	3.0	3.0	0.31	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH		C5-C8 ALIPHATICS	480	UG/L		100	100	50	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH		C9-C10 AROMATICS	320	UG/L		200	200	100	2	SJ8563-2DL
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH		C9-C12 ALIPHATICS	120	UG/L		100	100	50	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	100-41-4	ETHYLBENZENE	22	UG/L		5.0	5.0	0.42	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	3.6	UG/L	J	10	10	0.92	1	SJ8563-2

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.31	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	91-20-3	NAPHTHALENE	4.0	UG/L	J	5.0	5.0	1.6	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	95-47-6	O-XYLENE	1.7	UG/L	J	5.0	5.0	0.47	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	MADEP VPH	108-88-3	TOLUENE	5.0	UG/L	U	5.0	5.0	0.34	1	SJ8563-2
680-130949-2	XGM-94-04X	10/14/2016	SM 2320B		Alkalinity	170	mg/L		5.0	3.2	1.1	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7429-90-5	Aluminum	46	ug/L	J	200	70	24	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-39-3	Barium	55	ug/L		10	5.0	1.7	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-43-9	Cadmium	3	ug/L	U	5.0	3.0	1.0	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-70-2	Calcium	120,000	ug/L		500	75	25	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-47-3	Chromium	2.7	ug/L	J	10	4.0	1.6	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-48-4	Cobalt	7.2	ug/L	J	10	3.0	1.0	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-50-8	Copper	5	ug/L	U	20	5.0	1.8	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7439-89-6	Iron	25,000	ug/L		50	50	17	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7439-95-4	Magnesium	16,000	ug/L		500	75	33	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7439-96-5	Manganese	1,700	ug/L		10	3.0	1.0	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-02-0	Nickel	15	ug/L	J	40	5.0	2.1	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	09/07/7440	Potassium	6,200	ug/L		1000	50	17	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-23-5	Sodium	250,000	ug/L		10000	10000	4800	10	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-62-2	Vanadium	3	ug/L	U	10	3.0	1.0	1	
680-130949-4	XGM-97-12X	10/17/2016	6010C	7440-66-6	Zinc	37	ug/L		20	20	7.0	1	
680-130949-4	XGM-97-12X	10/17/2016	6020A	7440-36-0	Antimony	1.5	ug/L	U	5.0	1.5	0.5	1	
680-130949-4	XGM-97-12X	10/17/2016	6020A	7440-38-2	Arsenic	21	ug/L		3.0	3.0	1.5	1	
680-130949-4	XGM-97-12X	10/17/2016	6020A	7440-41-7	Beryllium	0.4	ug/L	U	0.5	0.4	0.17	1	
680-130949-4	XGM-97-12X	10/17/2016	6020A	7440-28-0	Thallium	1.0	ug/L	U	1.0	1.0	0.49	1	
680-130949-4	XGM-97-12X	10/17/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	71-43-2	BENZENE	3.0	UG/L	U	3.0	3.0	0.31	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH		C5-C8 ALIPHATICS	420	UG/L		100	100	50	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH		C9-C10 AROMATICS	340	UG/L		200	200	100	2	SJ8563-4DL
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH		C9-C12 ALIPHATICS	230	UG/L		100	100	50	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	100-41-4	ETHYLBENZENE	23	UG/L		5.0	5.0	0.42	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	UG/L	U	10	10	0.92	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.31	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	91-20-3	NAPHTHALENE	2.6	UG/L	J	5.0	5.0	1.6	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.47	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	MADEP VPH	108-88-3	TOLUENE	5.0	UG/L	U	5.0	5.0	0.34	1	SJ8563-4
680-130949-4	XGM-97-12X	10/17/2016	SM 2320B		Alkalinity	140	mg/L		5.0	3.2	1.1	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7429-90-5	Aluminum	230	ug/L	**J**	200	70	24	1	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-39-3	Barium	54	ug/L		10	5.0	1.7	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-43-9	Cadmium	3	ug/L	U	5.0	3.0	1.0	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-70-2	Calcium	110,000	ug/L		500	75	25	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-47-3	Chromium	2.7	ug/L	J	10	4.0	1.6	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-48-4	Cobalt	7.6	ug/L	J	10	3.0	1.0	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-50-8	Copper	5	ug/L	U	20	5.0	1.8	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7439-89-6	Iron	25,000	ug/L		50	50	17	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7439-92-1	Lead	10	ug/L	U	10	10	3.9	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7439-95-4	Magnesium	16,000	ug/L		500	75	33	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7439-96-5	Manganese	1,600	ug/L		10	3.0	1.0	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-02-0	Nickel	16	ug/L	J	40	5.0	2.1	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	09/07/7440	Potassium	5,900	ug/L		1000	50	17	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7782-49-2	Selenium	20	ug/L	U	20	20	9.9	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-22-4	Silver	1.5	ug/L	U	10	1.5	0.6	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-23-5	Sodium	240,000	ug/L		10000	10000	4800	10	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-62-2	Vanadium	3	ug/L	U	10	3.0	1.0	1	
680-130949-6	43G-DUP1	10/17/2016	6010C	7440-66-6	Zinc	39	ug/L		20	20	7.0	1	
680-130949-6	43G-DUP1	10/17/2016	6020A	7440-36-0	Antimony	1.5	ug/L	U	5.0	1.5	0.5	1	
680-130949-6	43G-DUP1	10/17/2016	6020A	7440-38-2	Arsenic	22	ug/L		3.0	3.0	1.5	1	
680-130949-6	43G-DUP1	10/17/2016	6020A	7440-41-7	Beryllium	0.4	ug/L	U	0.5	0.4	0.17	1	
680-130949-6	43G-DUP1	10/17/2016	6020A	7440-28-0	Thallium	1.0	ug/L	U	1.0	1.0	0.49	1	
680-130949-6	43G-DUP1	10/17/2016	7470A	7439-97-6	Mercury	0.2	ug/L	U	0.2	0.2	0.08	1	
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	71-43-2	BENZENE	3.0	UG/L	U	3.0	3.0	0.31	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH		C5-C8 ALIPHATICS	420	UG/L		100	100	50	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH		C9-C10 AROMATICS	370	UG/L		200	200	100	2	SJ8563-5DL
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH		C9-C12 ALIPHATICS	220	UG/L		100	100	50	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	100-41-4	ETHYLBENZENE	23	UG/L		5.0	5.0	0.42	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	UG/L	U	10	10	0.92	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.31	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	91-20-3	NAPHTHALENE	2.6	UG/L	J	5.0	5.0	1.6	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.47	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	MADEP VPH	108-88-3	TOLUENE	5.0	UG/L	U	5.0	5.0	0.34	1	SJ8563-5
680-130949-6	43G-DUP1	10/17/2016	SM 2320B		Alkalinity	150	mg/L		5.0	3.2	1.1	1	
	TRIP BLANK	10/17/2016	MADEP VPH	71-43-2	BENZENE	3.0	UG/L	U	3.0	3.0	0.31	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH		C5-C8 ALIPHATICS	100	UG/L	U	100	100	50	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH		C9-C10 AROMATICS	100	UG/L	U	100	200	50	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH		C9-C12 ALIPHATICS	100	UG/L	U	100	100	50	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH	100-41-4	ETHYLBENZENE	5.0	UG/L	U	5.0	5.0	0.42	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH	179601-23-1	M-,P-XYLENE	10	UG/L	U	10	10	0.92	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH	1634-04-4	METHYL TERT-BUTYL ETHER	5.0	UG/L	U	5.0	5.0	0.31	1	SJ8563-6

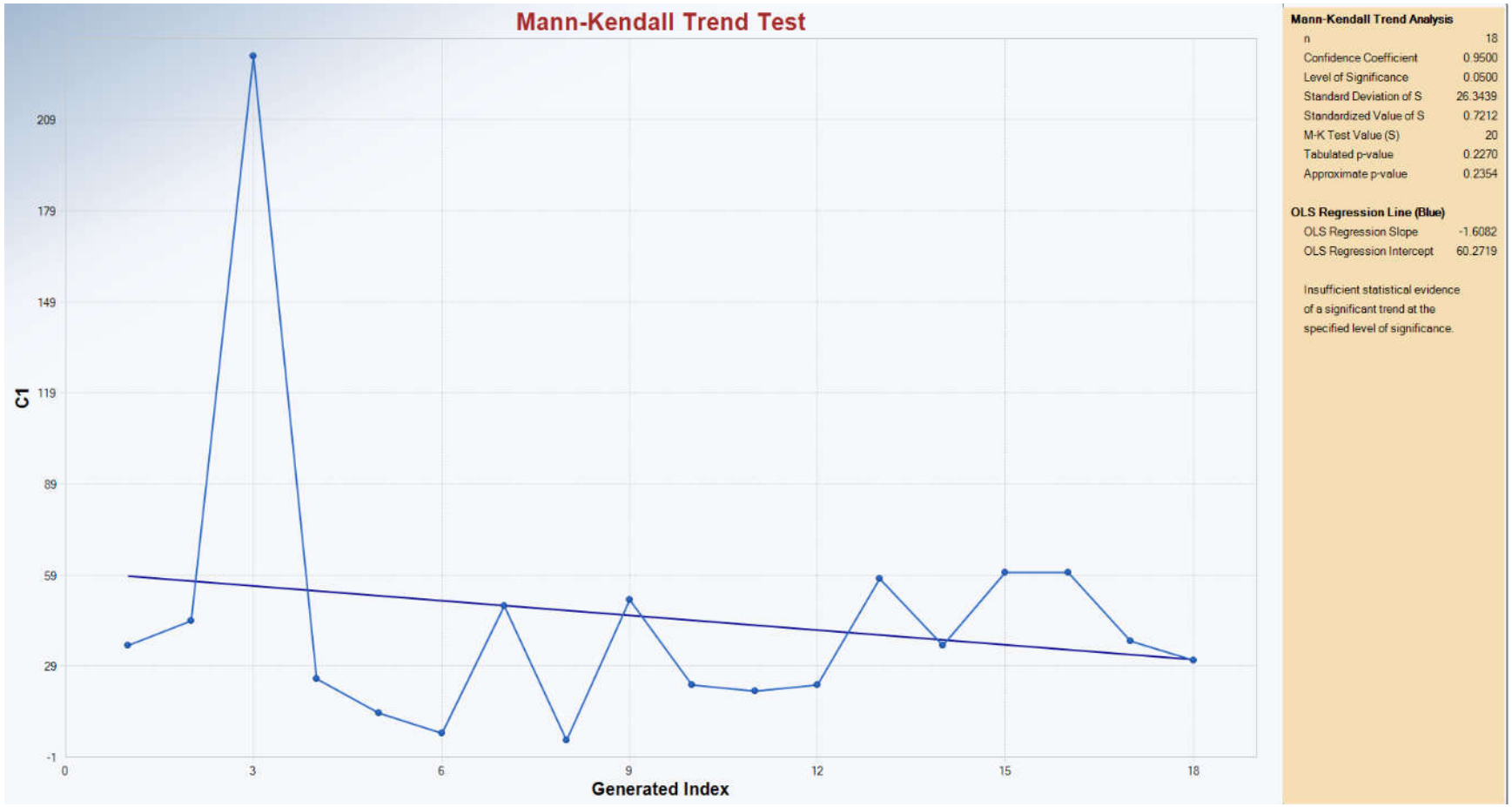
AOC 43G Fall 2016 LTM Validated Analytical Results

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	CAS#	Analyte	Result	Unit	Flag	LOQ	LOD	MDL	Dilution Factor	Sub Lab ID
	TRIP BLANK	10/17/2016	MADEP VPH	91-20-3	NAPHTHALENE	5.0	UG/L	U	5.0	5.0	1.6	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH	95-47-6	O-XYLENE	5.0	UG/L	U	5.0	5.0	0.47	1	SJ8563-6
	TRIP BLANK	10/17/2016	MADEP VPH	108-88-3	TOLUENE	5.0	UG/L	U	5.0	5.0	0.34	1	SJ8563-6

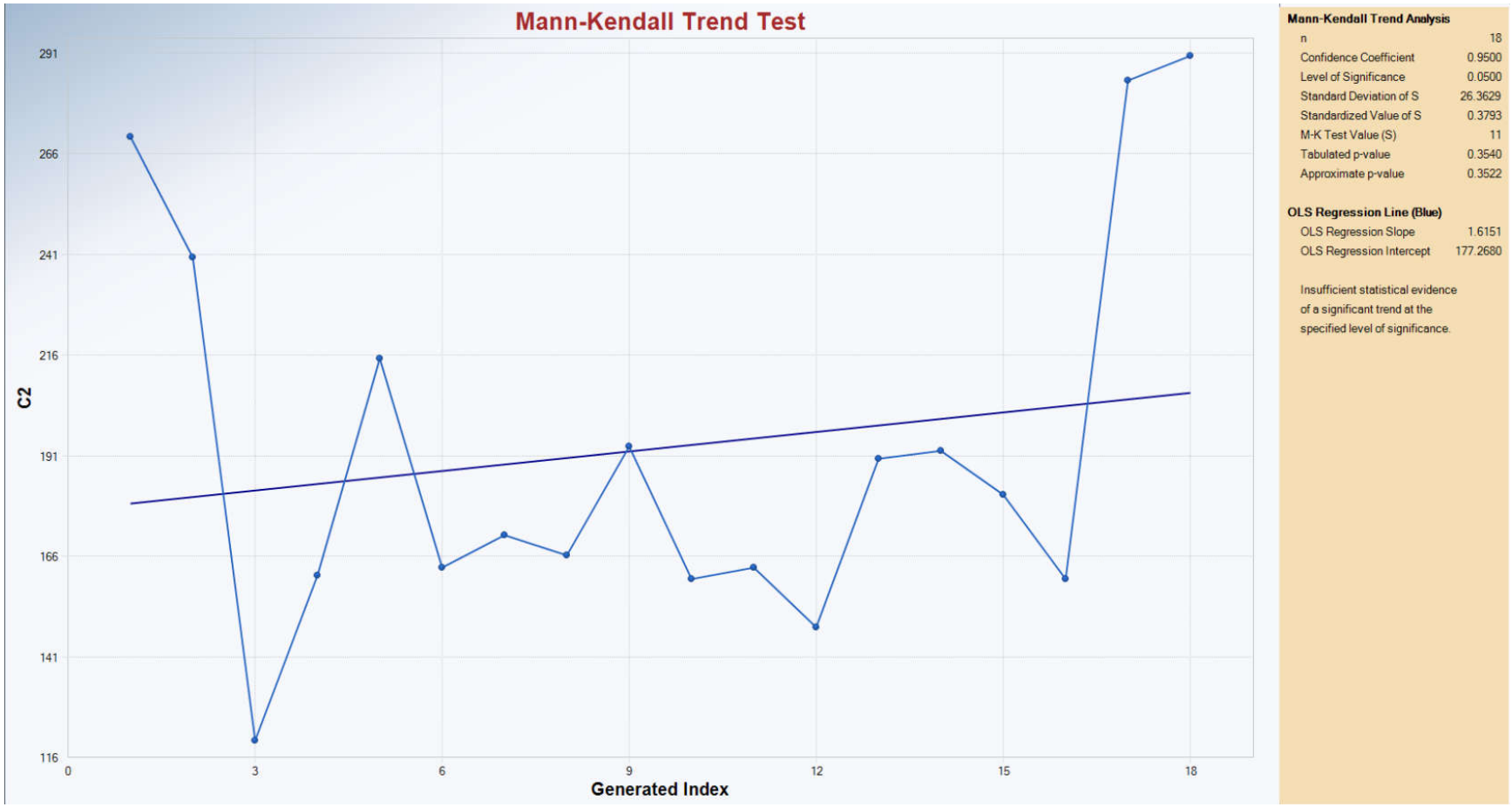
Notes:
Validated result
µg/L = microgram per liter
mg/L = milligram per liter
U/UJ = non-detect
J = Estimated result
LOQ = Limit of quantitation
LOD = Limit of Detection
MDL = Method Detection Limit

APPENDIX C
DATA TREND ANALYSES

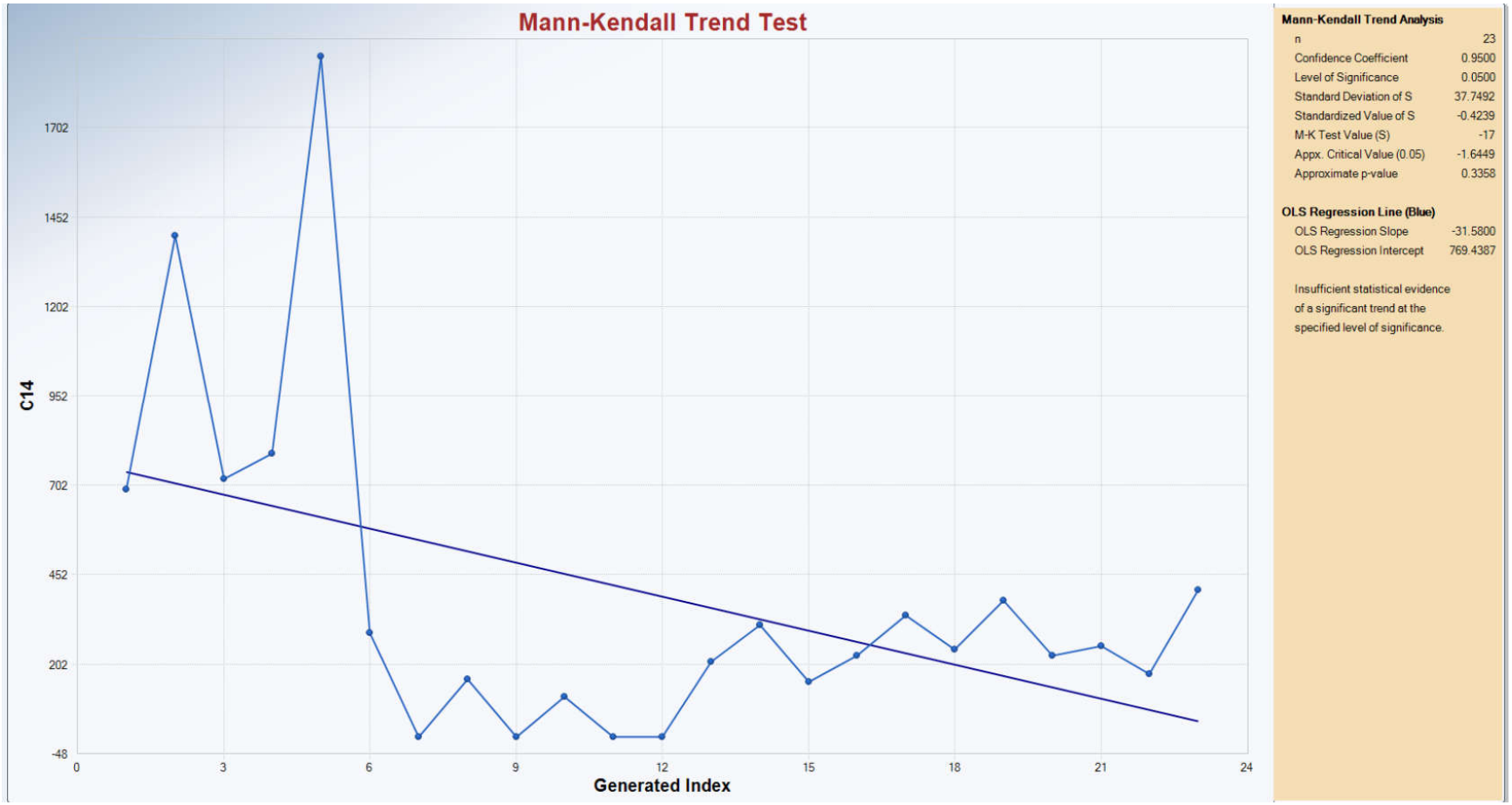
AOC 57 – Well 57M-95-03X – Arsenic



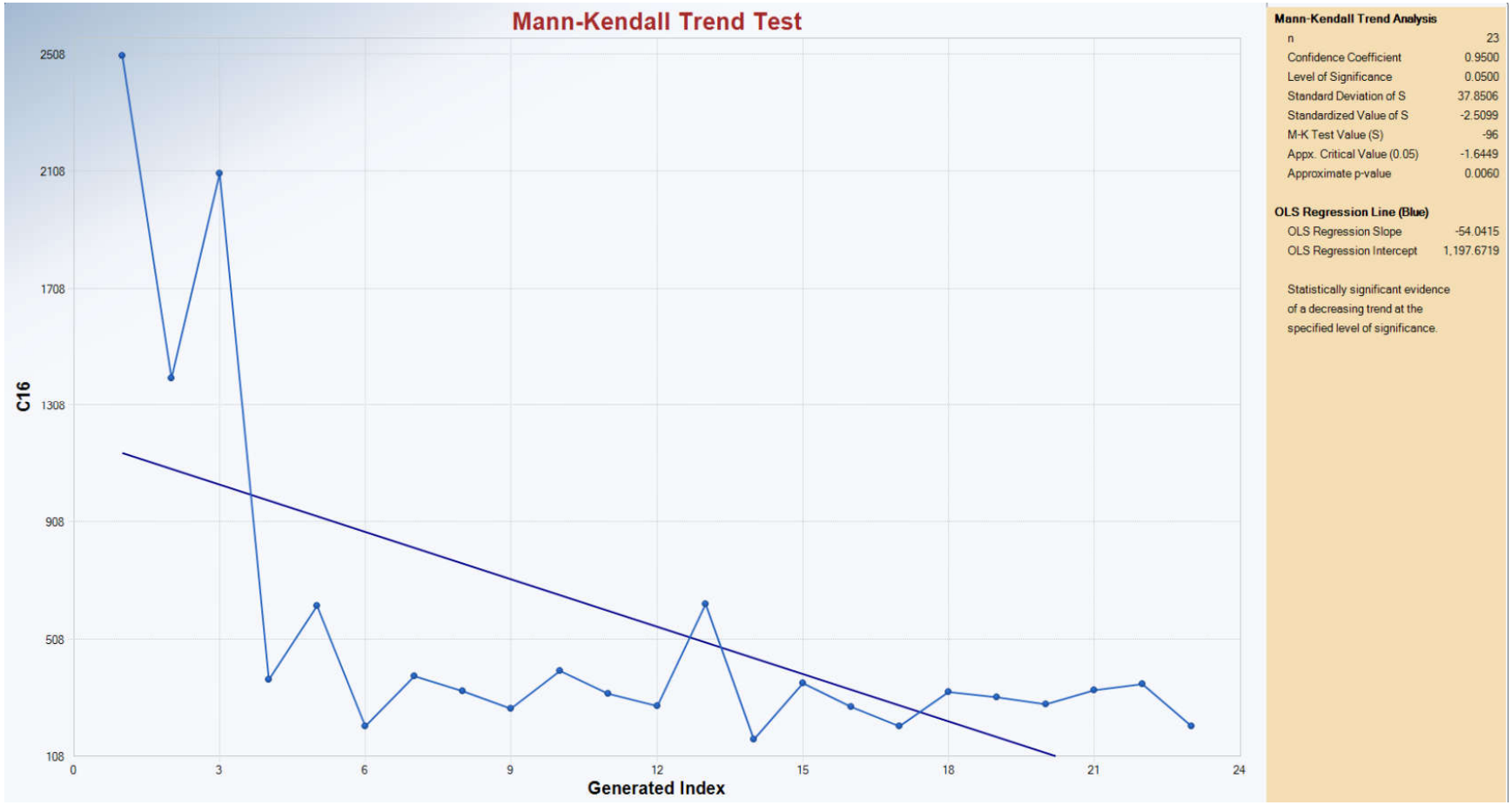
AOC 57 – Well 57M-96-11X – Arsenic



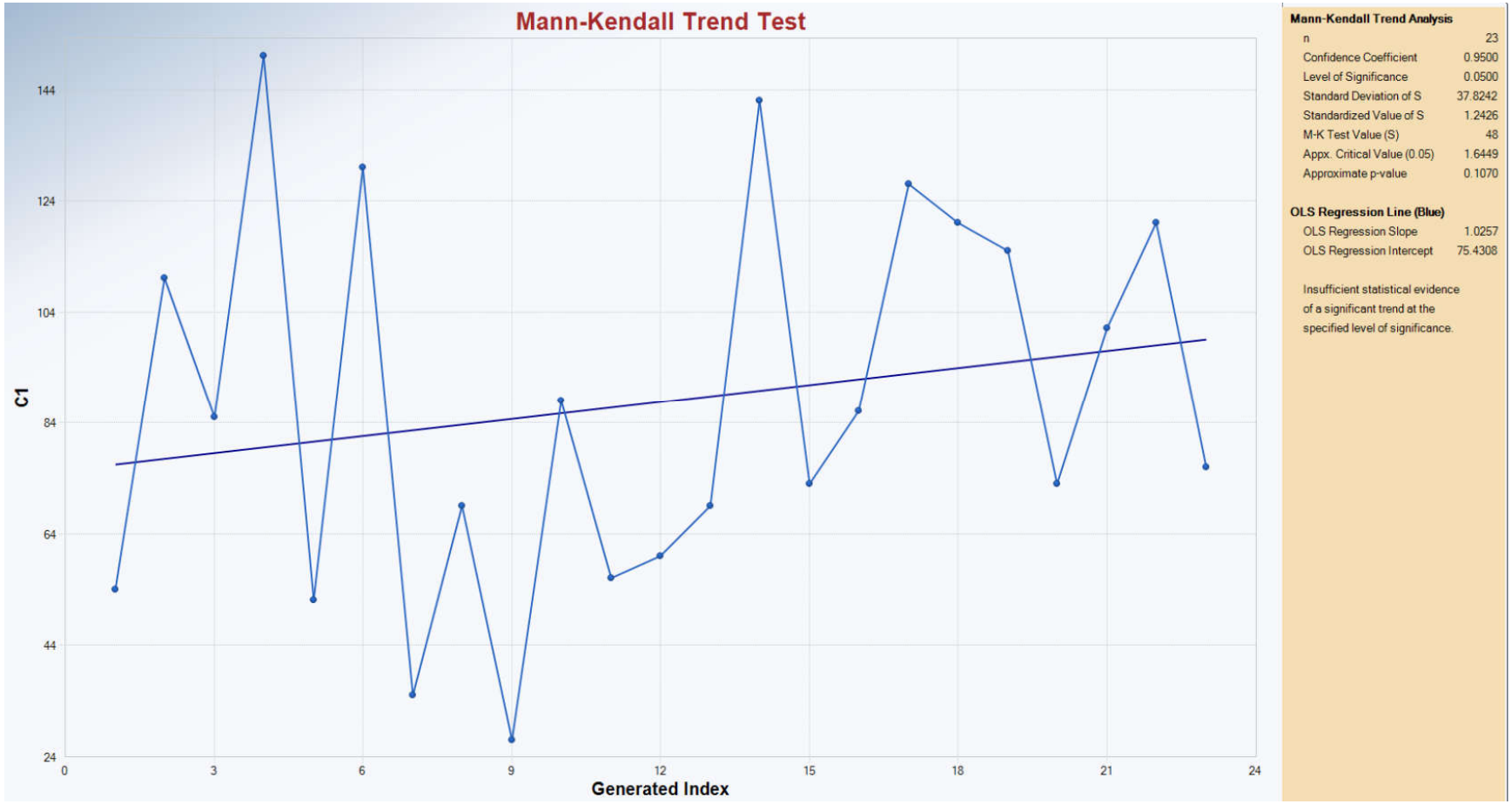
AOC 69W – Well 69W-94-13 – EPH



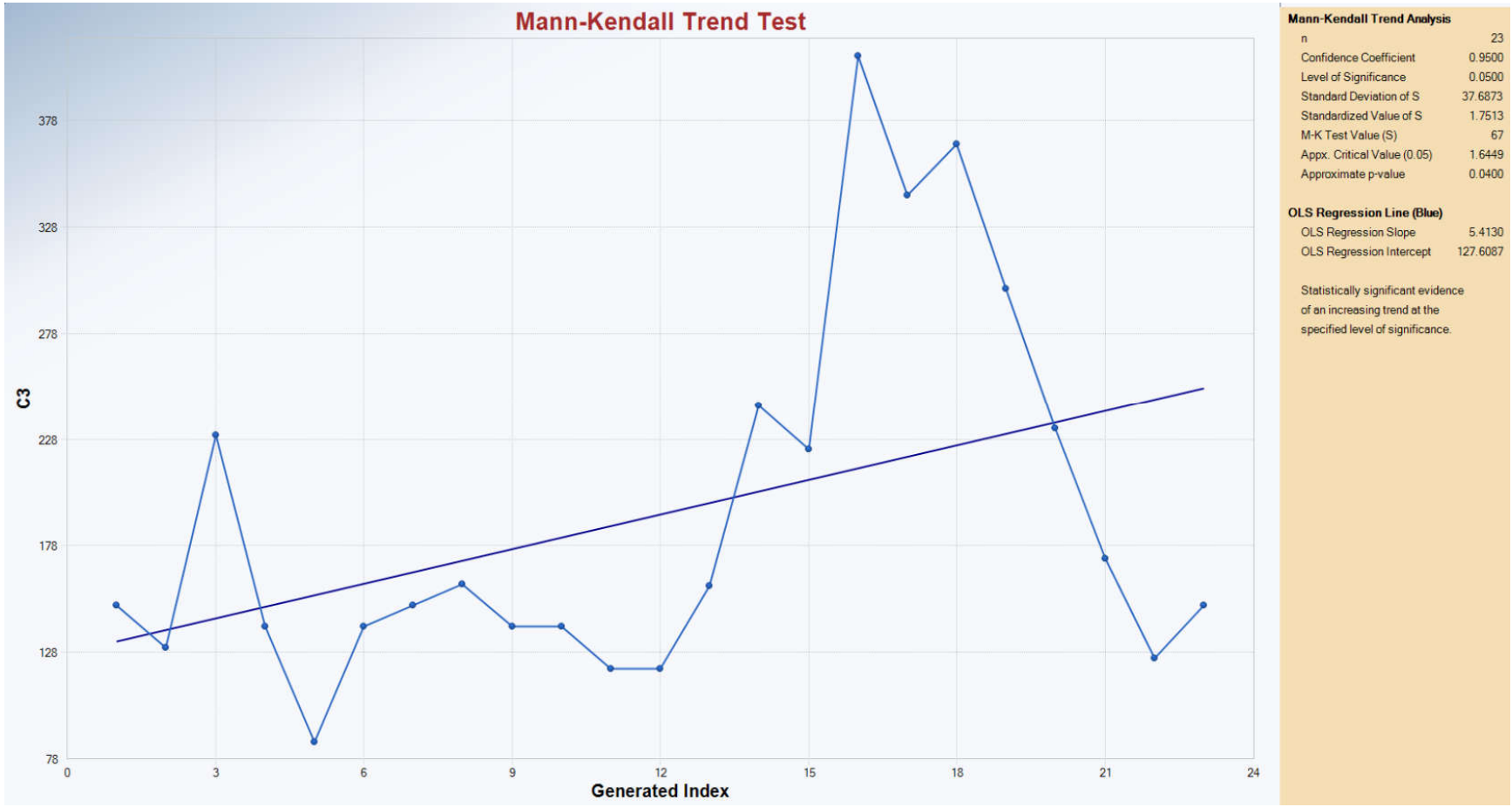
AOC 69W – Well ZWM-99-22X – EPH



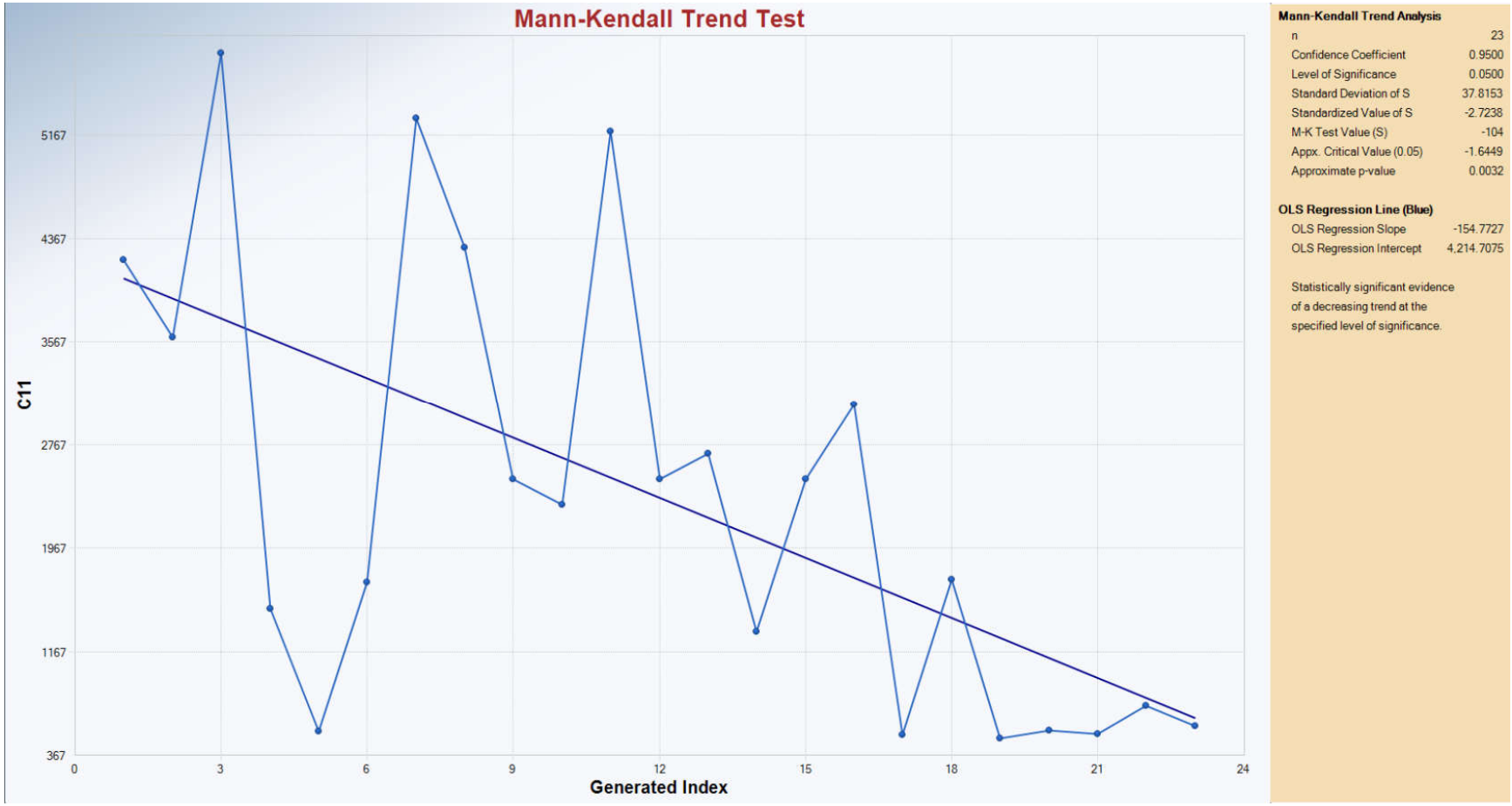
AOC 69W – W Well 69W-94-13 – Arsenic



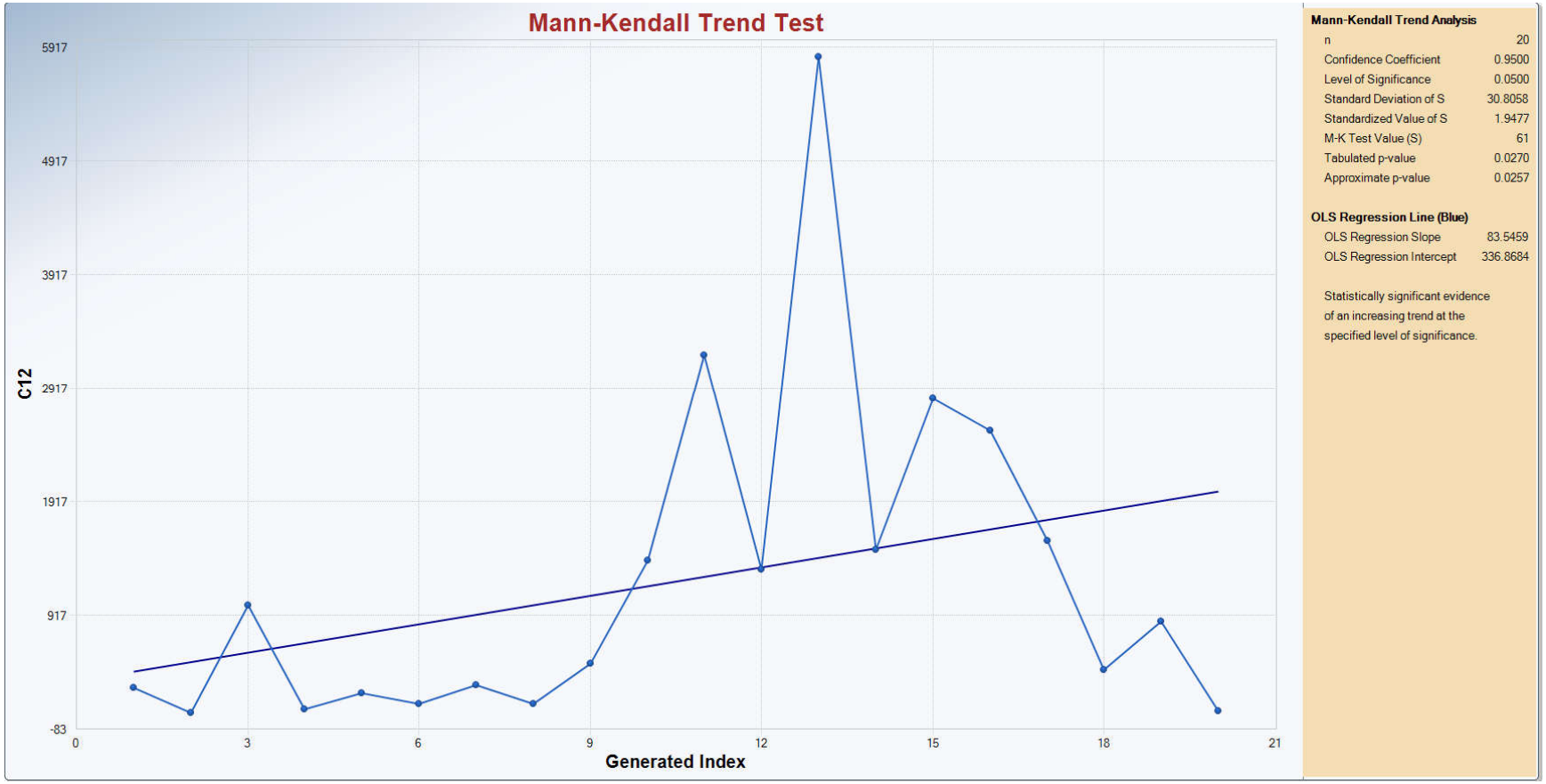
AOC 69W – Well ZWM-99-22X – Arsenic



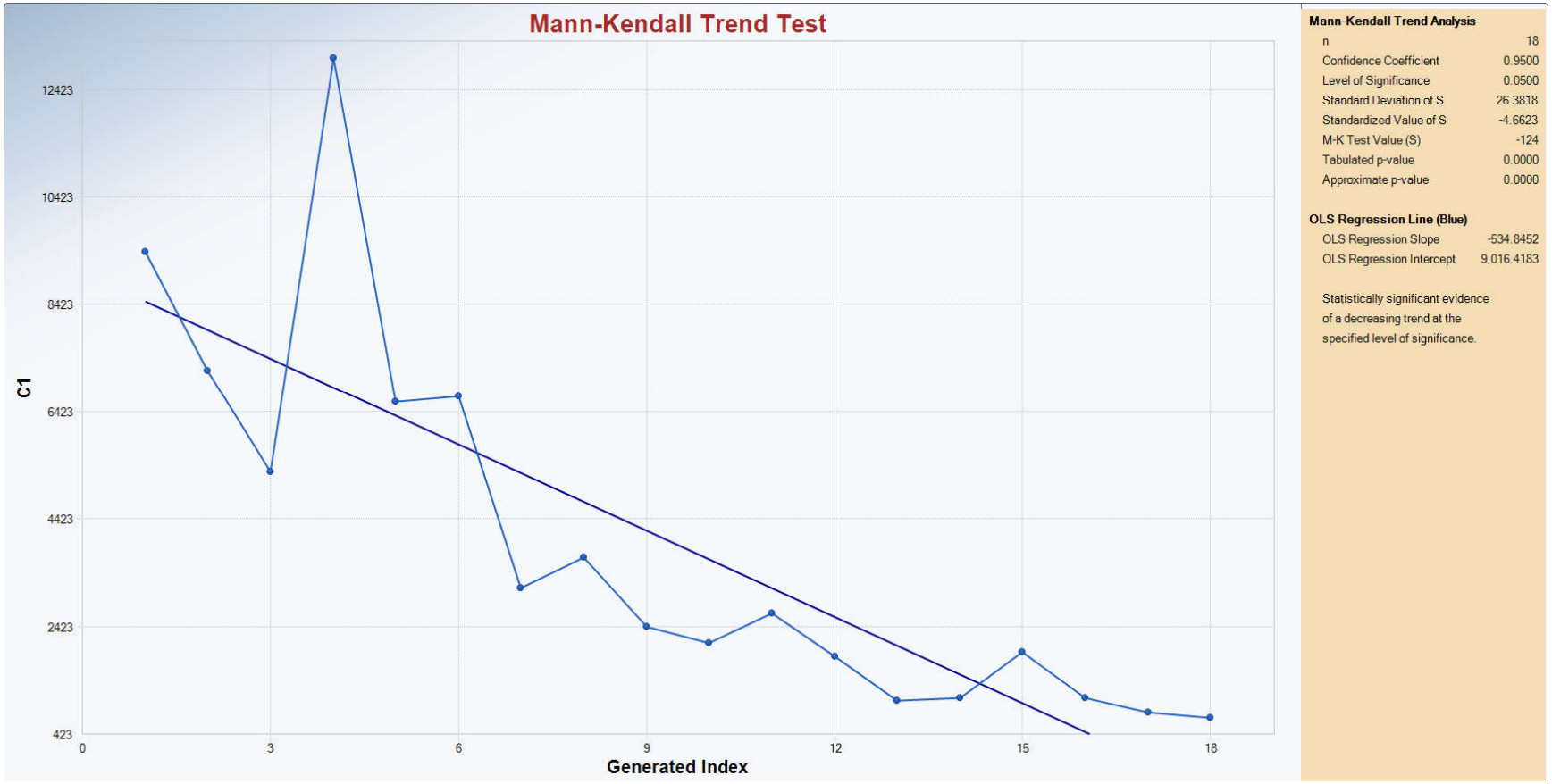
AOC 69W – Well ZWM-99-23X – Manganese



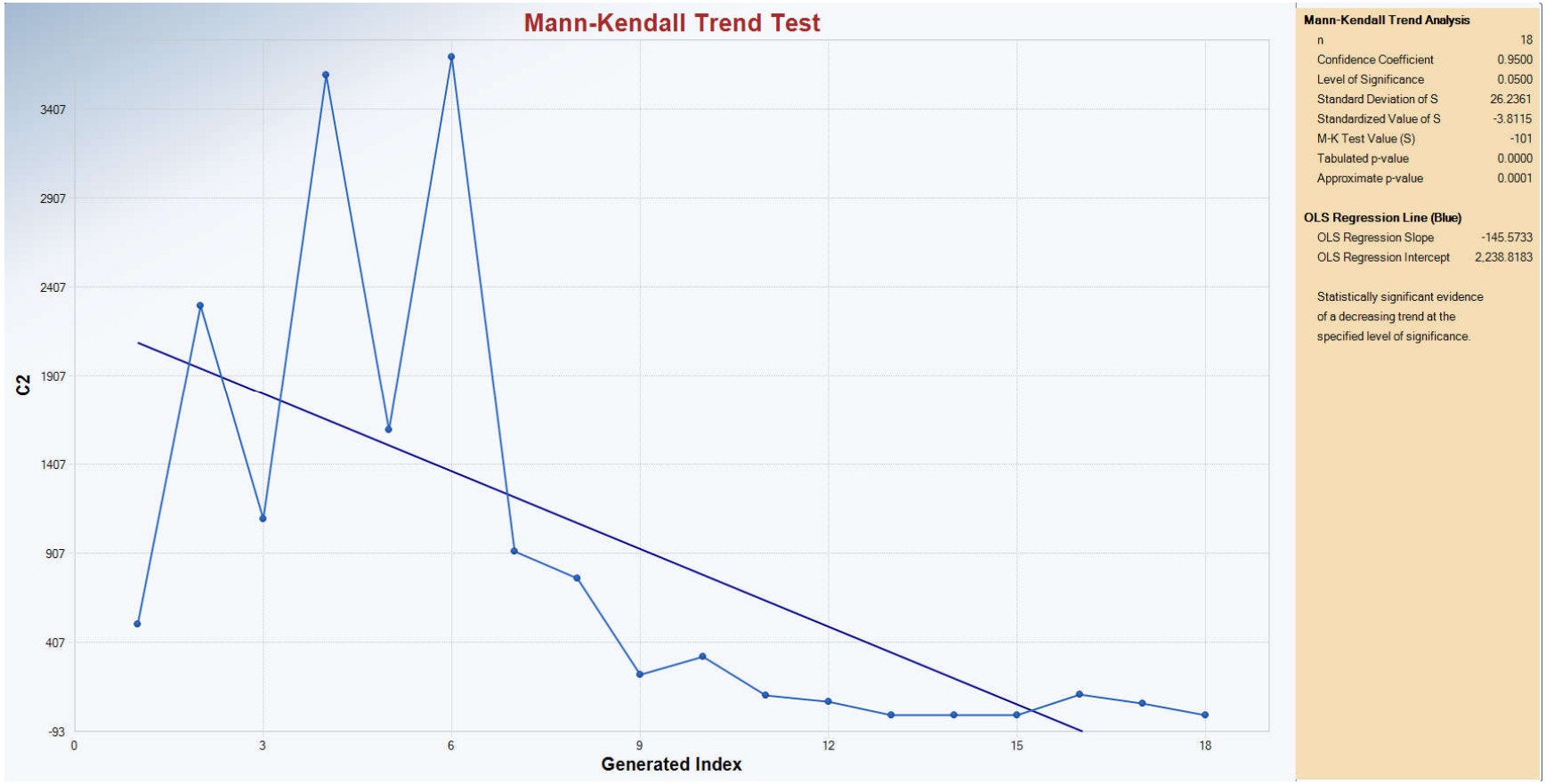
AOC 69W – Well ZWM-01-25X – Manganese



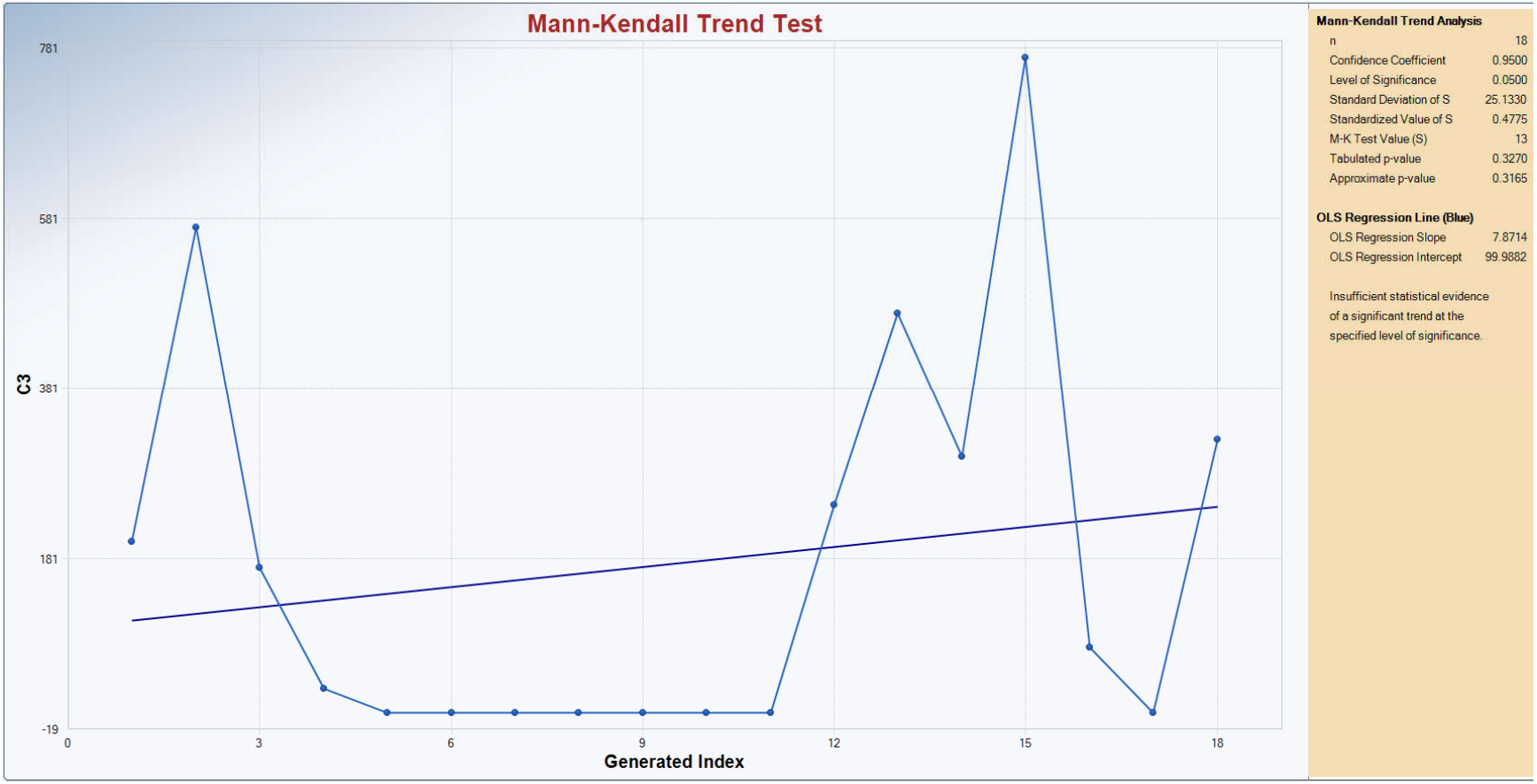
AOC 43G – Well AAFES-2 – VPH C9-C10



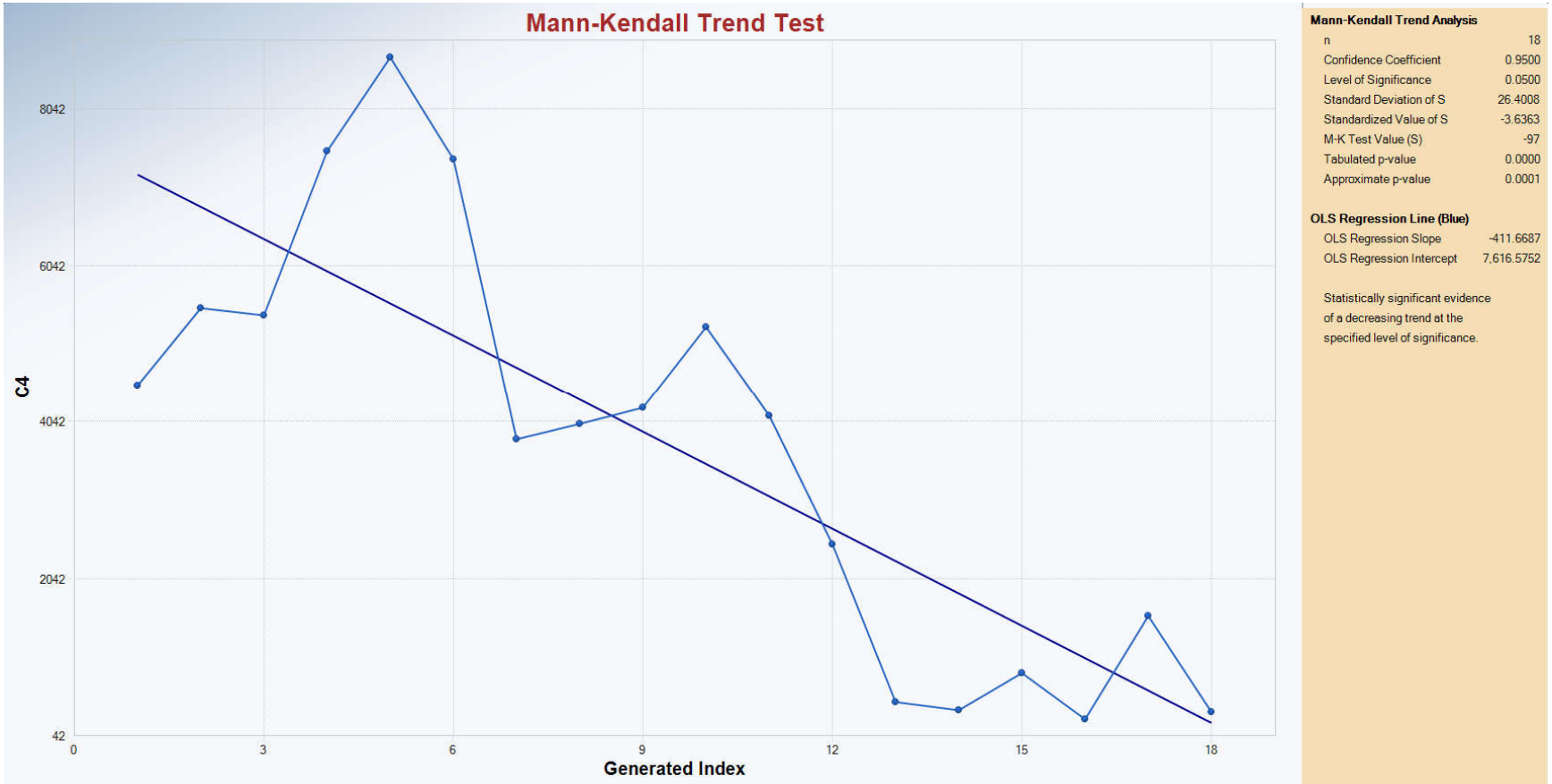
AOC 43G – Well XGM-93-02X – VPH C9-C10



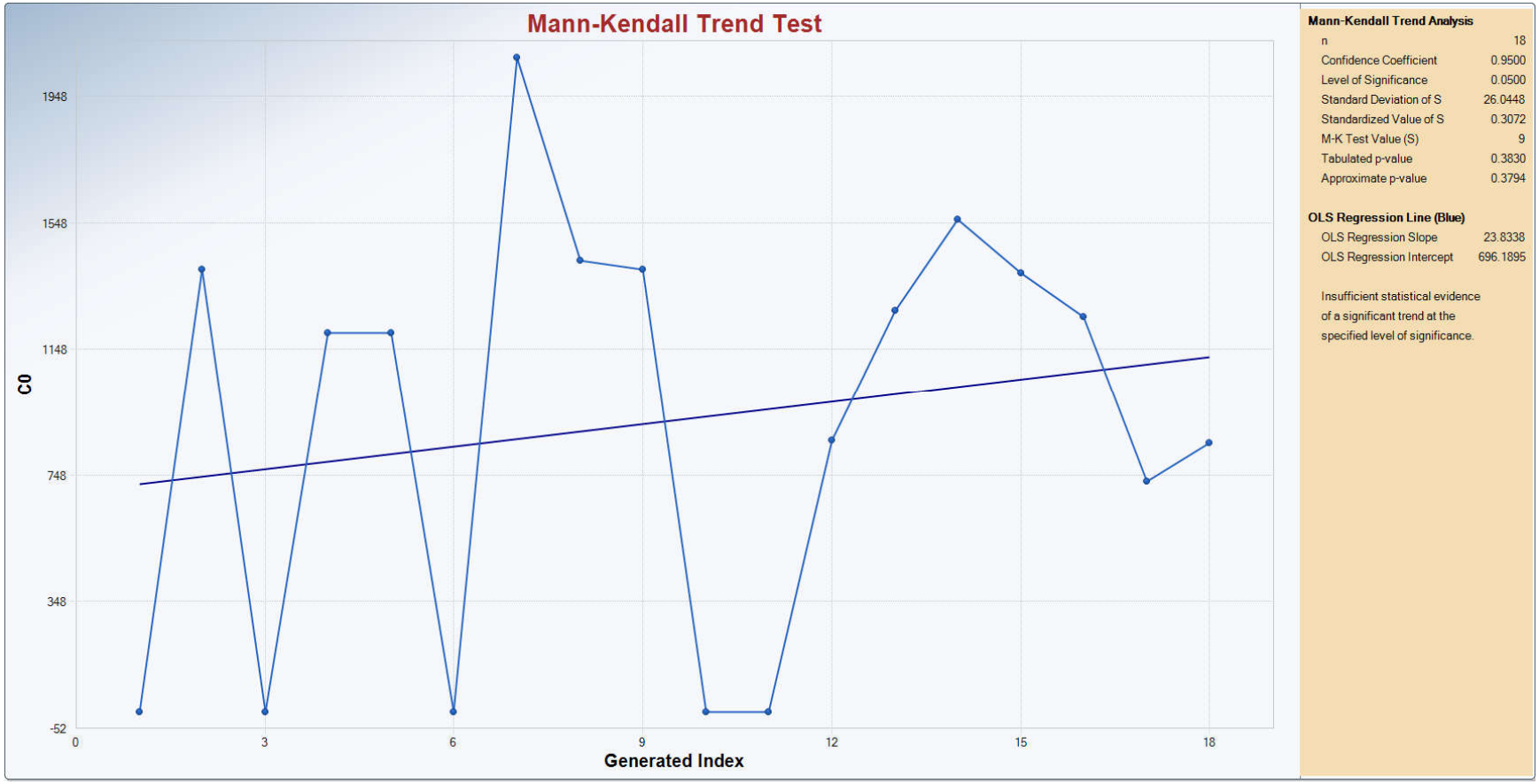
AOC 43G – Well XGM-94-04X – VPH C9-C10



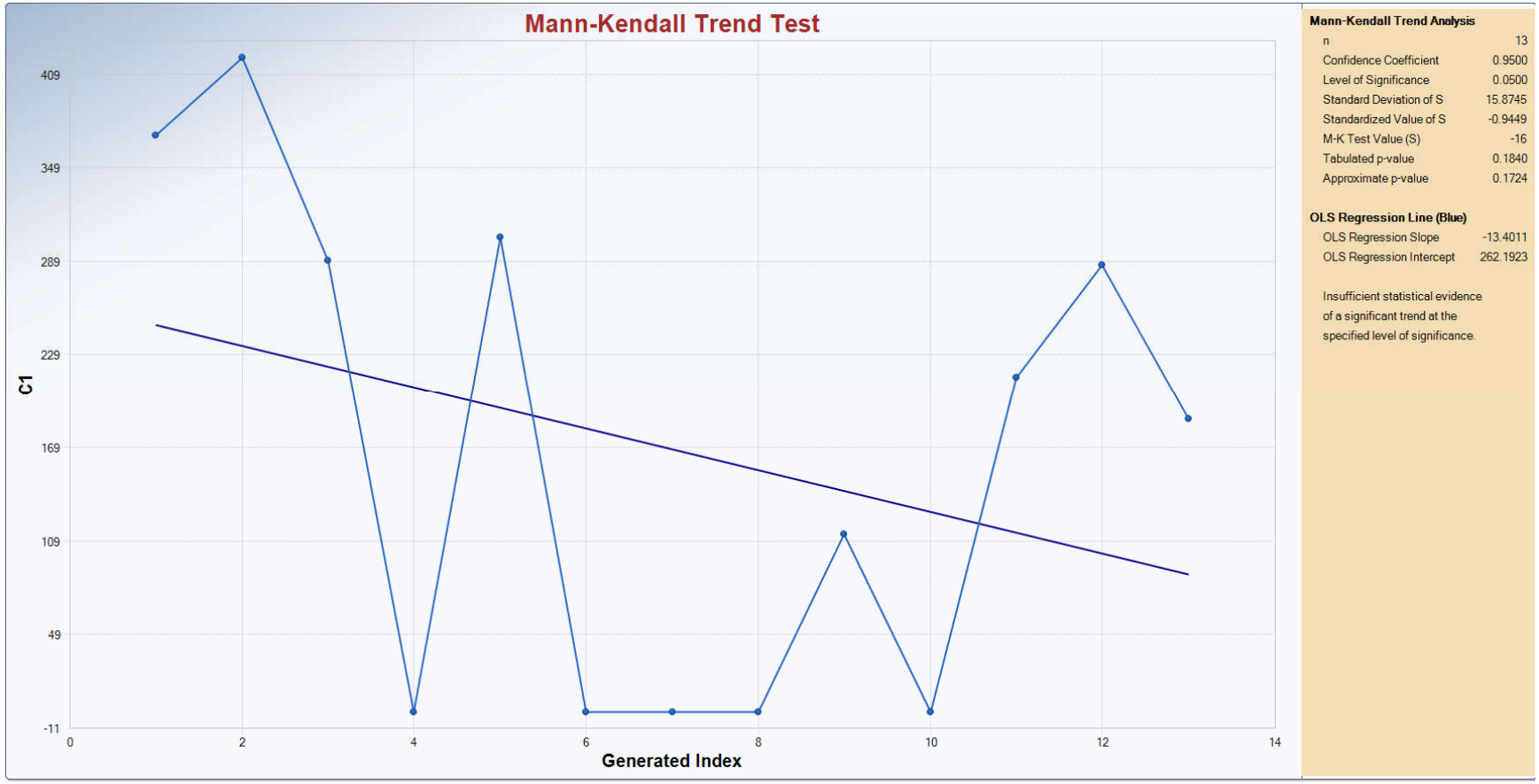
AOC 43G – Well XGM-97-12X – VPH C9-C10



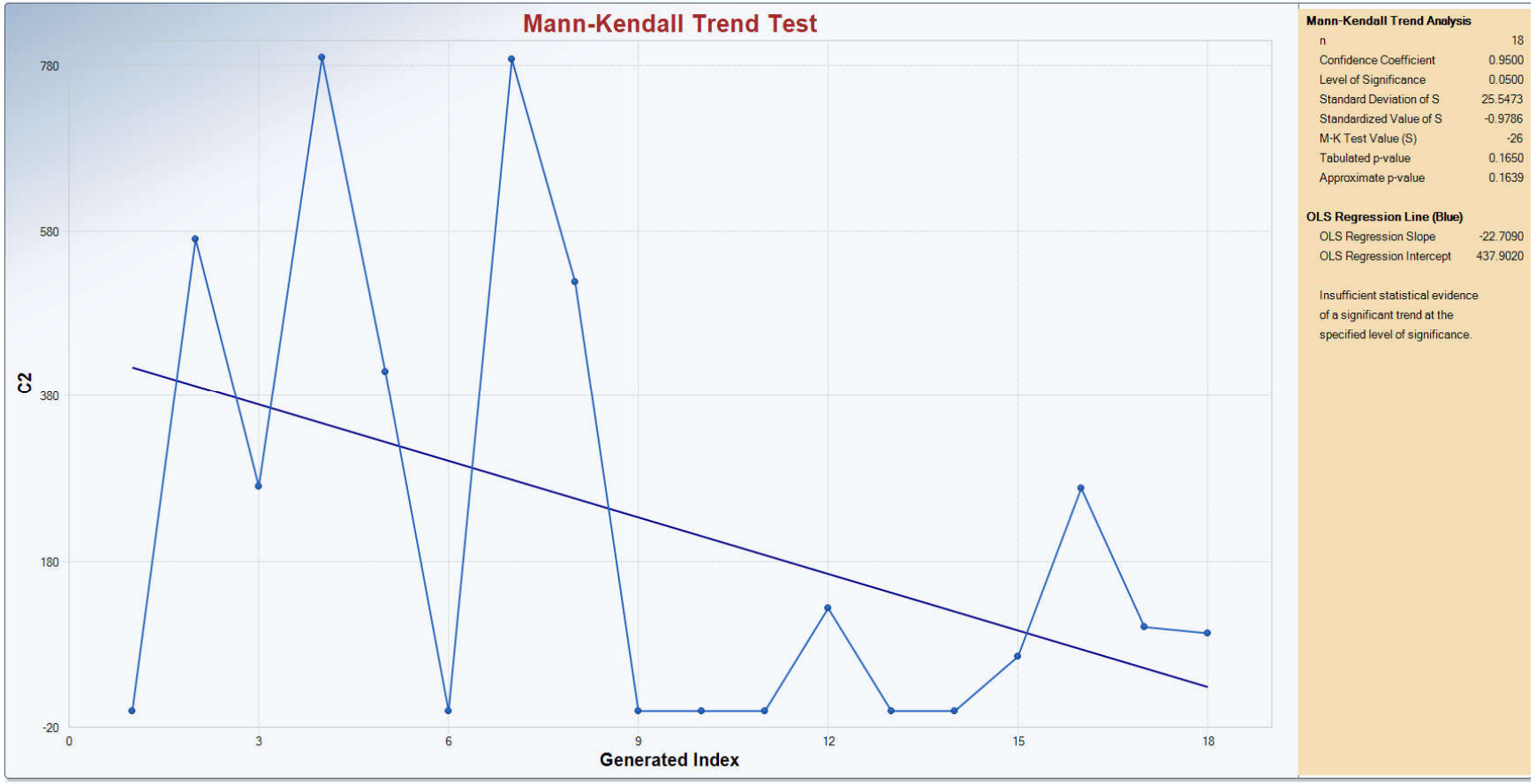
AOC 43G – Well AAFES-2 – VPH C5-C8



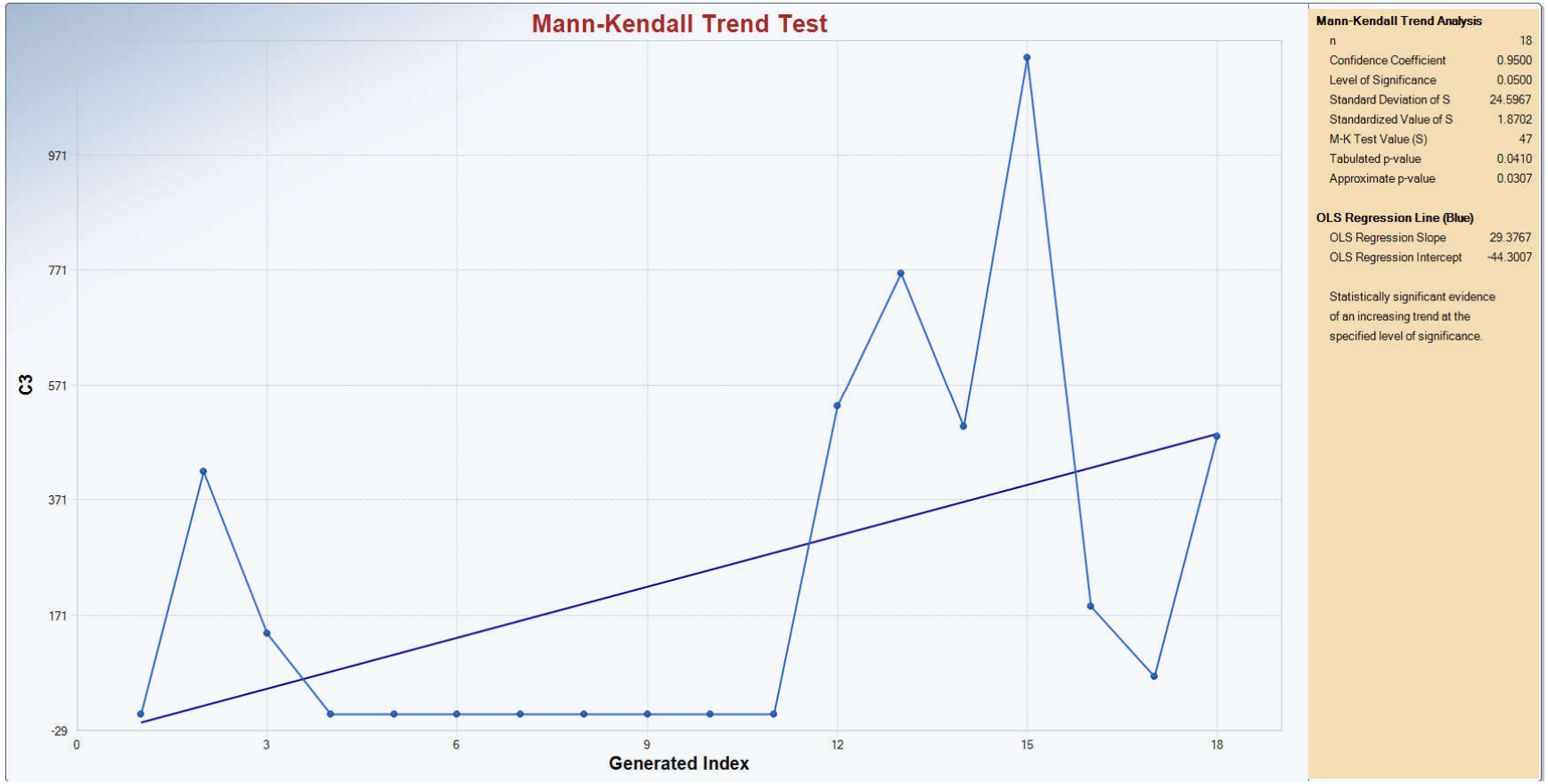
AOC 43G – Well AAFES-6/6R – VPH C5-C8



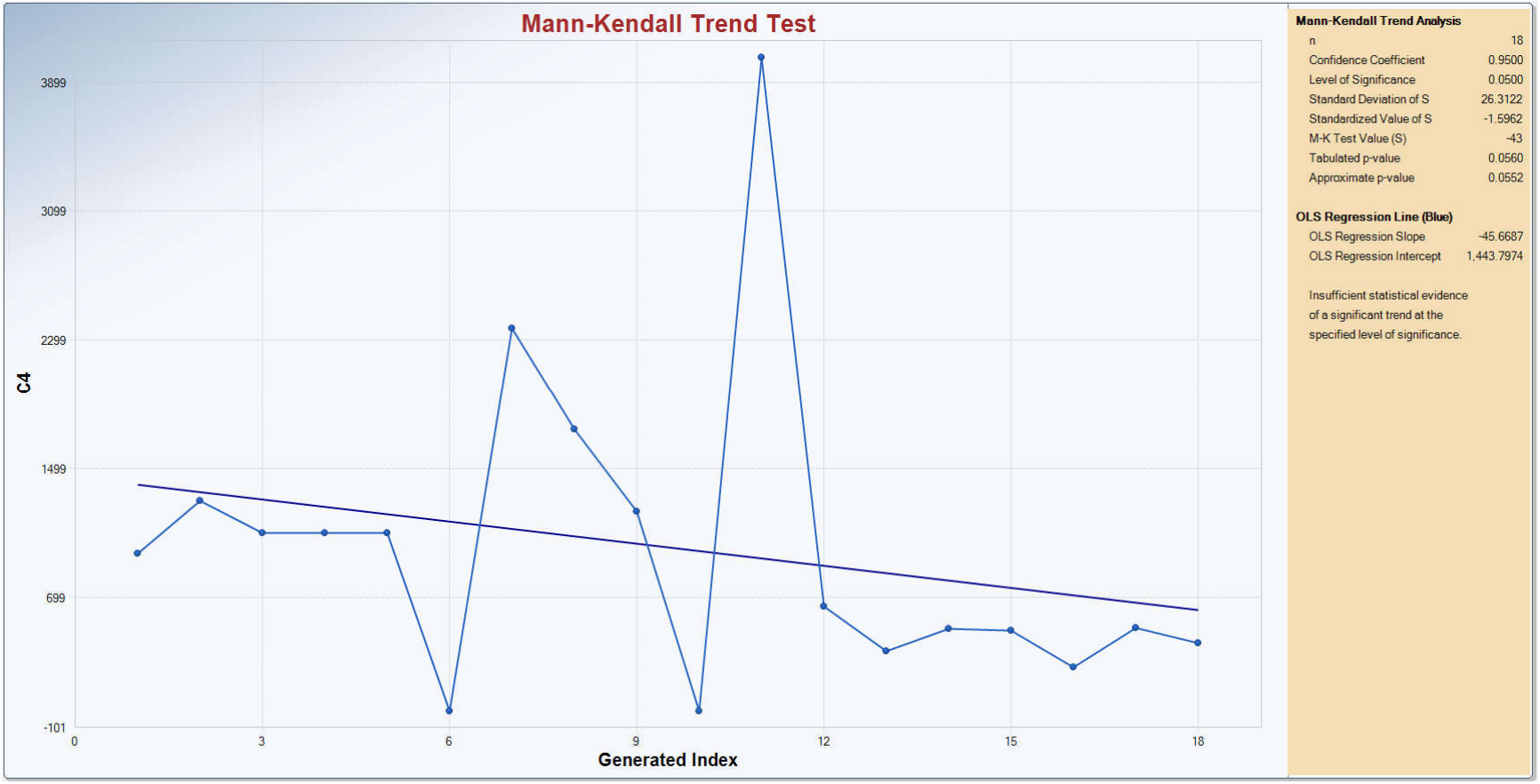
AOC 43G – Well XGM-93-02X – VPH C5-C8



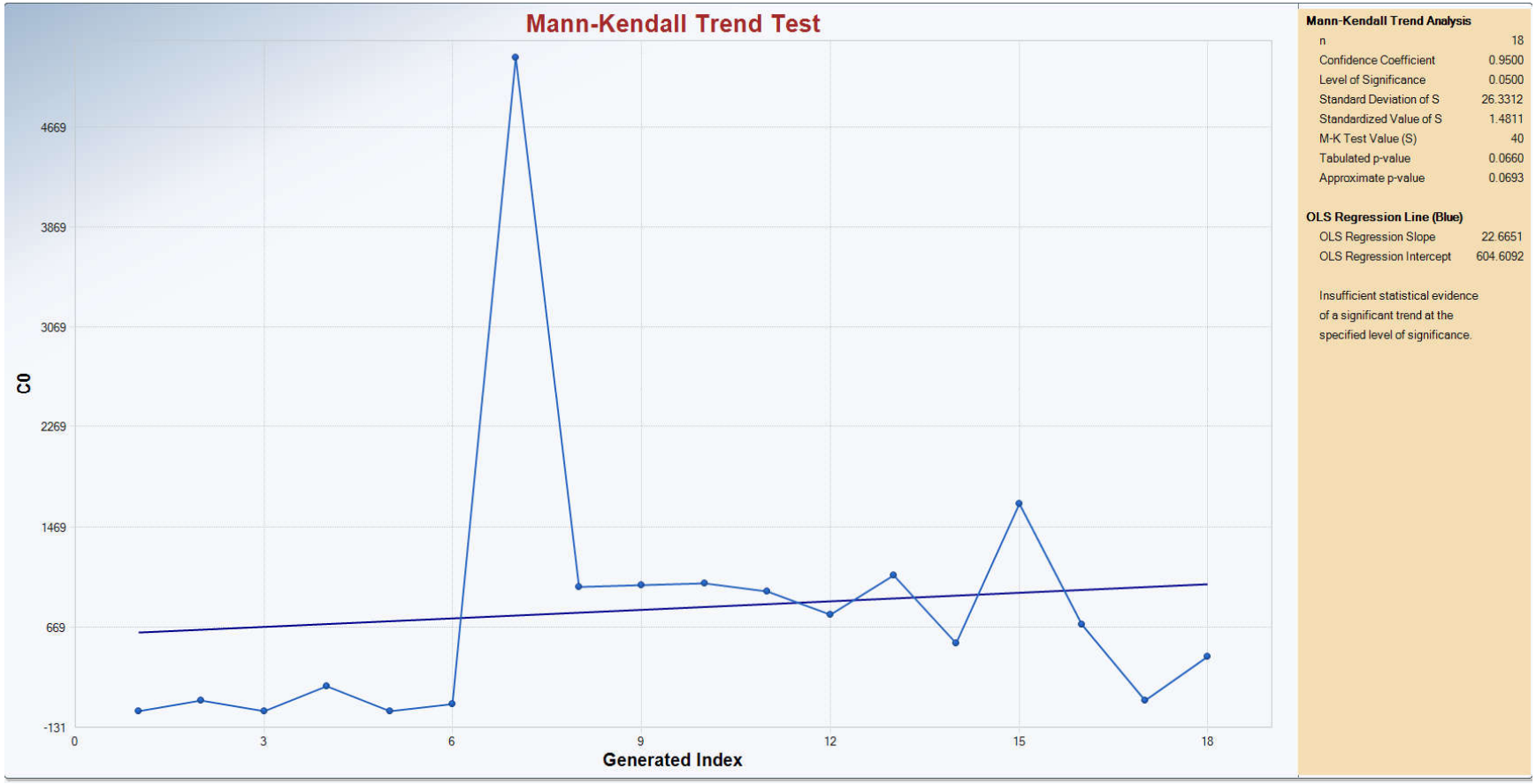
AOC 43G – Well XGM-94-04X – VPH C5-C8



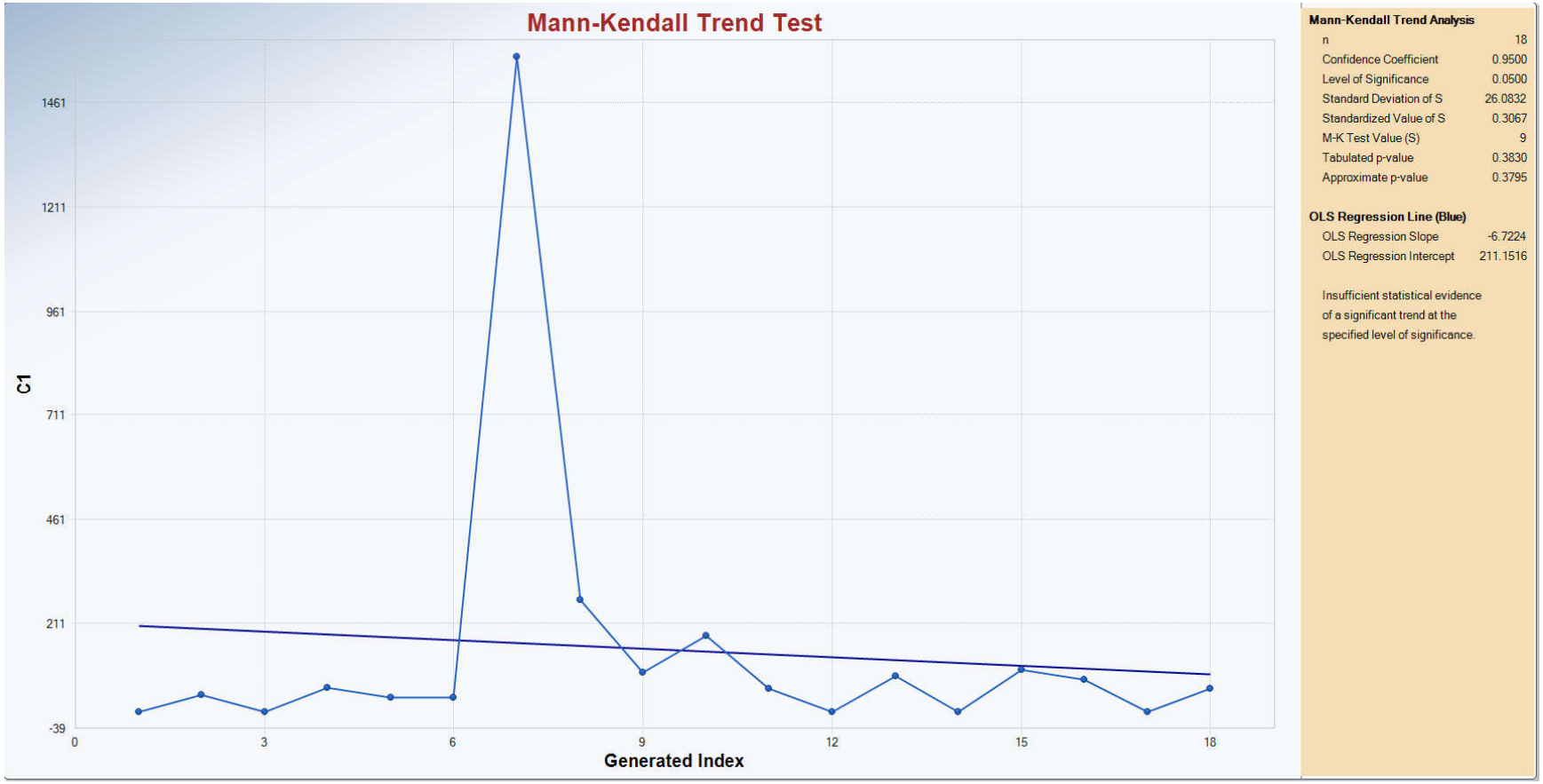
AOC 43G – Well XGM-97-12X – VPH C5-C8



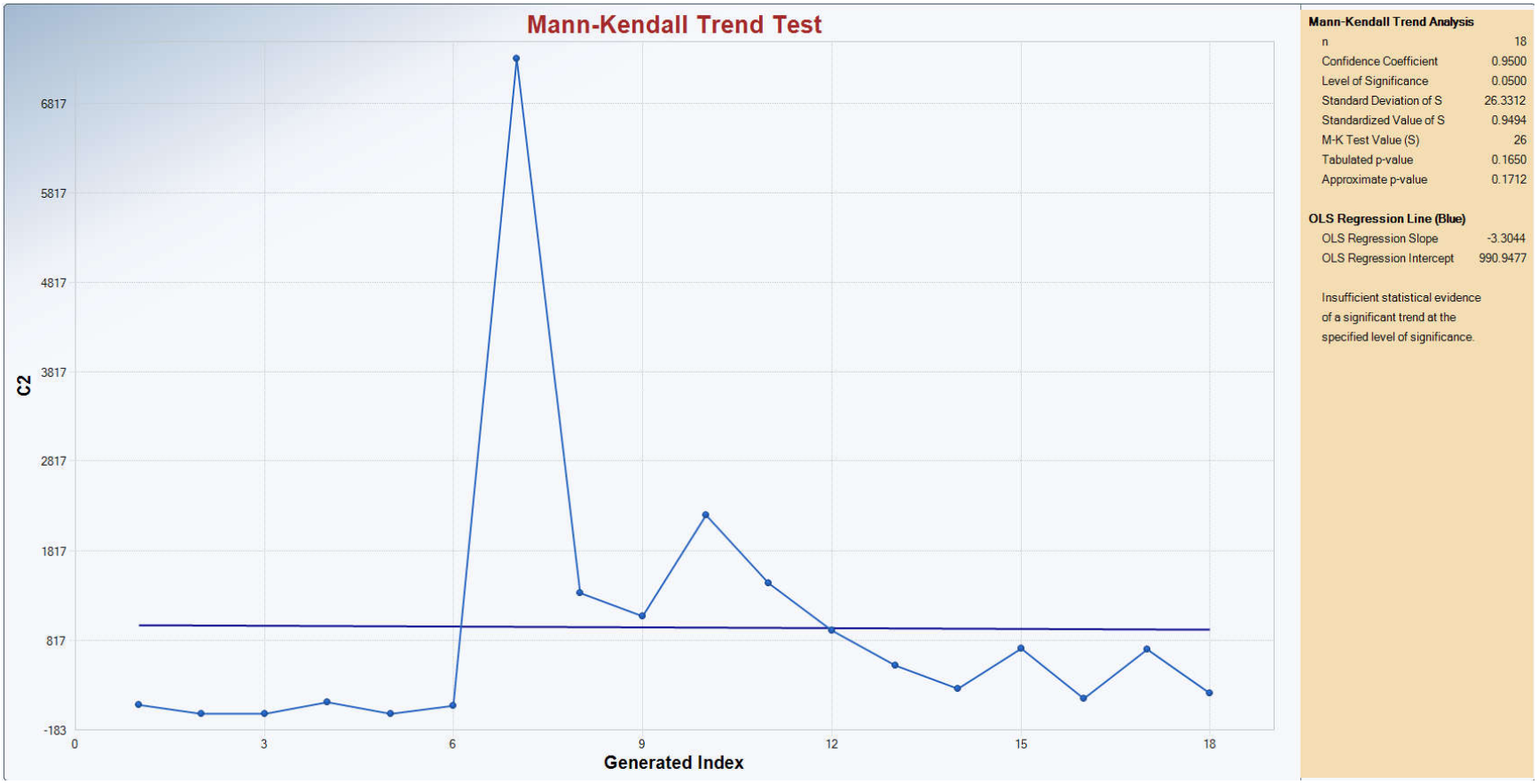
AOC 43G – Well AAFES-2 – VPH C9-C12



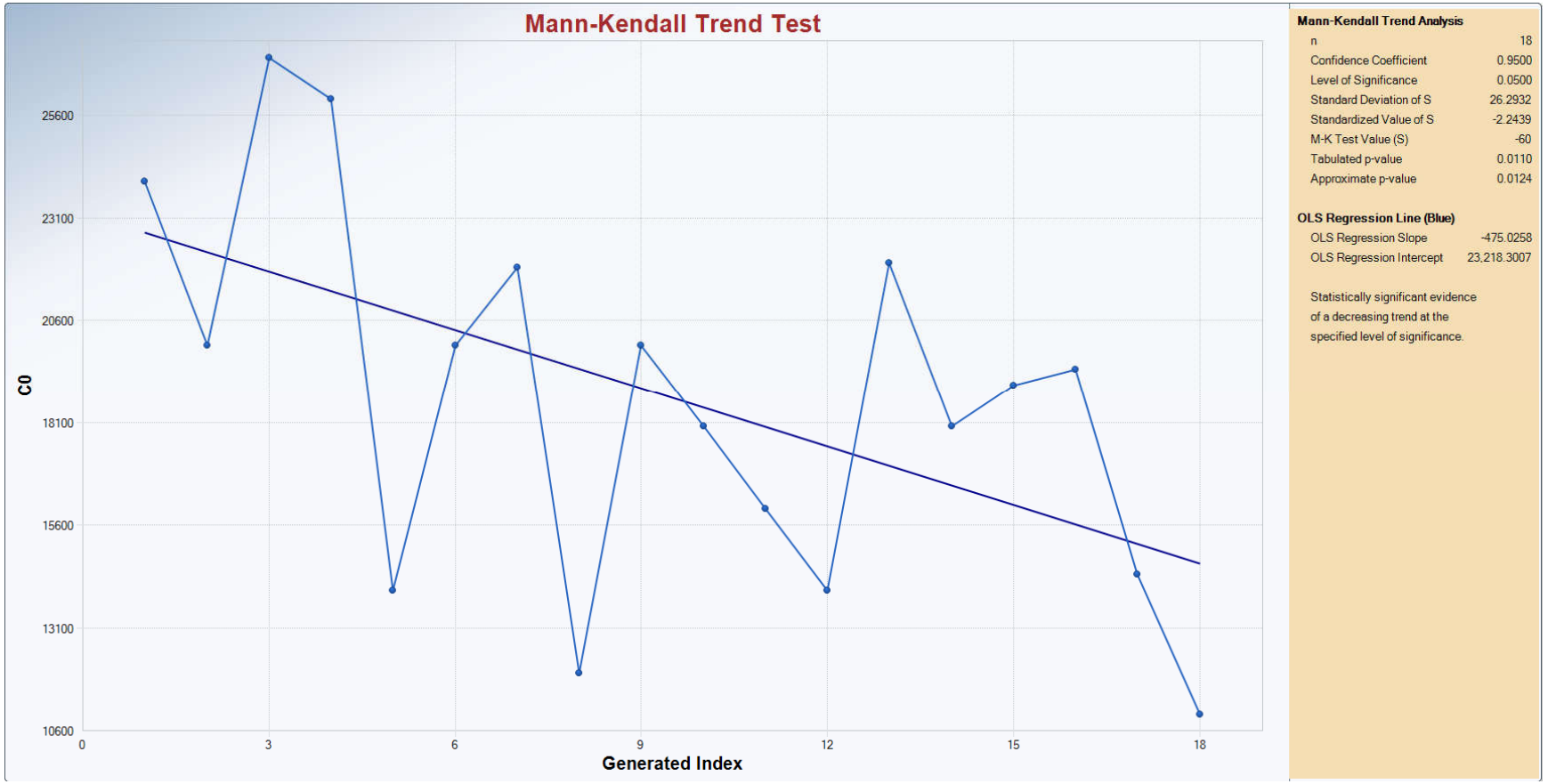
AOC 43G – Well XGM-93-02X – VPH C9-C12



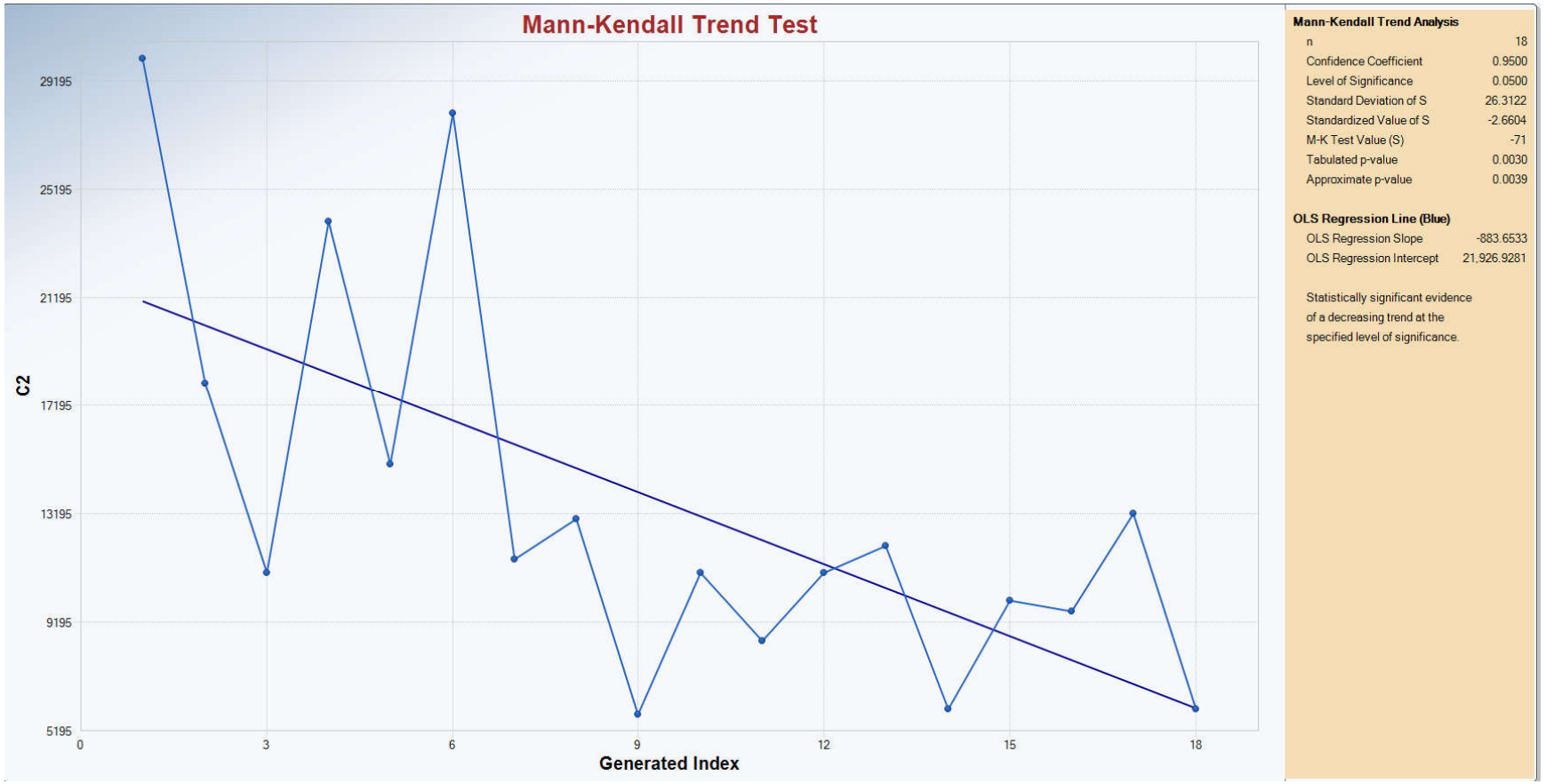
AOC 43G – Well XGM-97-12X – VPH C9-C12



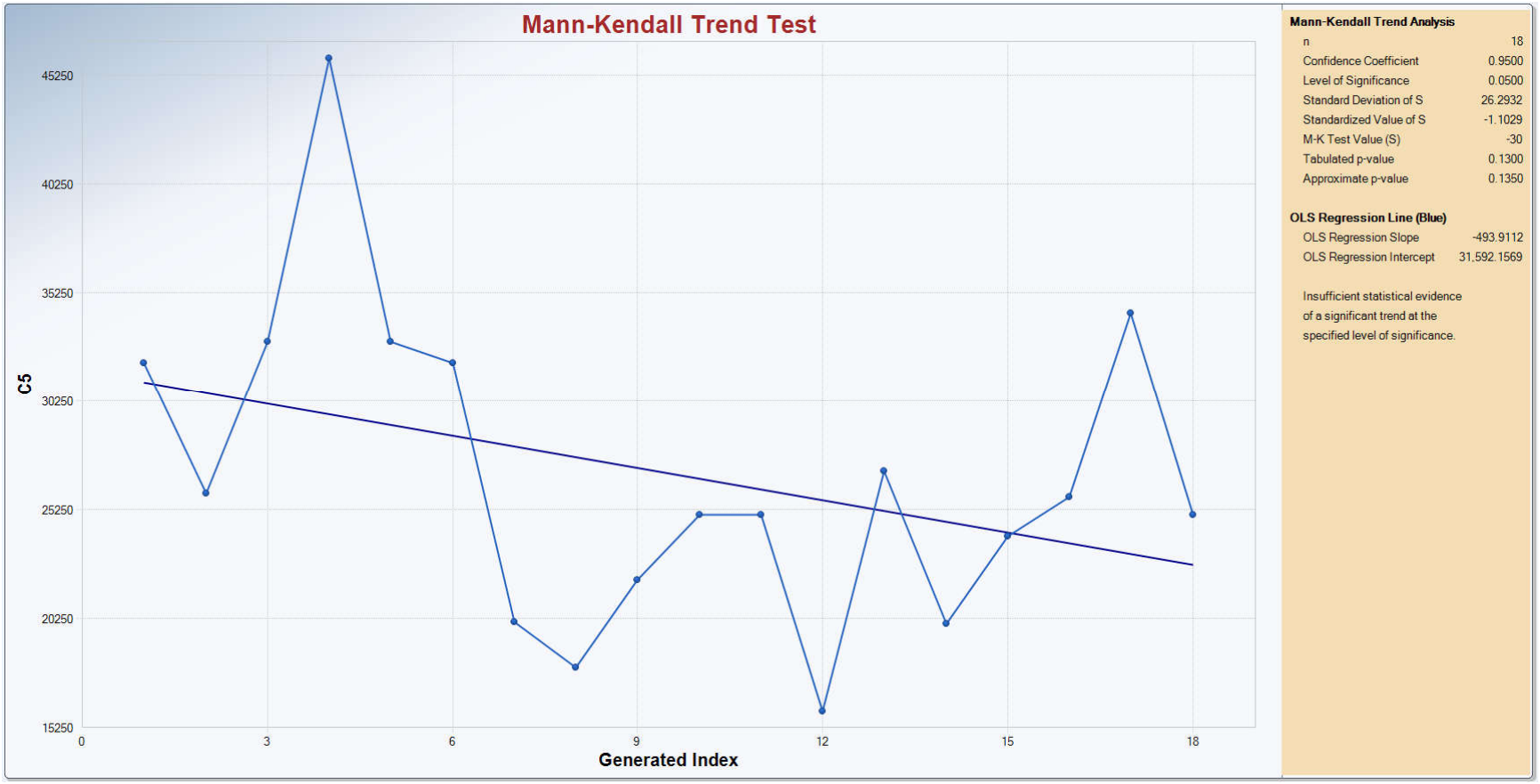
AOC 43G – Well AAFES-2 – Iron



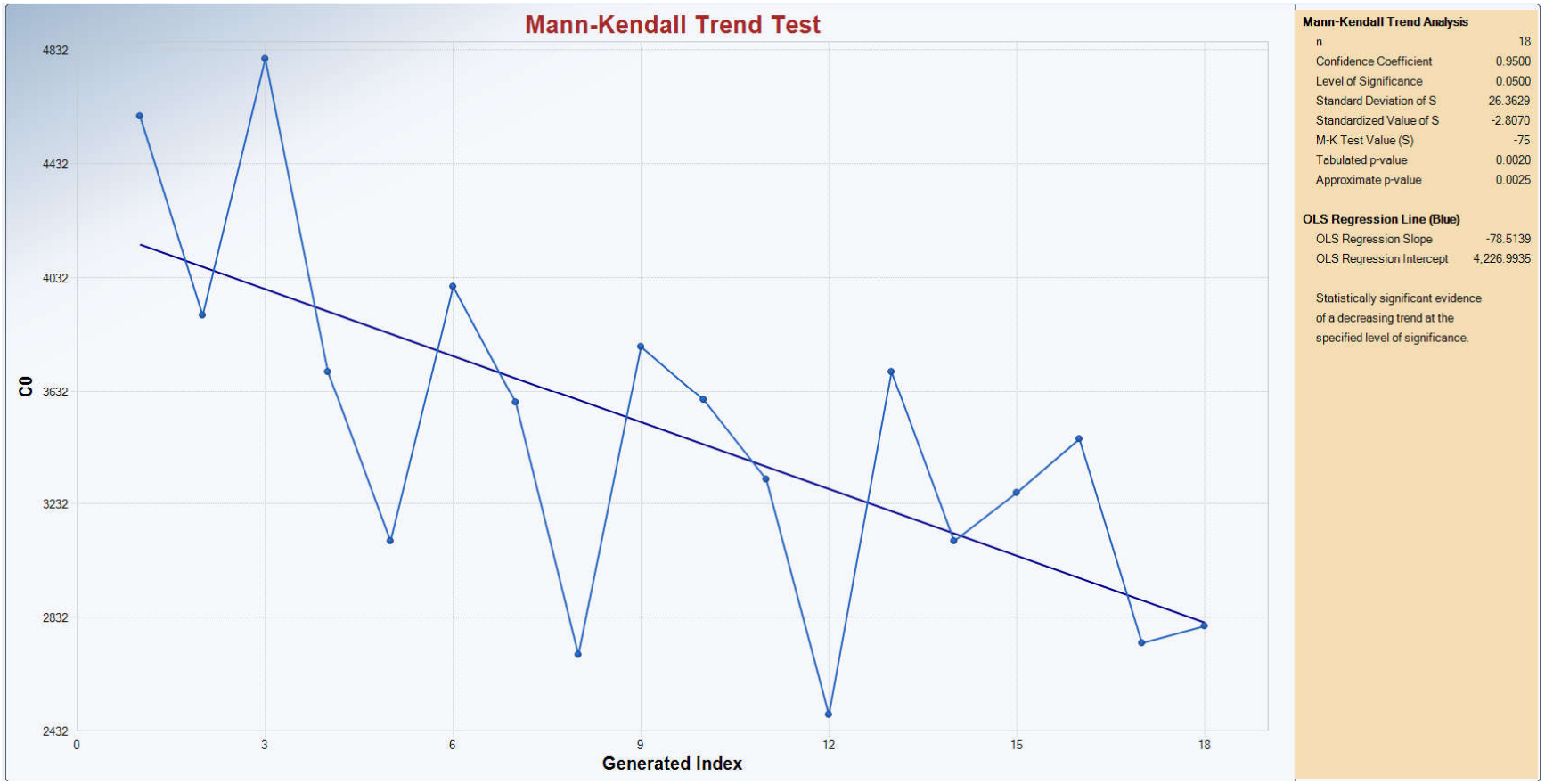
AOC 43G – Well XGM-93-02X – Iron



AOC 43G – Well XGM-97-12X – Iron



AOC 43G – Well AAFES-2 – Manganese



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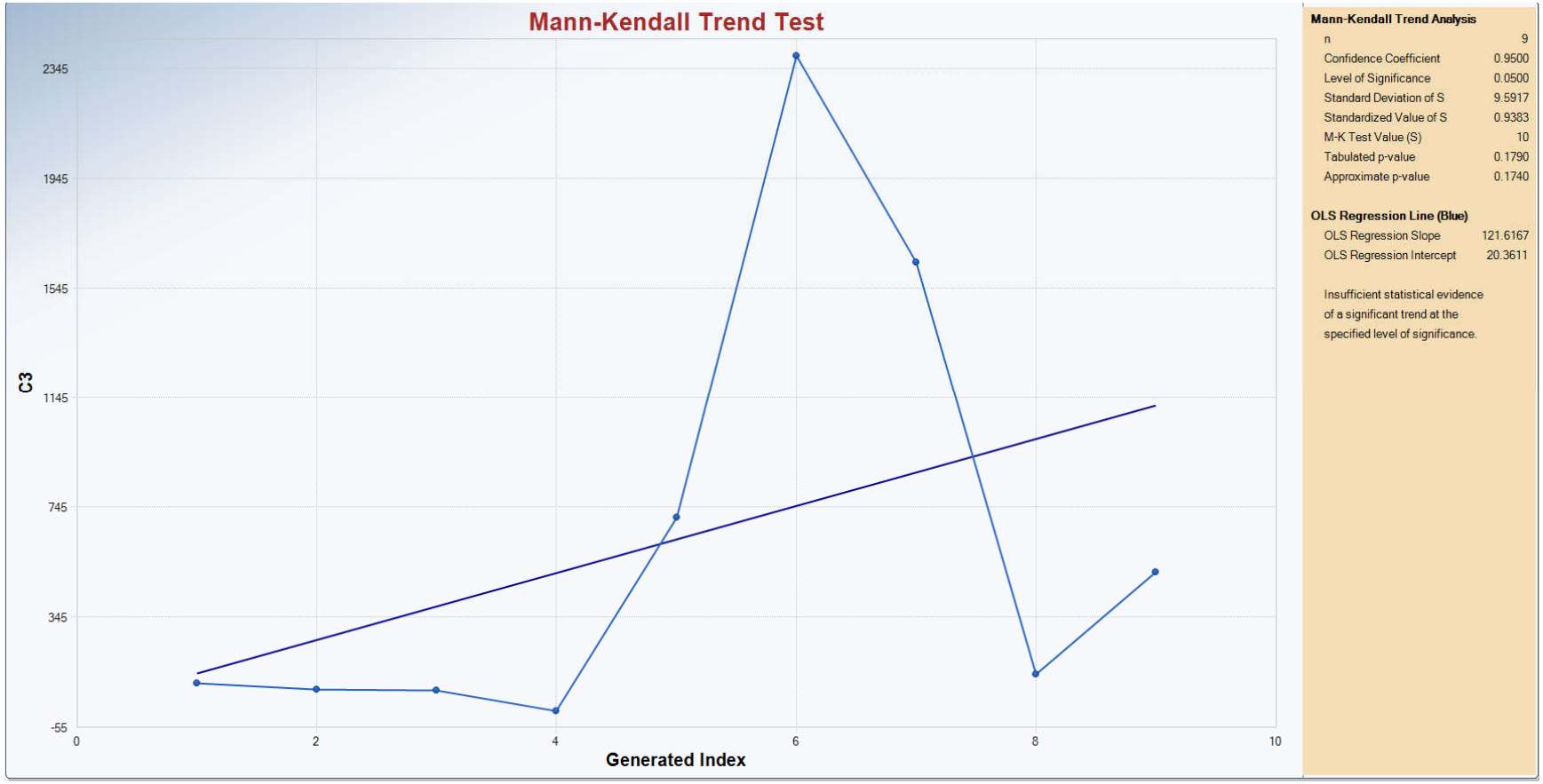
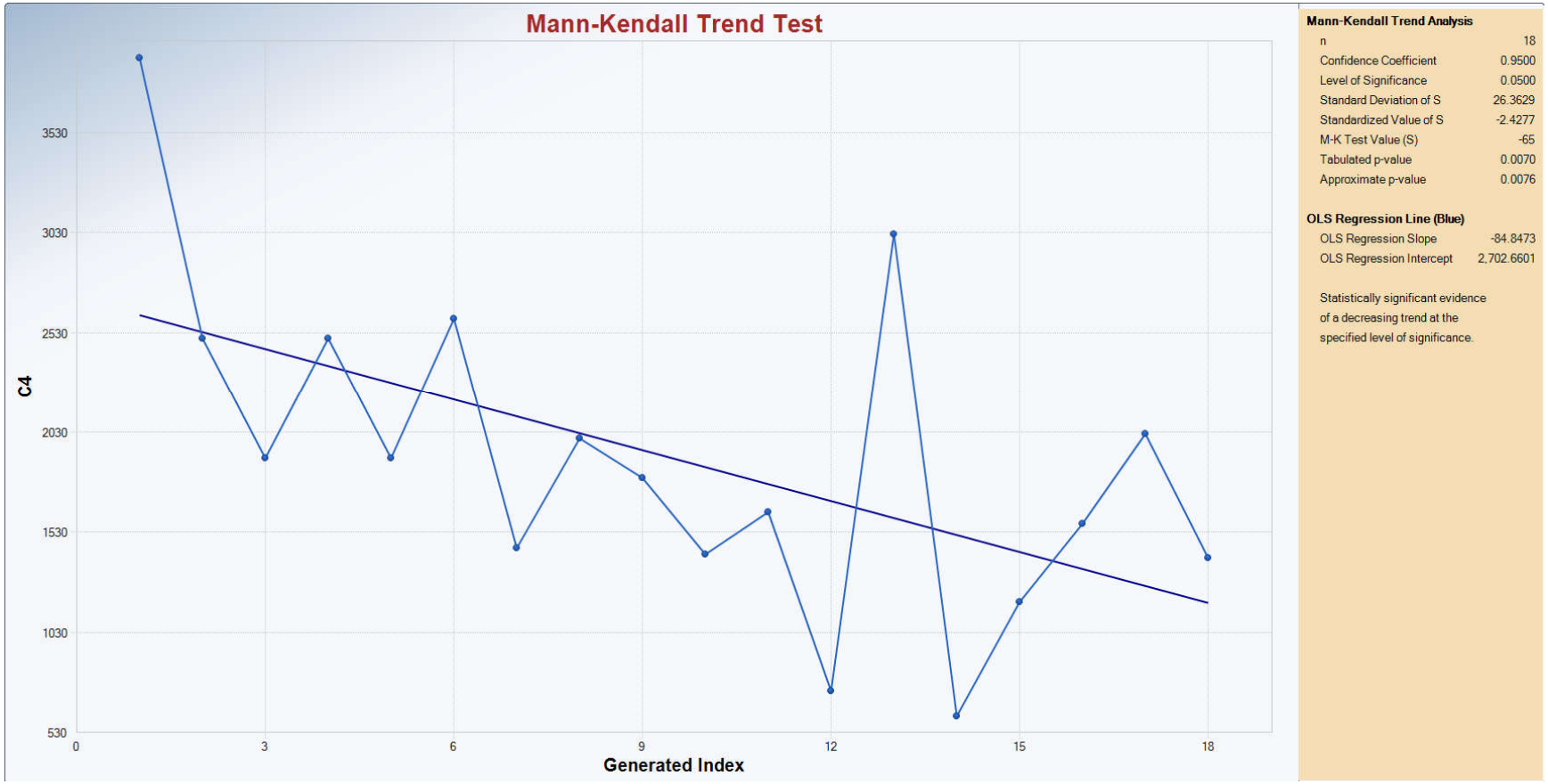
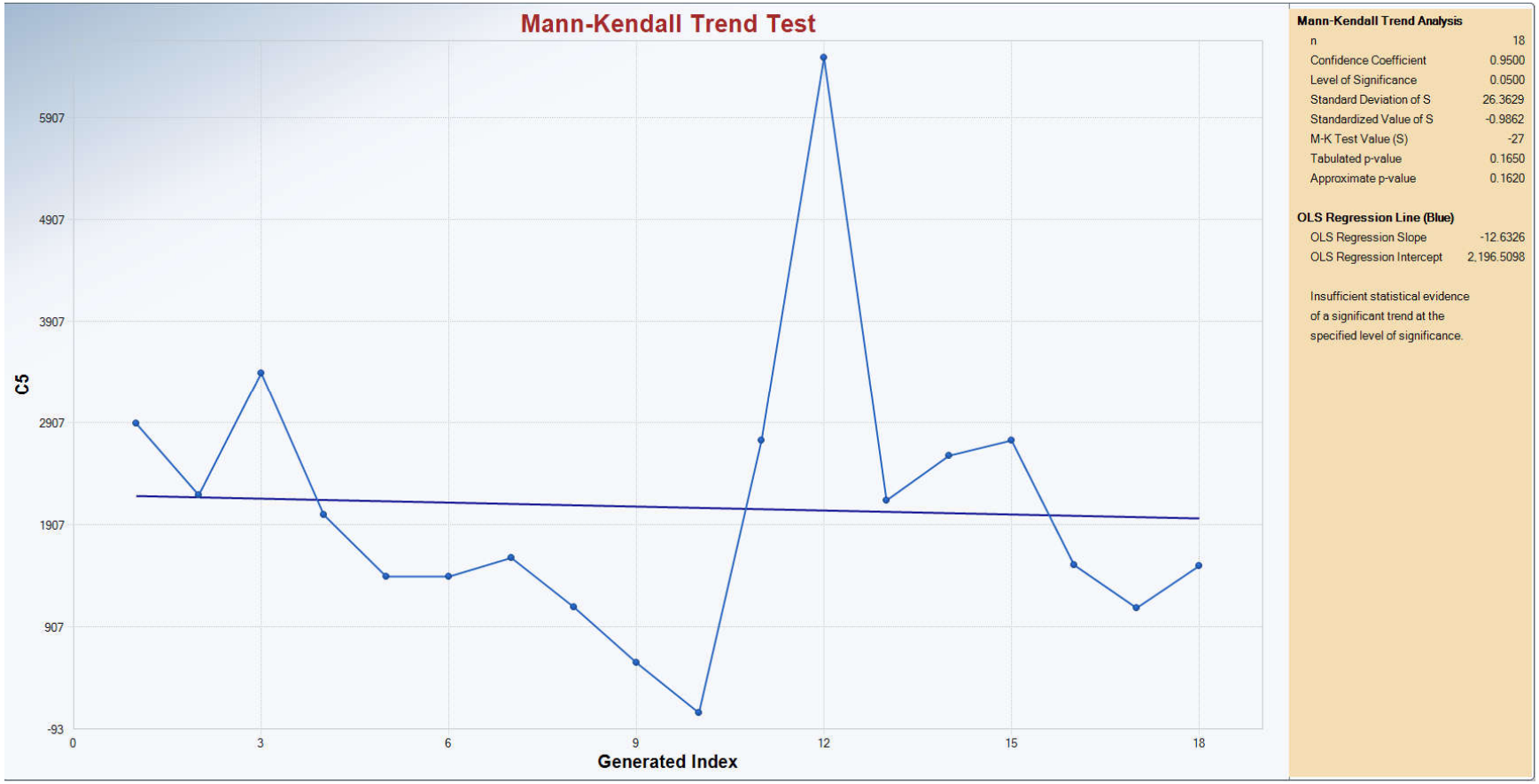


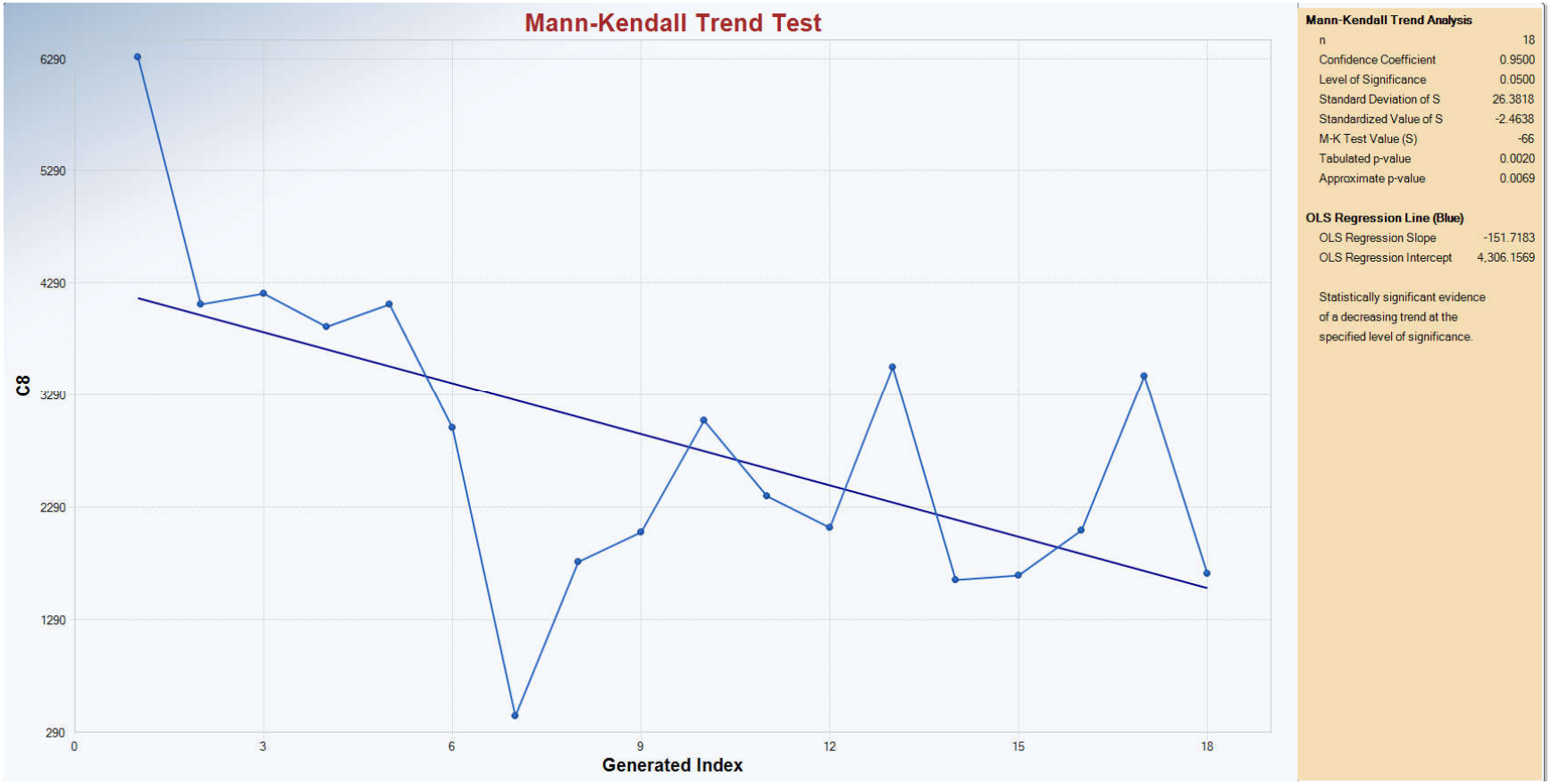
AOC 43G – Well XGM-93-02X – Manganese



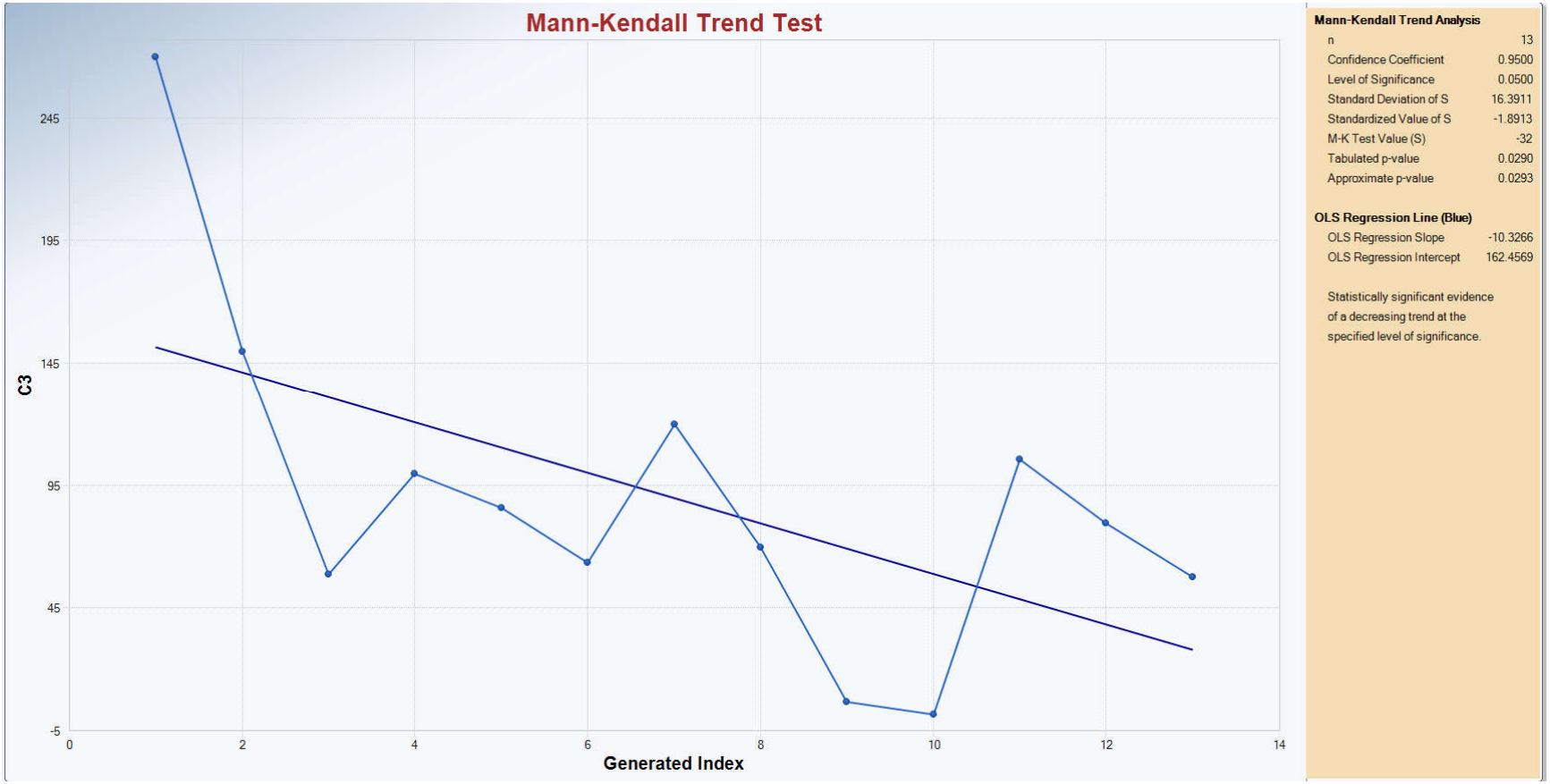
AOC 43G – Well XGM-94-04X – Manganese



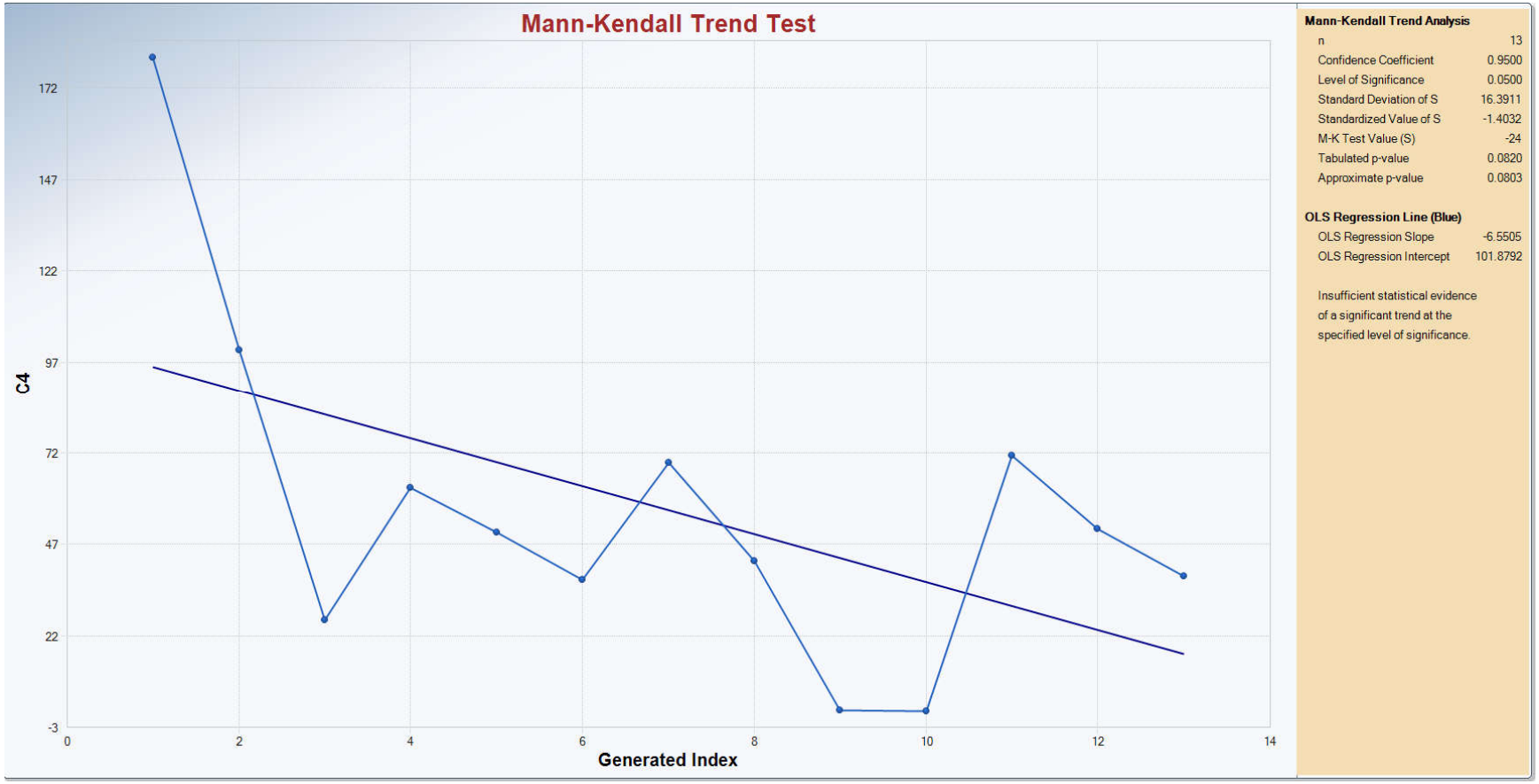
AOC 43G – Well XGM-97-12X – Manganese



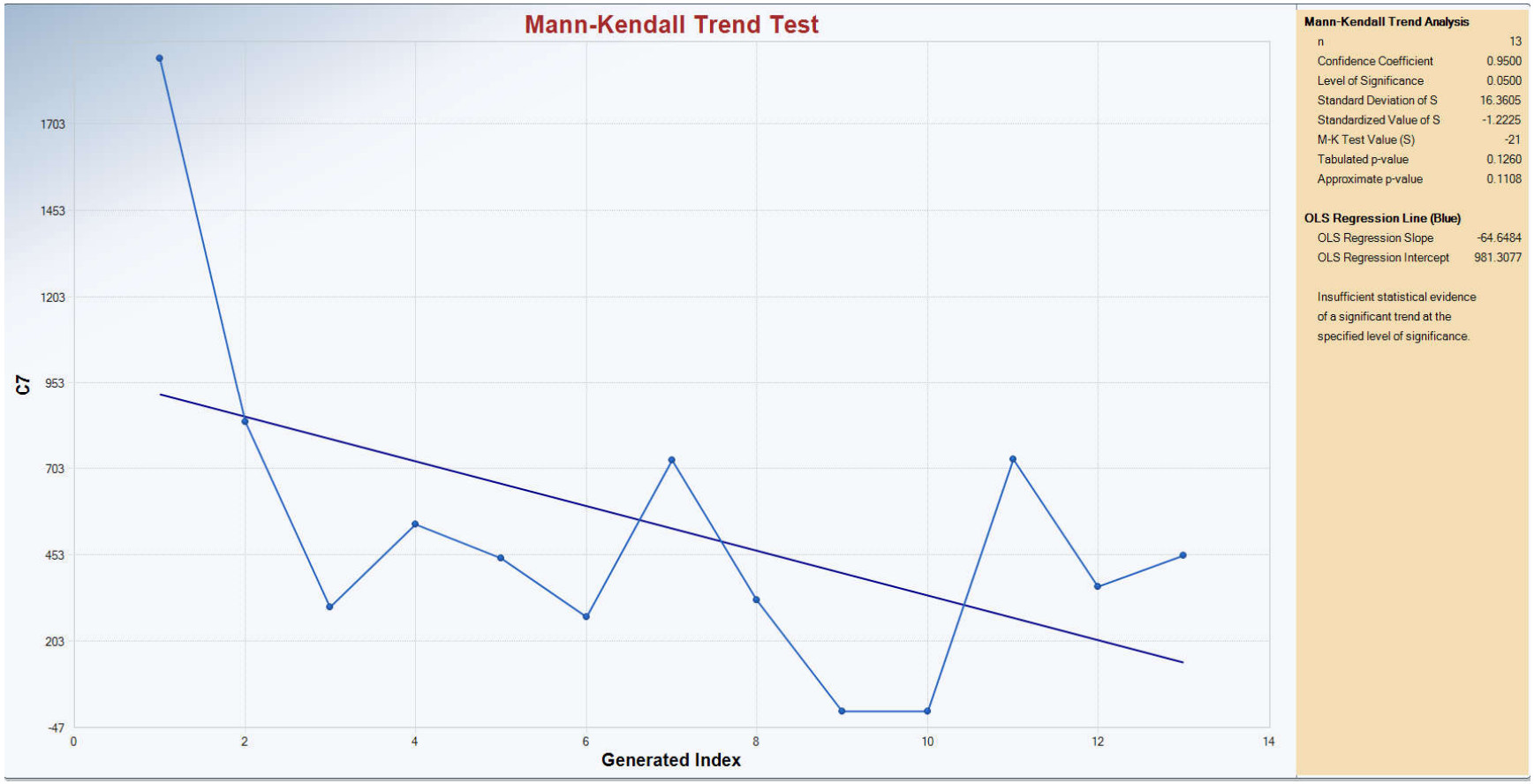
AOC 32 – Well 32M-01-18XBR – 1,3-DCB



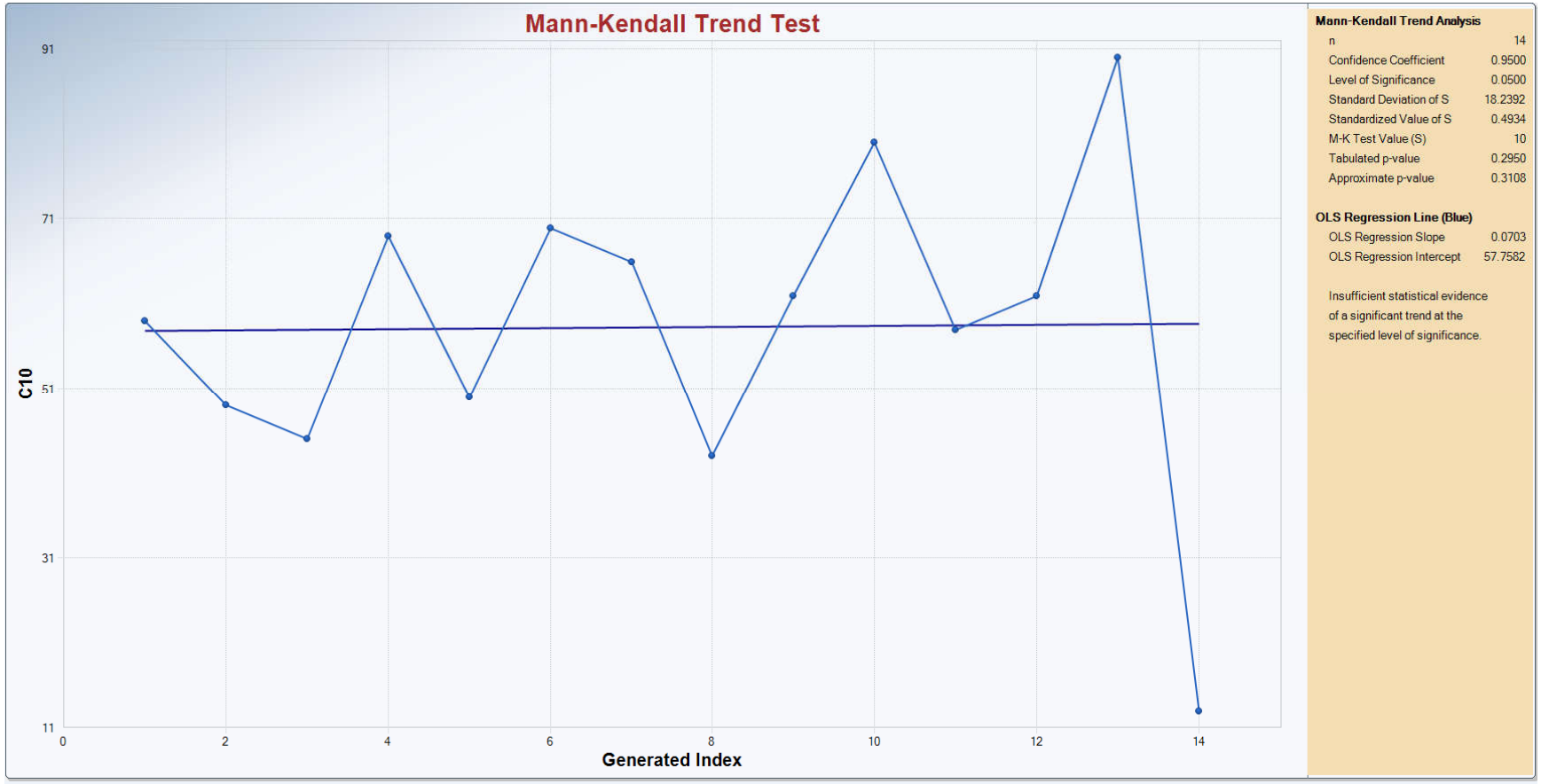
AOC 32 – Well 32M-01-18XBR – 1,4-DCB



AOC 32 – Well 32M-01-18XBR – VPH C9-C10



AOC 32 – Well 32M-01-14XOB – Arsenic



APPENDIX D

ANNUAL LAND-USE CONTROL PLAN CHECKLIST FORMS AND GRANT HOUSING AREA NEW RESIDENT UTILITY BILL INSERTS

Annual Land Use Control Plan Checklist for AOC 57

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.0 of the 2015 Long-Term Monitoring Plan, Devens, Massachusetts. The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the Main Post annual long-term monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information			
Site Name/Location: AOC 57 Area 2 and Area 3 Harvard, MA		Name/Affiliation: Laurie Ekes/KGS	
Remedy Includes: Long Term Monitoring, Institutional Controls, Wetlands protection			
Inspection: AOC was inspected in June 2016 during Annual LTM sampling event.			
Inspectors: Kevin Anderson and Beth Anderson			
II. Documentation and Records			
Item	Yes	No	Comments
Any related notices filed with Devens Enterprise Commission?		X	
Any related Department of Public Works permits found?		X	
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	
II. Physical On-Site Inspection			
Item	Yes	No	Comments
Any evidence of new construction or excavation present in the area of the remedy?		X	
Is there evidence of damage to the remedy?		X	
Any groundwater extraction wells present?		X	
Is there sufficient access to the site for monitoring?	X		
Any signs of increased exposure potential?		X	

Annual Land Use Control Plan Checklist for AOC 57

IV. Interview			
Site Name/Location: AOC 57 Area 2 and Area 3 Harvard, MA			
Name of Interviewer: Laurie Ekes/KGS			
Name of Interviewee: Ron Ostrowski (MassDevelopment) and Neil Angus (Devens Enterprise Commission)			
Position:			
Location of Interview: Telephone/email			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	The building at AOC 57 (112 Barnum Road) is owned by an LLC. It was transferred to the new owner in 2015. Nypro is a tenant in that facility and they are still operating there. There were no changes to the site in 2016. (email from Neil Angus)
Are there any issues with site access for monitoring?		X	
V. Response Actions			
Item	Yes	No	Comments
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	
Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

If any response above are "Yes", please provide coments.

Annual Land Use Control Plan Checklist for AOC 69W

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.0 of the 2015 Long-Term Monitoring Plan, Devens, Massachusetts. The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the Main Post annual long-term monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information			
Site Name/Location: AOC 69W		Name/Affiliation: Laurie Ekes/KGS	
Remedy Includes: Long Term Monitoring, Institutional Controls			
Inspectors: AOC inspected in October 2016 during Annual LTM sampling event.			
Participants: Kevin Anderson			
II. Documentation and Records			
Item	Yes	No	Comments
Any related notices filed with Devens Enterprise Commission?		X	
Any related Department of Public Works permits found?		X	
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	
II. Physical On-Site Inspection			
Item	Yes	No	Comments
Any evidence of new penetrations or repaved cut marks present in the ESMA?		X	
Is there evidence of damage to the remedy?		X	
Any groundwater extraction wells present?		X	
Is there sufficient access to the site for monitoring?	X		
Any signs of increased exposure potential?		X	

Annual Land Use Control Plan Checklist for AOC 69W

IV. Interview			
Name of Interviewer: Laurie Ekes			
Name of Interviewee: Ron Ostrowski (MassDevelopment) and Neil Angus (Devens Enterprise Commission)			
Position:			
Location of Interview: Telephone/email Rostrowski@Massdeveopment.com neilangus@devensec.com			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		Francis W. Parker Charter School occupies the property.
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	Both Mr. Ostrowski and Mr. Angus indicated that there were no changes to site use at AOC 69W in 2016.
Any excavations, planned or emergency, that may have extended to soils below two feet in depth in ESMA?		X	
Are there any issues with site access for monitoring?		X	
V. Response Actions			
Item	Yes	No	Comments
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	
Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

Annual Land Use Control Plan Checklist for AOC 69W

IV. Interview			
Name of Interviewer: Laurie Ekes			
Name of Interviewee: Michelle McKenna			
Position: Business Manager, Francis W. Parker Charter Essential School			
Location of Interview: email/phone mmckenna@theparkerschool.org (978)772-3293			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		Francis W. Parker Charter School occupies the property.
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	Ms. McKenna stated that a roof replacement is planned for the Summer of 2017.
Any excavations, planned or emergency, that may have extended to soils below two feet in depth in ESMA?		X	
Are there any issues with site access for monitoring?		X	

ESMA = excavated soils management area
If any response above are "Yes", please provide coments.

Annual Land Use Control Plan Checklist for AOC 43G

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.0 of the 2015 Long-Term Monitoring Plan, Devens, Massachusetts. The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the AOC 43G annual long-term monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information			
Site Name/Location: AOC 43G; Harvard, MA		Name/Affiliation: Laurie Ekes/KGS	
Remedy Includes: Long Term Monitoring, Institutional Controls, Intrinsic Bioremediation			
Inspectors: AOC inspected in October 2016 during Annual LTM sampling event.			
Participants: Kevin Anderson			
II. Documentation and Records			
Item	Yes	No	Comments
Any related notices filed with Harvard, MA?		X	
Any related Department of Public Works permits found?		X	
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	
II. Physical On-Site Inspection			
Item	Yes	No	Comments
Any evidence of development present in the area of the remedy?		X	
Is there evidence of damage to the remedy?		X	
Any groundwater extraction wells present?		X	
Is there sufficient access to the site for monitoring?	X		
Any signs of increased exposure potential?		X	

Annual Land Use Control Plan Checklist for AOC 43G

IV. Interview			
Name of Interviewer: Laurie Ekes/KGS			
Name of Interviewee: Robert Simeone, BRAC Environmental Coordinator			
Position: BRAC Environmental Coordinator			
Location of Interview: email robert.j.simeone.civ@mail.mil			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	Mr. Simeone stated that he was not aware of any changes affected AOCs in 2016.
Are there any issues with site access for monitoring?		X	
V. Response Actions			
Item	Yes	No	Comments
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	
Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

If any response above are "Yes", please provide coments.

Annual Land Use Control Plan Checklist for AOC 32 and 43A

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.0 of the 2015 Draft Long-Term Monitoring Plan, Devens, Massachusetts. The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the Main Post annual long-term monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information	
Site Name/Location: AOC2 32/43A	Name/Affiliation: Laurie Ekes/KGS
Remedy Includes: Long Term Monitoring, Institutional Controls	
Inspectors: AOC 32/43A was inspected in June 2016 during Annual LTM sampling event.	
Participants: Kevin Anderson	

II. Documentation and Records			
Item	Yes	No	Comments
Any related notices filed with Devens Enterprise Commission?		X	
Any related Department of Public Works permits found?		X	
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	

II. Physical On-Site Inspection			
Item	Yes	No	Comments
Any evidence of new construction or excavation present in the area of the remedy?		X	No construction activities noted. Site is in good condition.
Is there evidence of damage to the remedy?		X	
Any groundwater extraction wells present?		X	
Is there sufficient access to the site for monitoring?	X		
Any signs of increased exposure potential?		X	

Annual Land Use Control Plan Checklist for AOC 32 and 43A

IV. Interview			
Name of Interviewer: Laurie Ekes/KGS			
Name of Interviewee: Jason Pahl			
Position: Distribution Center Manager, O'Reilly Auto Parts (978)784-3134			
Location of Interview: email jpahl@oreillyauto.com			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		Mr. Pahl mentioned that O'Reilly samples two wells annually (which they installed) and submits the results to the DEP. The sampling of their wells is handled by their environmental compliance team at the headquarters in Springfield, MO.
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	
Are there any issues with site access for monitoring?		X	
V. Response Actions			
Item	Yes	No	Comments
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	
Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

If any response above are "Yes", please provide coments.

Annual Land Use Control Plan Checklist for DCL

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.0 of the 2015 Long-Term Monitoring Plan, Devens, Massachusetts. The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the Main Post annual long-term monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information			
Site Name/Location: DCL; Harvard, MA		Name/Affilication: Laurie Ekes/KGS	
Remedy Includes: Long Term Monitoring, Institutional Controls			
Inspection: The DCL monitoring wells and surrounding areas were inspected in June and October 2016 during the LTM sampling events. The Landfill was inspected in November 2016 by the USACE. The Inspection Report is included as Appendix C.			
Inspectors: Kevin Anderson and Beth Anderson during LTM sampling			
II. Documentation and Records			
Item	Yes	No	Comments
Any related notices filed with Devens Enterprise Commission?		X	
Any related Department of Public Works permits found?		X	
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	
II. Physical On-Site Inspection			
Item	Yes	No	Comments
Any evidence of development present in the area of the remedy?	X		There were ongoing construction activites adjacent to the DCL during the spring and fall sampling events.
Is there evidence of damage to the remedy?		X	
Any groundwater extraction wells present?		X	
Is there sufficient access to the site for monitoring?	X		Monitoring well LFM-07-03 was inaccessible due to the construction during spring and fall sampling and could not be sampled.
Any signs of increased exposure potential?		X	

Annual Land Use Control Plan Checklist for DCL

IV. Interview			
Name of Interviewer: Laurie Ekes			
Name of Interviewee: Ron Ostrowski (MassDevelopment) and Neil Angus (Devens Enterprise Commission)			
Position:			
Location of Interview: Telephone/email			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?	X		Construction was ongoing during 2016; see Section II above.
Are there any issues with site access for monitoring?	X		See Section II above.
V. Response Actions			
Item	Yes	No	Comments
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	
Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

If any response above are "Yes", please provide coments.

Annual Land Use Control Plan Checklist for Grant Housing Area

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.0 of the 2015 Long-Term Monitoring Plan, Devens, Massachusetts. The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the Main Post annual long-term monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information			
Site Name/Location: Grant Housing Area		Name/Affilication: Laurie Ekes/KGS	
Remedy Includes: Land Use Controls, Institutional Controls			
Inspectors: Lynne Klosterman			
II. Documentation and Records			
Item	Yes	No	Comments
Any related notices filed with Devens Enterprise Commission?	X		
Any related Department of Public Works permits found?		X	
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	
II. Physical On-Site Inspection			
Item	Yes	No	Comments
Any evidence of new construction or excavation present in the area of the remedy?		X	No new construction in 2016; possible development in 2017.
Is there evidence of damage to the remedy?		X	
Any groundwater extraction wells present?		X	
Is there sufficient access to the site for monitoring?			Not applicable. Sampling is not conducted in this area.
Any signs of increased exposure potential?		X	

Annual Land Use Control Plan Checklist for Grant Housing Area

IV. Interview			
Name of Interviewer: Laurie Ekes/KGS			
Name of Interviewee: Neil Angus (978) 772-8831 x3334			
Position: Environmental Planner; Devens Enterprise Commission			
Location of Interview: email and phone			
Item	Yes	No	Comments
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		The Grant Road Housing Area continues to be developed in accordance with the LUCIP.
Are there any extraction wells at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?	X		The Grant Road Housing Area continues to be developed in accordance with the LUCIP.
Are there any issues with site access for monitoring?			Not applicable. Sampling is not required at this area.
V. Response Actions			
Item	Yes	No	Comments
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	
Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

If any response above are "Yes", please provide coments.

Grant HA and Impact Area Annual Review Checklist		
check√	*task*	*notes*
X	Interview of municipal personnel as to the discovery, reporting and disposal of UXO	Name(s) and title(s) of person(s) interviewed: Ron Ostrowski (978) 784-2936 Chief Joseph LeBlanc (978) 772-4600 Date(s) of interview: October 2016 Any UXO discovered? **X No.** □ Yes. (if "yes", provide detail regarding objects discovered, dates and locations of discovery and information regarding reporting and disposal)
Impact Area only		
check√	*task*	*notes*
X	Physical Inspection	Date conducted: Fall 2016 Condition of fencing, signage and vegetation: **Signage is evident and in good condition. A large tree is down over the fence in one section.** Evidence of unauthorized access? **X No.** Yes. (if "yes", describe): **lock assembly was repaired.** Any surface or near surface UXO? **X No.** □ Yes. (if "yes", provide detail regarding objects discovered, dates and locations of discovery and information regarding reporting and disposal)
X	Interview current owner regarding utility repair or emergency work	Name(s) and title(s) of person(s)interviewed: Jim Moore (978)784-2931 (utilities) Date of interview: April 2017 Work conducted: **None** □ Yes. (if "yes", provide detail information of the work including the date(s) of performance and the discovery of UXO)

Grant HA only		
check√	*task*	*notes*
X	Verify existence of website and content	Spoke to Ron Ostrowski and Neil Angus. Website is **www.devensec.com/planning-docs**. The Soil Management Plan and UXO information pamphlet are available on the website. They stated that these documents are provided to all incoming contractors.
X	Verify the inclusion of required utility bill inserts	Contact: Cathy O'Connor (978) 784-2933. Spoke with Cathy, she includes appropriate inserts in utilitiy bills for the Chance Street Housing area. She keeps a log of the properties (usually new residents) which receive the inserts with their monthly bills.
X	Verify posting of utility bill insert in a conspicuous location	Spoke to Ron Ostrowski and Neil Angus. As noted above, information is available on the Website (www.devensec.com). Warning signs are posted near construction sites, currently near Chance and Antietam Roads.
X	Verify distribution of current soils management policy to construction	Spoke to Ron Ostrowski and Neil Angus. As noted above, information is available on the Website (www.devensec.com). Preconstruction meetings are held prior where contractors are presented with the soils management policy. All workers must attend a UXO training conducted by Chief LeBlanc.
X	Verify that awareness training is being conducted	(1) Did ground intrusive construction activities occur during the reporting period in the Grant HA? **No** (2) At the time of application for the building permit, were contractors who were applying to conduct ground intrusive construction activities in the Grant HA provided a current copy of the Devens Soil Management Policy? **Yes, contractors attend preconstruction meetings and are presented copied of relevant plans. The info is also available on the website, as noted above.** (3) Were all contractors who applied for a building permit required to attend UXO awareness training prior to commencing ground intrusive construction activities? **Yes**
X	Verify that supplemental deed notice has been included in deeds conveying portions of the Grant HA	Spoke to Ron Ostrowski, he stated that Mass Development sold land along Grant Road to a developer, Dan Gainsboro (978) 369-6200 and the appropriate deed notice was included. I spoke to Mr Gainsborough and he confirmed that the deed notice was included.
X	Physical Inspection (to be conducted only if deemed necessary)	X **Not needed.**
		□ Yes. (if "yes", provide date of inspection, the areas that were inspected and whether any surface or near surface UXO were discovered)

Feb 10 , 2016

Dear Devens Residents:

This informational fact sheet is presented to you as a reminder of the unexploded Ordnance (UXO) history, here at Devens. The fact sheet will provide you a brief but comprehensive time line of the studies and work accomplished in identifying and removing UXO from Devens property.

All residents in the Grant Road Housing area will receive this notice in their first utility bill and yearly thereafter. This is part of the educational program on UXO as required by the Army's Land Use Control Implementation Plan (LUCIP) and supported by the EPA and DEP.

If you have any questions or comments on this program, please feel free to call me at 978-784-2936 for further information.

Sincerely,

Thatcher W. Kezer III
Senior Vice President, Devens

IMPORTANT INFORMATION ABOUT UNEXPLODED ORDNANCE (UXO)
FOR DEVENS RESIDENTS, EMPLOYEES, AND VISITORS

Devens is located on land once owned by the U.S. Army. For nearly 80 years from World War I until 1996, Devens' 4,400 acres were used for housing, research, education, administration, and military training purposes.

What parts of Devens were used for military training?
The Army used a 130-acre parcel called the Grant Road Housing Area for a firing range (including a firing point) and the adjacent Oak/Maple Housing areas (32 acres) principally for 37-millimeter anti-tank shells between World War I and World War II. A firing point is an area from which Army personnel fired artillery and other weapons at a target for training purposes. A firing range is the area between the firing point and the target. The Army stopped using the firing range in the 1930s. From the 1960s until the base closed in 1996, the area was occupied by approximately 260 homes for military families.

Where was the firing range?
The firing point was located at the northern end of the Grant Road Housing Area. Targets were located in an "impact area" on the northern slope of Oak Hill that is now surrounded by a fence.

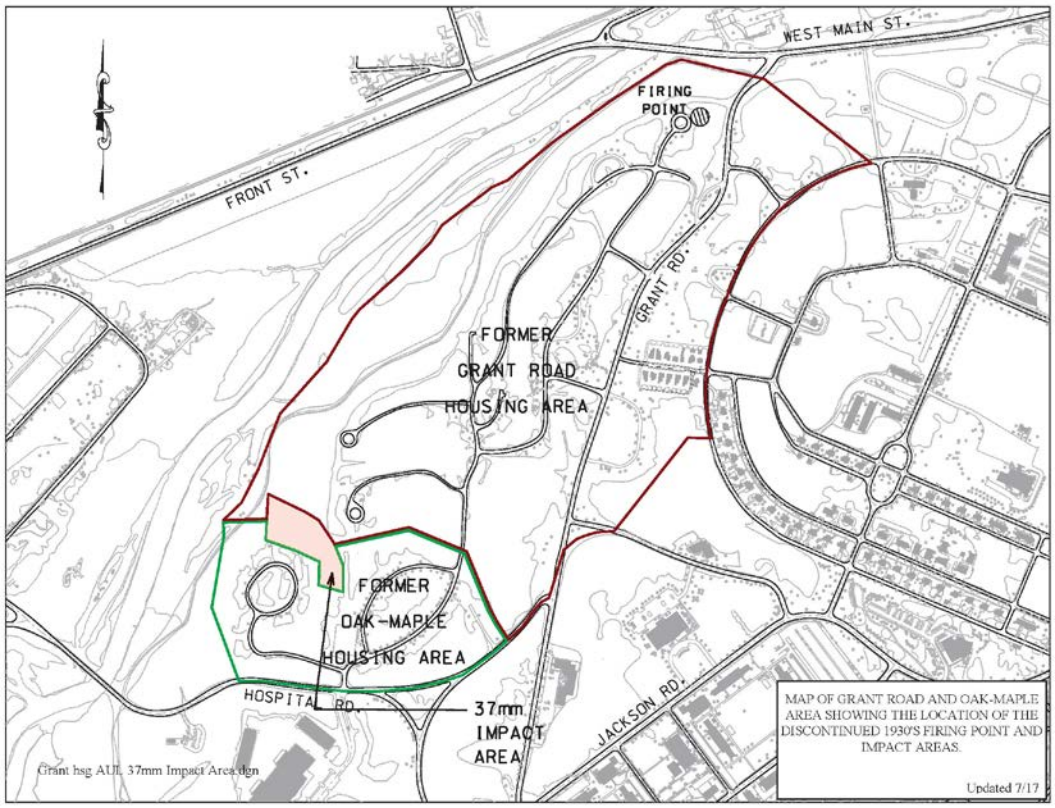


Figure 1. Map of Grant Road and Oak/Maple Housing Areas showing the location of the discontinued 1930's firing range impact area relative to now-demolished 1960's era military housing.

Was UXO found and removed?
In 1994 and 1995 as the base prepared to close, the U.S. Army Corps of Engineers identified training areas and ranges and removed significant amounts of unexploded ordnance (UXO) and scrap metal from the side of Oak Hill. At the Grant Road Housing Area, UXO consists mainly of 37-millimeter anti-tank shells and other munitions that did not explode at the time they were initially used during training exercises. Most of the UXO was in two dense groupings on or near the surface of the ground around former target locations in the Impact Area. In 2004, with the availability of more sensitive survey equipment, MassDevelopment conducted a digital geophysical survey of the entire Grant Road Housing Area to a depth of 18 inches. MassDevelopment then hired specialists who removed additional UXO.

At the Oak/Maple housing areas an investigation and removal of UXO's was conducted 2010-2011. It was determined that the probability of encountering an UXO was extremely low based on the number of anomalies investigated (3,647) and only one (1) UXO found. UXO construction support will be provided by the Army when development commences.

IMPORTANT INFORMATION ABOUT UNEXPLODED ORDNANCE (UXO)
FOR DEVENS RESIDENTS, EMPLOYEES, AND VISITORS (continued)

Do I need to be concerned about unexploded shells or other ordnance?
UXO could remain in the housing and impact areas. However, the Army and MassDevelopment have taken all steps recommended by the U.S. Environmental Protection Agency (EPA) with the review and comment of the Massachusetts Department of Environmental Protection (DEP) to identify and remove UXO from the housing and impact areas. The Army and EPA, with the review and comment of DEP, concluded that (a) all identified UXO in the top 18 inches of the surface have been removed and (b) the presence of UXO deeper than 18 inches is unlikely given the primary type of UXO found—37-millimeter shells—the angle of penetration, soil conditions, and decades of frost heaves. Since technology cannot guarantee complete detection, the possibility remains of additional finds of UXO that could pose explosive safety hazards.

What does UXO look like and what should I do if I suspect I have found it?
UXO may appear as corroded bullets, shells of various sizes, or grenades. Below are pictures of UXO that might be found in Devens.





Figures 2 and 3. Pictured above is (at left) an intact 37mm anti-tank shell and (at right) a hand grenade. Both are shown with a standard 12-ounce beverage can.

The Department of Defense recommends that everyone—including children, family members, and landscapers—learn the three R's of UXO safety: recognize, retreat, and report.

• **RECOGNIZE** – When you may have encountered UXO.
• **RETREAT –** Do not touch, disturb, or move the UXO. Leave the area.
• **REPORT –** Call Devens Emergency Dispatch Center at (978) 772-7200 and report what you saw and where you saw it.

If you are conducting any activity that requires a building permit, call:
• Devens Enterprise Commission: (978) 772-8831

Awareness Briefings:
The Devens Fire Department conducts awareness briefings for contractors and other construction and utility personnel who intend to conduct ground-intrusive activities (such as digging) in Devens. These briefings instruct personnel on the steps both to recognize UXO and to follow should suspect UXO be encountered. Devens residents are also invited to attend an awareness briefing. To receive an awareness briefing, contact the Devens Fire Department at (978) 772-4600.

Where can I get more information?
For information on UXO and UXO removal, call:
• Devens Fire Department: (978) 772-4600
• MassDevelopment: (978) 784-2900

For additional information on the land use controls and implementation plan as well as the Devens Soil Management Policy and its related regulations, visit the Devens Enterprise Commission website at www.devensec.com or call the Devens Enterprise Commission at (978) 772-8831.

APPENDIX E

DEVENS CONSOLIDATION LANDFILL INSPECTION DOCUMENTATION -

USACE GEOTECHNICAL ENGINEERING INSPECTION REPORT 2016

US Army Corps
of Engineers®
New England District

GEOTECHNICAL ENGINEERING ANNUAL INSPECTION REPORT 2016

DEVENS CONSOLIDATION LANDFILL
FORMER FORT DEVENS
DEVENS, MASSACHUSETTS

9 November 2016

1.0 INTRODUCTION

The Resource Conservation and Recovery Act (RCRA) (Subtitle C) Devens Consolidation Landfill (DCL) cap was constructed to eliminate the potential risk to human health and the environment associated with exposure to wastes; minimize off-site migration of contaminants; and limit infiltration to the underlying waste within the landfill area, thereby minimizing leachate generation. The RCRA cap consists of the following layers (working from the waste to the top of the cap): 12-inch thick subgrade/leveling layer immediately above the waste materials; geocomposite gas collection/vent layer; 40 mil very flexible polyethylene (VFPE) geomembrane; geocomposite drainage layer; and a 12-inch thick protective layer overlaid by an 18-inch thick vegetative support layer capped with 6 inches of topsoil. The landfill cap system was completed in the fall of 2002 and restoration of site staging areas was completed in spring of 2003. The DCL landfill general plan is presented in Figure 1. Landfill features are seen in the attached Photograph Log.

Post closure monitoring objectives and procedures are specified in the Operations and Maintenance (O&M) Manual included in the Post Closure Report. The United States Army is responsible for operating, monitoring, and inspecting the facility. Operations features include the routine site entry, gas monitoring, groundwater and surface water sampling, operation of monitoring equipment, scheduled operating events, and unscheduled operating events. Leachate wastewater is permitted to discharge to the Devens Wastewater Sewer System through the authorized industrial wastewater discharge permit.

1.1 Landfill Cap Inspection

United States Army Corps of Engineers personnel performed the 2016 annual inspection of the DCL on 9 November 2016. Observations were made regarding the site entry, vegetative cover, erosion, settlement, and general condition of the various features. Appendix A of this report contains the Inspection and Maintenance Checklists and Appendix B contains the Landfill Gas Summary Table, which summarizes the findings of these inspections.

Overall the landfill cap was in good condition, with no settlement or significant erosion. In general, the cap vegetation appeared healthy and provides good coverage of most areas of the cap, however the original perennial grasses and clover are beginning to get replaced over large areas of the cap, with weedy and some woody species invading. The woody vegetation which has tried to establish gets cut during the annual mowing, however the stalks are left over, and should be removed, and the areas reseeded. Some of the woody species are near gas vents and along riprap areas, and weren't fully cut, and could become established. Maintenance activities to re-establish growth (i.e. re-seeding, fertilizer) should be performed in general over the entire cap, due to a mixture of species which don't promote dense growth. Track marks from mowing were visible during the inspection. Reseeding and grass reestablishment would help with preventing future erosion. The cap and adjacent area vegetation were mowed in the fall of 2016. Annual mowing should be continued.

1.2 Entries and Exit Inspection

The site and access roads are located on private property owned by Mass Development. Gates at the south end of the landfill restrict access. The access road from the entry gate around to the leachate pump station was in good condition. There were no ruts, potholes, or eroded areas. Herbicide treatment should be performed to remove these vegetative species from becoming fully established.

1.3 Fence Inspection

The fence is in good condition. The fence and entry gates, rock features (such as drainage swales and riprap), telephone poles lying on the ground, and the site's inherent relief help to minimize entry onto the site by motor vehicles. These access limitations appear to be adequate at the present time with no signs of vandalism or other unauthorized entry.

2.0 DRAINAGE SYSTEM

The drainage system is designed to drain surface water and infiltrated water off the cap system. It consists of the following components: a geocomposite drainage layer, grass bench drains on the cap with gabion slope drains, a perimeter stone drain along the toe-of-slope, perimeter drainage channels, and a detention basin with a riprap lined outlet area (located at the northeast corner of the landfill). The DCL general plan is presented in Figure 1.

Observations were made regarding the vegetative cover, vegetation types, erosion, and general condition of the drainage system. No maintenance activities were performed during this inspection. Appendix A of this report contains the Inspection and Maintenance Checklist, which summarizes the findings of this inspection.

The cap drainage system was in good condition. Drainage channels were free of sediment and debris. The vegetation on the side slopes of the landfill was healthy and dense. A minimal amount of grass was growing in the gabion slope drains, but there were no species that appeared to have extensive root systems that would disrupt the function of the system. Some woody vegetation has begun to establish in the drainage channel around the perimeter of the landfill (refer to Photograph Log Pictures 5, 15, 16, 17, 21, 31 and 32). The woody vegetation stumps should be removed before they become established in the drainage system components.

The perimeter toe drain was showing signs of vegetation beginning to establish. The toe drain appeared to be functioning properly, and there were no visible signs of erosion or developing slope stability problems. Toe drains should continue to be monitored for vegetation, which should be removed via herbicide treatment periodically to maintain proper operation of the toe drain.

Minor maintenance actions recommended, at this time, for all the drainage channels (gabion slope drains, riprap toe drain, perimeter riprap drainage channels, etc.) includes spraying with an herbicide to eradicate and prevent further maturation of the vegetation that has become established,

and removal of small woody trees and woody stumps which could interfere with the drainage system.

3.0 GAS VENT SYSTEM

A passive gas venting system was installed to facilitate the ventilation of any gases generated from the degrading waste material beneath the landfill cap system. The passive system consists of eleven 6-inch diameter gas vents integrated into the geocomposite gas collection layer immediately beneath the 40-mil VFPE geomembrane.

Appendix A and B of this report contain the Inspection and Maintenance Check List and the Landfill Gas Monitoring table, respectively.

The gas vent system is in excellent condition. Vent pipes V-1, V-2, V-5 and V-6 have broken bird screens, V-7 and V-8 are missing bird screens. All remaining vent pipes and bird/insect screens are intact and functioning as intended. Gas monitoring showed: zero readings for hydrogen sulfide (H_2S), VOC's and carbon monoxide (CO) except for V-4 which had a CO reading of 1; carbon dioxide (CO_2) levels ranging from 5% at V-6 to 18% at V-7; and variable levels of oxygen (O_2), methane (CH_4), and CH_4 Lower Explosive Limit (LEL) levels. A GEM 2000 gas monitor was used to monitor the gas vents for methane, carbon dioxide, oxygen, and LEL. A MultiRAE+ was used to check VOC levels, hydrogen sulfide, carbon monoxide, oxygen, and LEL readings. The gas vents V-5, V-6, V-7 and V-9, have methane levels greater than 100% LEL on the GEM 2000 and are the highest vents and located near the top of the landfill. Although historically there are high LEL readings for some of the higher elevation vents on the landfill, the Army believes this is not a concern for the reasons that follow. The landfill is fully encapsulated and hence the methane production is the result of the natural degradation of the organics from within the soils and sediments excavated and placed in the landfill during the construction process. The majority of the methane appears to be within the confined space of the respective vents of the passive gas collection system. The reason that the methane is predominantly observed in the higher elevation gas vents is that methane is lighter than air (predominantly N_2 and O_2). Once the methane has been passively vented to the surrounding atmosphere, it disperses rapidly and should not pose a significant ignitability risk. At the present time, an assessment of an active system does not seem to be warranted as these wells are passively vented directly to the atmosphere and the vents are not located near any potential ignition source.

4.0 CORRECTIVE ACTION

The landfill cap, access roads, drainage system, and gas vent monitoring system were in good condition. Repairs consisting of reseeding sparse vegetation over the landfill in general and removing woody stalks and roots should be performed during the next seed establishment period.

Minor maintenance actions for the drainage system that are recommended at this time include eradication of all vegetation that has begun to show establishment within drainage channels (gabion slope drains, riprap toe drain, perimeter riprap drainage channels, etc.) using an herbicide. Additionally, herbicide treatment should be performed on the grassy vegetation that has begun

establishment in the crushed stone access roads to remove these vegetative species from becoming fully established.

Routine maintenance activities that should continue to be performed are annual mowing and monitoring and control of encroaching vegetation in the drainage system. The annual mowing of the cap should be done in late August to avoid harming ground-nesting songbirds. Mowing should also include the adjacent open field areas.

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FIGURE

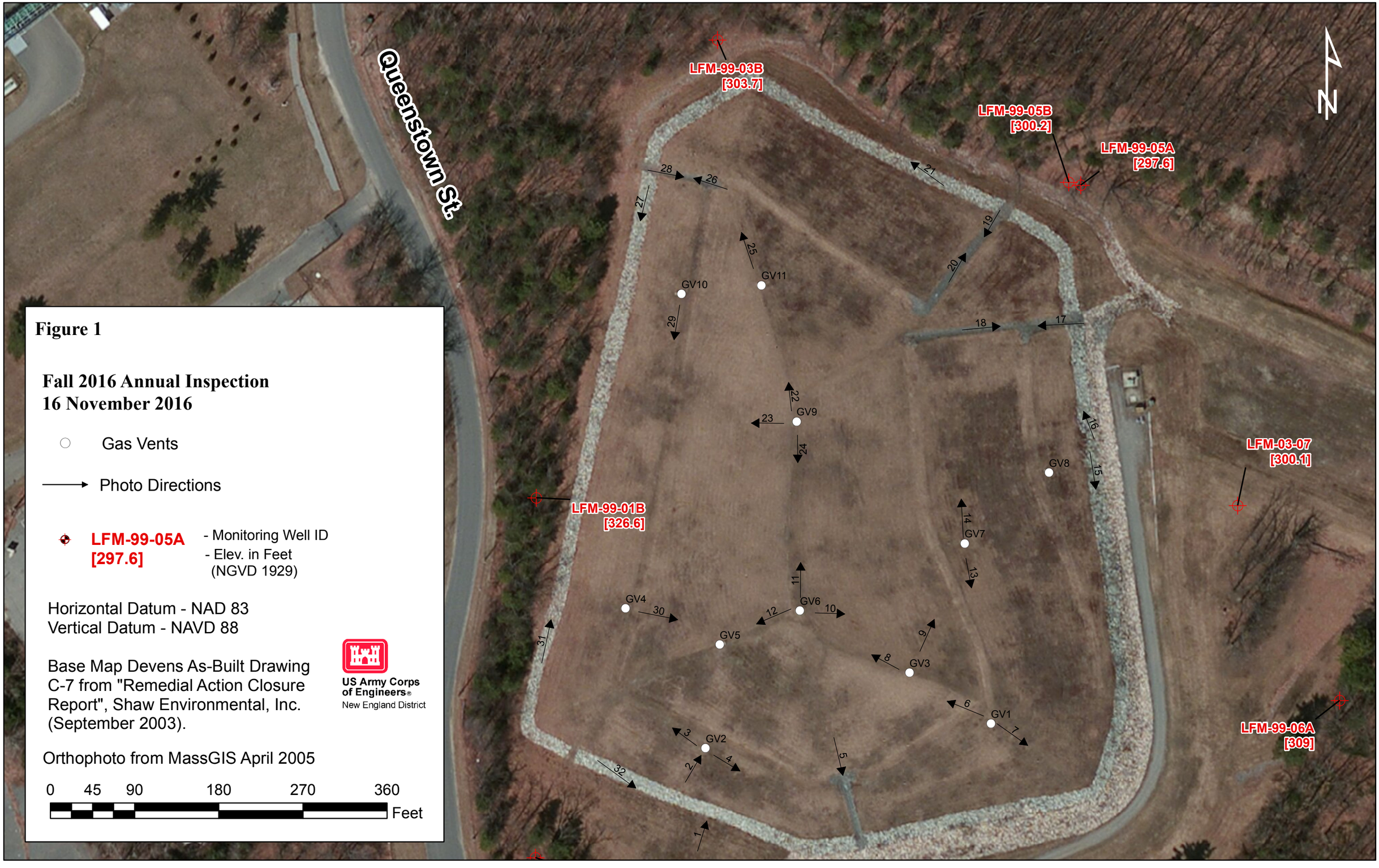

Figure 1

Fall 2016 Annual Inspection
16 November 2016

○ Gas Vents

→ Photo Directions

LFM-99-05A - Monitoring Well ID
[297.6] - Elev. in Feet (NGVD 1929)

Horizontal Datum - NAD 83
Vertical Datum - NAVD 88

Base Map Devens As-Built Drawing C-7 from "Remedial Action Closure Report", Shaw Environmental, Inc. (September 2003).

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Orthophoto from MassGIS April 2005

0 45 90 180 270 360
Feet

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PHOTOGRAPH LOG

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Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



Picture 6

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Picture 7



Picture 8



Picture 9



Picture 10



Picture 11



Picture 12

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Picture 13



Picture 14



Picture 15



Picture 16



Picture 17



Picture 18

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Picture 19



Picture 20



Picture 21



Picture 22



Picture 23



Picture 24

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Picture 25



Picture 26



Picture 27



Picture 28



Picture 29



Picture 30

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Picture 31



Picture 32

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APPENDIX A

Inspection & Maintenance Check List

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Inspection & Maintenance Check List
Devens Consolidation Landfill

Inspector's: Gay, Fransioli, Heim Date: 9 November 2016

Item	Description of Inspection Items	Checked (X)	Comments
Landfill Cap	Inspect for Eroded Areas	X	No actively eroding areas were observed.
	Inspect for Settlement and Ponded Water	X	No settlement or ponded water was observed.
	Inspect for Wetland Species Encroachment	X	No encroachments of wetland species was observed
	Inspect Vegetated Areas	X	Vegetation is established in some areas, however is sparse in some areas also. Last mowed in Fall 2016. The sparse areas are getting larger over the years and over seeding program is required to reestablish thicker grassy areas on most of the cap. Signs of mowing tracks are being shown throughout the cap and can lead to severe erosion if not reseeded. Additionally some woody species are mowed down each year, however the stalks need to be removed. Roots are establishing around gas vent pipe and throughout the soil cap and if the stalks are not removed thicker stalks will be established and need to be removed at a more costly rate.
Drainage System	Inspect Stone Toe Drain	X	Toe drains are in good condition and appear to be functioning as designed. Vegetation is beginning to grow in and around the toe drain areas. Apply herbicide as needed to control vegetation and saplings.
	Inspect Gabion Slope Drains	X	The gabion slope drains are in good condition and appear to be functioning as designed. Gabions are beginning to have vegetation growth through the gabion baskets. Apply herbicide as needed to control vegetation and saplings.
	Inspect for Eroded Areas	X	No erosion noted, not action required at this time.
	Inspect for Debris & Unwanted Vegetation in Drainage Channels	X	No debris observed at this time. Vegetation located in the swales should be sprayed with an herbicide annually.
	Inspect Rip-Rap Areas	X	Riprap is in good condition, no action required at this time.

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Item	Description of Inspection Items	Checked (X)	Comments
Gas Vent System	Gas Monitoring Vent's 1 through 11	X	Results Gas sampling was conducted for VOC's, O_2, H_2S, LEL, CO, CO_2, and CH_4. The results can be found in Appendix B.
	Inspect Vent Pipe and Bird Screen	X	All vent pipes are in good condition. Some bird/insect screens are missing or broken and need to be replaced.
Security Fence	Inspect for Damage to or Breeches in Fencing	X	Security fence and gates are in good condition.
Access Road	Inspect for Erosion, Potholes and Rutting	X	Access road is in good condition. The construction on the northeast corner is almost complete.

Description of Maintenance Activities Performed (as necessary):
No maintenance activities performed during inspection.

The following maintenance and monitoring activities are recommended:

1. Annual inspections for all components of cap and perimeter.
2. Annual mowing of grass areas and clearing of brush or woody vegetation from cap should be performed, as required.
3. Filling of erosion areas and animal burrows, as required.
4. Seeding of sparsely vegetated/woody vegetated areas on the cap. Areas are numerous and not shown on plan.
5. Spray unwanted weed vegetation in gabion slope drains, riprap toe drain, perimeter riprap drainage channels, and crushed stone access roads with an herbicide.
6. Removal of woody species.
7. Fix broken or missing screens.

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APPENDIX B

Landfill Gas Monitoring

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APPENDIX B

Devens Consolidation Landfill
Landfill Gas Monitoring

INSPECTOR: Dara Gay, Ken Heim, Doug Fransioli TITLE: Civil Engineer, Geologist, DA Intern DATE: 11/16/2016

ORGANIZATION: CENAE-EP-WG WEATHER: Cloudy 50°

BAROMETER*: 29.32 TIME: 10:49
BAROMETER*: 29.32 TIME: 11:15
BAROMETER*: 29.32 TIME: 11:45

Vent No.	VOC ppm Multi RAE+	H_2S ppm Multi RAE+	LEL % Multi RAE+	CO ppm Multi RAE+	O_2 % Multi RAE+	O_2 % GEM 2000	CO_2 % GEM 2000	CH_4 % GEM 2000	LEL % GEM 2000	Remarks
V-1	0	0	0	0	3.7	3.6	11.6	0.1	0.003	Screen Broken
V-2	0	0	0	0	1.5	1.2	14	0.2	0.005	Screen Broken
V-3	0	0	High	0	0	0	10.5	4.2	0.004	
V-4	0	0	23	1	0	0	16.2	1.9	0.039	
V-5	0	0	High	0	0.5	0.4	7.9	11.2	+OR	Screen Broken
V-6	0	0	High	0	1.1	0.5	5	22.3	+OR	Screen Broken
V-7	0	0	High	0	0.1	0	18.5	5.2	+OR	No Screen
V-8	0	0	0	0	4.7	4.6	12	0.2	0.004	No Screen
V-9	0	0	High	0	0.1	0	13.7	17.8	+OR	
V-10	0	0	High	0	0	0	17.7	3.2	0.64	
V-11	0	0	High	0	0.4	0.2	15.2	2.8	0.056	

*High.+OR reading means LEL >100

CALIBRATION INFORMATION:

Instrument: Multi RAE+
Calibrated by: US Environmental Rental Co.
Calibrated With: 50 ppm CO, 10 ppm H_2S, 50% LEL (CH4), 20.9% O_2 , PID 100ppm, CO2 0 ppm

Instrument: GEM 2000
Calibrated by: US Environmental Rental Co.
Calibrated With: 15% CH_4, 15% CO_2, 20.9% O_2 , H_2S 0

* Note: Barometric Pressures were obtained from the GEM 2000