Release Abatement Measure Status Report No. 2
Site Improvement Activities
Former General Electric Facility
50 Fordham Road, Wilmington, MA
RTN 3-0518

Prepared for:

Lockheed Martin Corporation/Wilmington Realty Trust

Prepared by:

AECOM

April 27, 2018

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Section 1
Introduction

Pursuant to the Massachusetts Contingency Plan (MCP) 310 CMR 40.0445, AECOM Technical Services, Inc. (AECOM), on behalf of Lockheed Martin Corporation (Lockheed Martin) and for Wilmington Realty Trust (WRT), has prepared the following Release Abatement Measure (RAM) Status Report No. 2 for the former General Electric Company (GE) Facility located at 50 Fordham Road, Wilmington, Massachusetts (site). This report is being submitted within six months of the submittal of the initial RAM Status Report (No. 1) for the site, which was submitted to the Massachusetts Department of Environmental Protection (MassDEP) on November 3, 2017. The RAM Plan was submitted to the MassDEP on July 3, 2017. Within this report, "property" pertains to the address (40-50 Fordham Road) of the former GE Facility, and "site" refers to the MCP disposal site, identified as 50 Fordham Road and release tracking number (RTN) 3-0518.

A Tier Classification Extension submittal was provided to MassDEP on July 7, 2017 prior to RAM activities beginning. In addition, no issues were identified by MassDEP as part of their screening level review of the RAM Plan.

In accordance with the MCP, 310 CMR 40.0445(2), this RAM Status Report contains the following:

(a) the status of response operations;

(b) any significant new site information or data;

(c) details of and/or plans for the management of Remediation Waste, Remediation Wastewater and/or Remedial Additives;

(d) any other information that MassDEP determines to be necessary to complete during its review and evaluation of a Status Report; and,

(e) a Licensed Site Professional (LSP) Opinion as to whether the RAM is being conducted in conformance with the RAM Plan and any conditions of approval established by MassDEP.

The MassDEP Bureau of Waste Site Cleanup (BWSC) Transmittal Form BWSC-106 is being submitted electronically to MassDEP concurrently with this status report via eDEP. Refer to the July 3, 2017 RAM Plan and the November 3, 2017 RAM Status Report No. 1 completed by AECOM (AECOM, 2017a & 2017b) for additional details regarding release history, proposed RAM activities, and RAM activities completed during the first 120-days of implementation.

1.1 CONTACT INFORMATION

The following site-specific information is provided.

Person Conducting RAM And Property Owner:	Wilmington Realty Trust Gary Stanieich 424 Broadway Somerville, MA 02145 (603) 860-5508 Telephone: 978-905-2100
Person Completing RAM Submittals:	Lockheed Martin Corporation Paul E. Calligan 6801 Rockledge Drive MP CCT 246 Bethesda, MD 20817 (240) 687-1813
LSP for the RAM:	Daniel W. Folan, PhD, PG, LSP LSP # 1736 AECOM 250 Apollo Drive Chelmsford, MA 01824 (978) 905-2114

The RAM activities outlined herein and related to the property improvement and re-development activities were conducted by WRT, with AECOM observing and documenting the work for MCP submittals and completing the submittals on behalf of WRT and Lockheed Martin.

1.2 DISPOSAL SITE AND RAM BACKGROUND

The WRT property is designated as 50 Fordham Road in Wilmington, Massachusetts, as shown on **Figure 1-1**, Site Location Map, though it consists of buildings identified as 40 and 50 Fordham Road. The property consists of a 13-acre parcel east of Fordham Road and north of Concord Street, within a mixed commercial industrial area. The 13-acre parcel is located both in the towns of Wilmington and North Reading, in Middlesex County, Massachusetts.

The property is located in a mixed commercial, industrial area, and near residential areas. It is bounded by wooded wetland to the east and north, beyond which are residential properties. Fordham Road is located along the western property boundary with commercial/industrial parcels further west and north along Fordham Road. The former Converse, Inc. property and other commercial/industrial properties are located to the south along Concord Street.

The property contains a number of former industrial buildings, paved parking areas, and an active sewage and wastewater treatment plant for the facility. The buildings are identified as Building 1 and 1A, which are attached, and Building 2. A Treatment Shed that houses an inactive groundwater treatment system is still present. Building 3, the Oil House, the concrete ramp to the former Oil House, the Guard Shack, the former Pump House/Vault, the former Tank Farm, and the original Tank Farm area groundwater treatment building have been removed. The current site plan is included as **Figure 1-2.**

WRT, formerly the Barbo Realty Trust (BRT), is the current property owner and has owned the property at least since the property was developed in the late 1960s.

A RAM Plan was submitted to the MassDEP for WRT on behalf of Lockheed Martin on July 3, 2017 detailing the proposed redevelopment and construction work and associated monitoring activities to be completed at the site by WRT. The objective of the RAM is to ensure that potentially impacted soil, groundwater, or soil gas encountered during construction activities at the property are managed in accordance with the requirements set forth in the MCP as well as the

Notice of Activity and Use Limitation (AUL) for the property signed July 2015 and recorded on September 28, 2015 at the Middlesex North Registry of Deeds, the MCP 310 CMR 40.0000, and Policy #WSC-00-425. Based upon the MassDEP's WSC-00-425 policy, "construction activities at a disposal site meet the regulatory definition of a remedial action, to the extent that such activities involve the potential removal, disposal and relocation of released oil or hazardous material."

An initial RAM Status Report No. 1 was submitted to the MassDEP for WRT on behalf of Lockheed Martin on November 3, 2017, detailing RAM activities completed during the 120-day period following the submittal of the RAM Plan. WRT initiated excavation activities related to the redevelopment of the site under the RAM in July 2017. Prior to the submittal of the RAM Plan, limited site work was completed, including site preparation, demolition of various above-grade and sub-grade structures, the removal of surface concrete and asphalt paving from areas throughout the site, and exploratory test pits adjacent to select excavation areas. After the submittal of the RAM Plan and Tier Classification Extension, subsurface excavation was completed in the following planned construction areas as detailed in the RAM Status Report No. 1: wastewater tight tank and associated trenching, drainage swale excavations, and utility, hydrant, and curbing excavations. During these excavations, AECOM personnel observed and field screened soils using a photoionization detector (PID) for the purposes of providing input relative to the segregation, management, and sampling of soils. Excavated soils were segregated into stockpiles and sampled for site constituents of concern (COCs). Analytical results were reviewed to determine if the soil could be re-used on-site or if it was necessary to transport the stockpiled soil off-site for either disposal or recycling at an appropriate facility. During the initial RAM activities discussed in the RAM Status Report No. 1, all soil was able to be re-used on-site with the exception of one stockpile (Stockpile 10). The transportation of this soil off-site for recycling was completed during this reporting period and is discussed in Section 2 below.

Section 2
RAM Status

WRT initiated excavation activities related to the redevelopment of the site under a RAM in July 2017. The majority of the first phase of site work was completed prior to and documented in the first RAM Status Report submitted in November 2017. Since then, limited excavation and site work under the RAM has been completed during the month of October 2017. This work included small excavations related to ongoing site redevelopment activities, including parking lot islands, light poles and drainage swales. The second and final phase of site work is anticipated to be completed in spring/summer of 2018. The three areas (light poles, islands, and northern drainage swale) where soil excavation, grading, staging, and re-use of soils with levels less than Method 1 S-1 risk standards occurred on-site in accordance with the RAM Plan to date are depicted on **Figure 2-1**. Information related to the limited excavation completed during this reporting period, including, field observations, amount and size of stockpiles generated, and laboratory analytical data and re-use options for the stockpiles generated are detailed in the soil management section below.

2.1 SOIL MANAGEMENT

During the minimal excavation activities completed during this reporting period (October 2017 through March 2018), AECOM personnel observed multiple excavations for the purposes of providing input relative to the segregation, management, and sampling of soils. All excavated soils were segregated into stockpiles based on discreet excavation area. After excavation of each area was complete, the generated soil stockpile was sampled for analysis of site COCs including: volatile organic compounds (VOCs), extractable petroleum hydrocarbons (EPH), volatile petroleum hydrocarbons (VPH), and total arsenic, chromium, copper, lead, zinc, and cyanide. Analytical results were reviewed to determine if the soil could be re-used on-site within the site boundaries (concentrations all below Method 1 S-1 Soil Standards) or if it is necessary to transport the stockpile off-site for either disposal or recycling at an appropriate facility (concentrations above Method 1 S-1 Soil Standards).

Stockpiled soil was staged in the parking area to the north of Building 1A (eastern parking lot area), as shown on **Figure 2-1**. Soil was stockpiled on 6 mil poly sheeting and covered with 6 mil poly sheeting at the end of each day. Soils that were excavated and temporarily stored in the stockpiles for screening are described below and presented in **Figure 2-2**. Currently, less than the 4,500 cubic yards noted in the RAM Plan have been managed under this RAM.

2.1.1 Island and Light Pole Excavations – Stockpile 11

Excavation for the removal and re-location of two light poles and the excavation of several small islands located in the eastern parking lot (EPL) were completed on October 9 and 10, 2017, respectively. Excavation related to the light pole re-location extended to a maximum depth of three feet below ground surface (ft bgs). Excavation for the small islands extended only to a depth of two inches bgs. No odors or stained soil were observed during these activities. The soils removed during excavation of these areas were placed into Stockpile 11, which totaled approximately 40 cubic yards. A composite soil sample was collected from multiple locations within the stockpile and submitted to Eurofins Spectrum Analytical, Inc. of Agawam, MA (Eurofins) for analysis of site COCs in accordance with the RAM Plan. Laboratory analytical results from Stockpile 11 did not identify concentrations of COCs above Method 1 S-1 Soil Standards. Based on the analytical results, it was determined that soil from Stockpile 11 could be re-used within the boundaries of the site. A minor amount of soil from the relocation of the two light poles was not stockpiled for re-use but was backfilled to its original location after site improvements.

Additional details related to the stockpiles are included on **Table 2-1**. Laboratory analytical results from the stockpile samples are summarized on **Table 2-2** and copies of the laboratory analytical report is included as **Appendix A**.

2.1.2 Northern EPL Drainage Swale Excavation- Stockpile 12

Excavation was completed from October 24 through October 31, 2017 in accordance with the approved storm water management plan to form the final drainage swale located in the northern portion of the EPL.

Excavation for the swale extended to a maximum depth of one foot bgs. No odors or staining were observed within the soils. Excavated soils were accumulated into Stockpile 12, which totaled approximately 10 cubic yards when complete. A composite soil sample was collected from multiple locations within the stockpile and submitted to Eurofins for analysis of site COCs in accordance with the RAM Plan. Laboratory analytical results from Stockpile 12 did not identify concentrations of COCs above Method 1 S-1 Soil Standards. Based on the analytical results, it was determined that soil from this stockpile could be re-used within the boundaries of the site. On-site re-use areas are shown on **Figure 2-1.**

Additional details related to the stockpiles are included on **Table 2-1**. Laboratory analytical results from the stockpile samples are summarized on **Table 2-2** and copies of the laboratory analytical report is included as **Appendix A**.

2.2 AIR MONITORING

Based on the limited nature (small areas and shallow depths) of the excavation activities completed during this reporting period, quantitative air monitoring was not completed.

AECOM did not observe excessive visible dust during excavation activities. Additionally, access to the work zones was limited, and passage of trespassers/workers through the work zones during excavation was observed to be minimal. Exposure to dust by potential receptors was further limited as site workers (other than construction workers) within the RAM area consisted mostly of people within cars driving through the exterior parking areas.

2.3 GROUNDWATER MANAGEMENT

Groundwater was not encountered during RAM activities completed during this reporting period. To date, the management of groundwater has not been necessary as part of this RAM.

Section 3
Remediation Waste

Impacted soil (concentrations of COCs above Method 1 S-1 Standards) was not identified during RAM activities completed to date, with the exception of approximately 20 cubic yards of soil (Stockpile 10). Results from this stockpile identified one EPH fraction at concentrations above Method 1 S-1, S-2, and S-3 Soil Standards. Stockpile 10 (20 cubic yards weighing approximately 40.5 tons) was transported off-site on December 19, 2017 under a MassDEP Bill of Lading to Aggregate Recycling Corp (ARC) of Eliot, ME for asphalt batching in accordance with 310 CRM 40.0030. Waste disposal documentation is included in **Appendix B.** All other stockpiles generated under the RAM to date (Stockpiles 1 through 9, 11 and 12) have been distributed to designated re-use areas on-site (**Figure 2-1**), as allowed based on laboratory analytical results below S-1 Soil Standards. The generation and management of Stockpiles 1 through 10 is described in RAM Status Report #1. Dewatering has not been required to facilitate excavation activities completed to date.

Section 4
Future RAM Activities

Additional activities related to the implementation of the RAM and the approximate timeline for these activities are discussed below.

4.1 FUTURE RAM ACTIVITIES

The initial phase of excavation and grading activities at the site is complete. Additional phases of work are scheduled to take place within the next six months. Any additional excavation work within the site boundaries will be conducted in accordance with the RAM Plan, submitted in July 2017. Additional activities associated with this RAM will be documented in a RAM Completion Report, or RAM Status Report, if not completed within six months of this report.

4.2 FUTURE MCP SUBMITTALS

In accordance with the MCP, specifically 310 CMR 40.0446, AECOM will submit a RAM Completion Report within 60 days following completion of the RAM. Otherwise, RAM Status Reports will be submitted in compliance with the MCP, every six months until a RAM Completion Report is submitted.

Section 5
LSP Opinion and Certification

The seal and signature of Daniel W. Folan, the LSP of this RAM Status Report No. 2, is included in the RAM Transmittal Form (BWSC 106) filed via eDEP. It is the opinion of the LSP-of-Record, Daniel W. Folan, that to the best of his knowledge, information and belief, the response actions that are the subject of this RAM (i) are being implemented in accordance with the applicable provision of M.G.L. c.21E and 310 CMR 40.000, (ii) are appropriate and reasonable to accomplish the purposes of such response actions as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR40.0000, and (iii) comply with the identified provisions of all orders, permits, and approvals identified in this submittal.

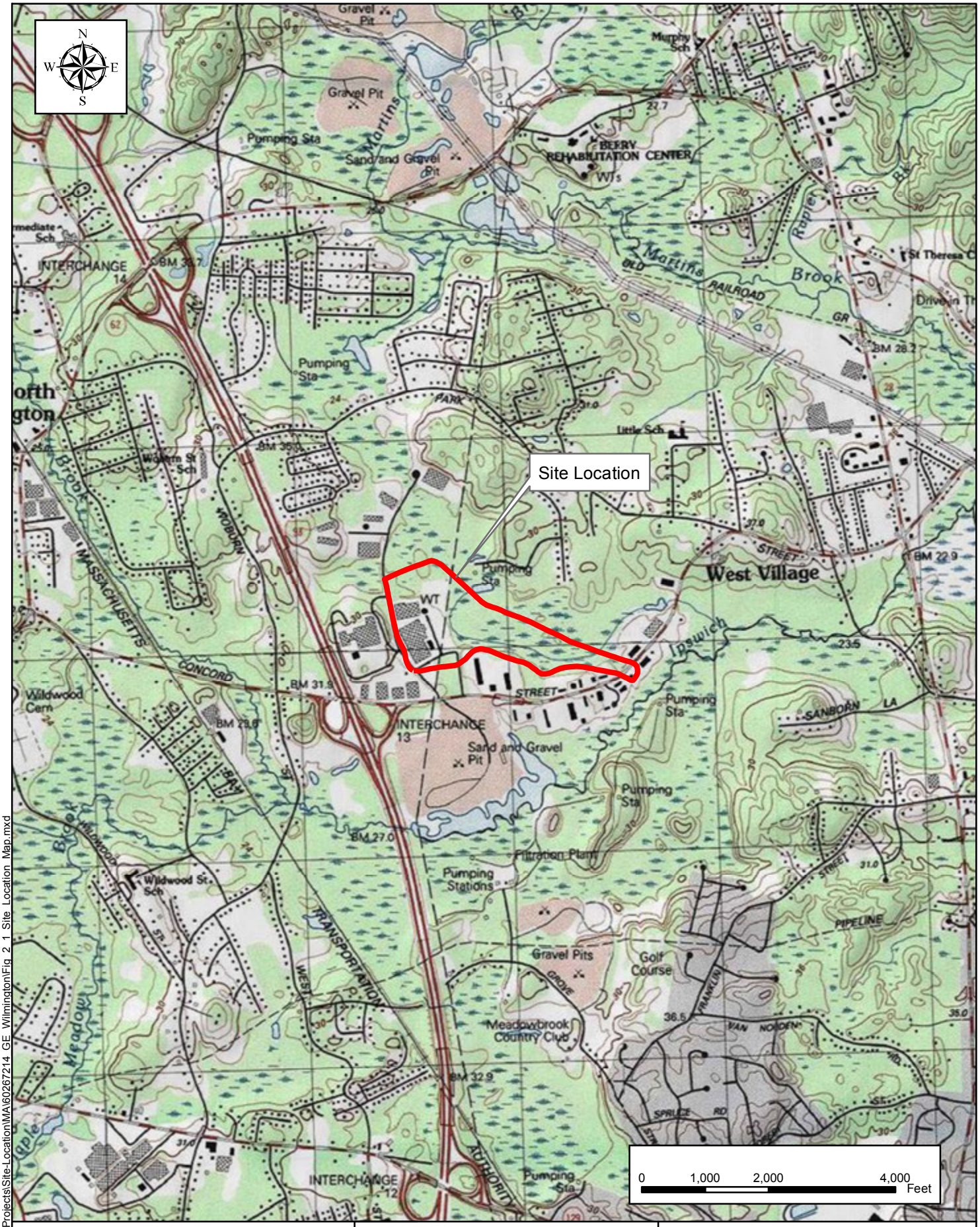
Section 6
References

1. AECOM, 2017a. Release Abatement Measure Plan, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. July 2017.

2. AECOM, 2017b. Release Abatement Measure Status Report No. 1, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. November 2017.

3. MassDEP, 2014. Massachusetts Contingency Plan, 310 CMR 40.0000, December 31, 2007, Amended April 25, 2014 and June 20, 2014.

FIGURES



Path: L:\Gisprojects\Projects\Site-Location\MA\60267214 GE Wilmington\Fig 2 1 Site Location Map.mxd

AECOM	Former GE Facility 50 Fordham Road, Wilmington, MA		SITE LOCATION MAP
	DATE: 01/25/2017	PROJECT: 60478638	FIGURE: 1-1

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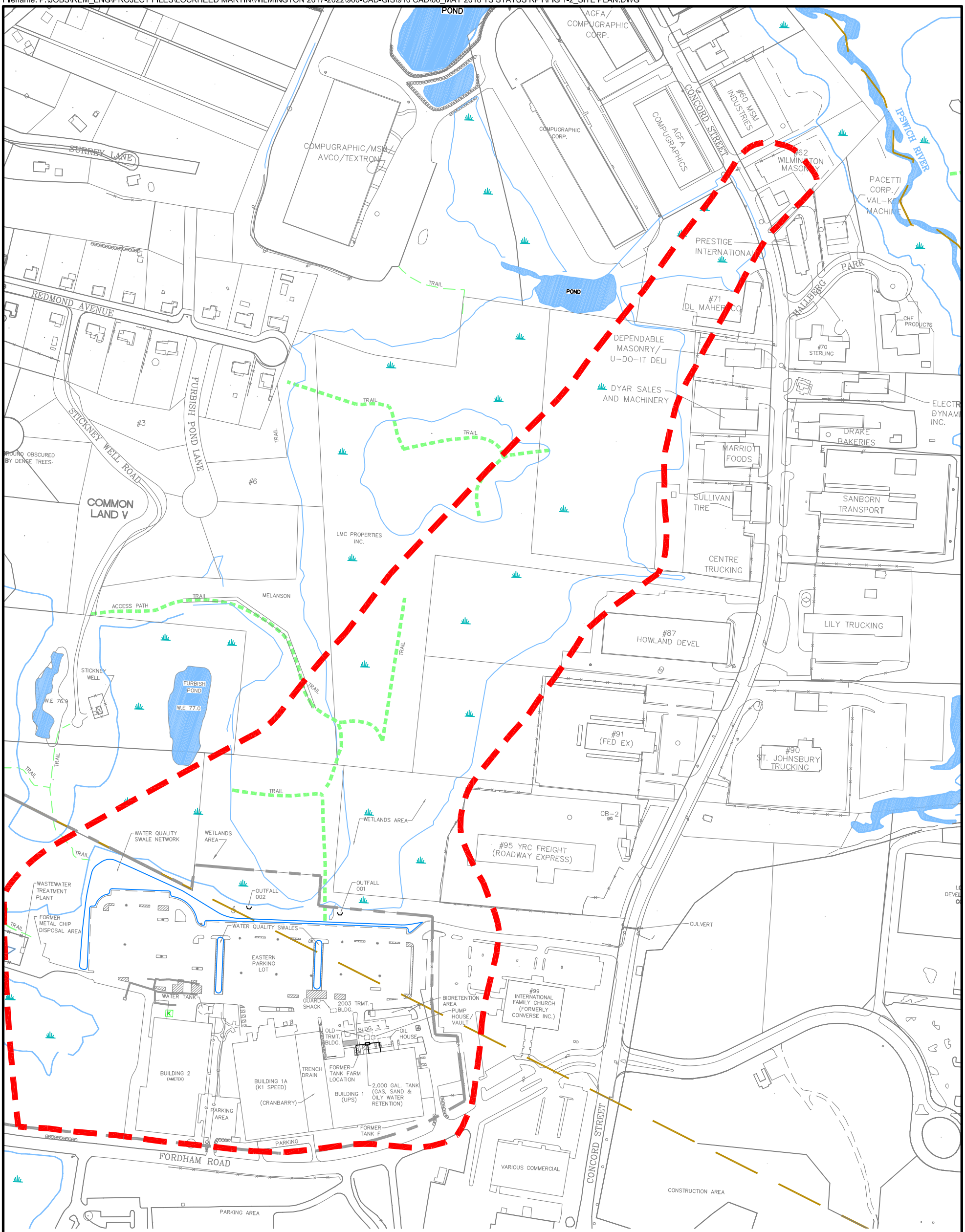
Filename: P:\JOBS\REM_ENG\PROJECT FILES\LOCKHEED MARTIN\WILMINGTON 2017-2022\900-CAD-GIS\910 CAD\06_MAY 2018 TS STATUS RPT\FIG 1-2_SITE PLAN.DWG
Project Management Initials: Designer: K.P.B. Checked: S.O. Approved: A.T. ANSI B 11" x 17"



Former GE Facility - 50 Fordham Rd, Wilmington, MA
Lockheed Martin Corporation

SITE PLAN

AECOM

60552044 2018-03-12

FIGURE: 1-2

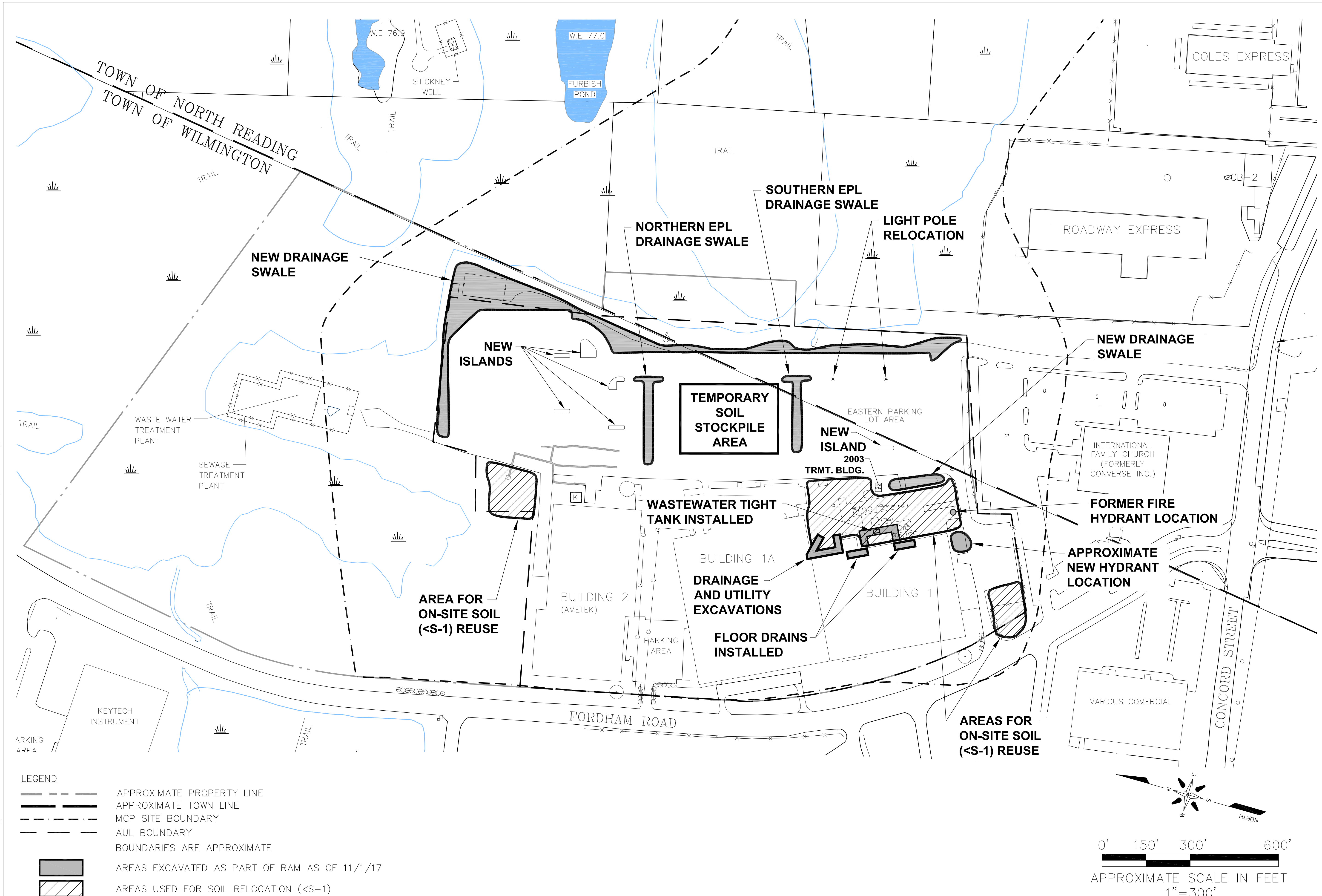


Figure: 2-1

SOIL EXCAVATION, GRADING AND RE-USE AREAS

Former GE Facility - 50 Fordham Rd, Wilmington, MA
Lockheed Martin Corporation

Date: 2018-03-27

60552044

ANSI B 11" x 17" Approved:A.T. Checked:S.O. Designer:K.P.B. Project Management Initials:

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Filename: P:\JOBS\REM_ENG\PROJECT FILES\LOCKHEED MARTIN\WILMINGTON 2017-2022\900-CAD-GIS\910 CAD\07_RAM\FIG 2-2_SOIL STOCKPILE AREAS.DWG

TOWN OF NORTH READING
TOWN OF WILMINGTON
W.E 76.9
STICKNEY WELL
W.E 77.0
FURBISH POND
TRAIL
COLES EXPRESS
CB-2
ROADWAY EXPRESS
SP#12 NORTHERN EPL DRAINAGE SWALE
SP#9 SOUTHERN EPL DRAINAGE SWALE
NEW DRAINAGE SWALE
SP#11 LIGHT POLE RELOCATION
SP#7
SP#9
SP#6
SP#3
SP#11 ISLANDS
SP#8
TEMPORARY SOIL STOCKPILE AREA
SP#10 (Curbing)
EASTERN PARKING LOT AREA
SP#11 ISLAND
SP#1
2003 TRMT. BLDG.
INTERNATIONAL FAMILY CHURCH (FORMERLY CONVERSE INC.)
NEW DRAINAGE SWALE
WASTE WATER TREATMENT PLANT
SEWAGE TREATMENT PLANT
WASTEWATER TIGHT TANK INSTALLED
FORMER FIRE HYDRANT LOCATION
SP#2
APPROXIMATE NEW HYDRANT LOCATION
BUILDING 1A
DRAINAGE AND UTILITY EXCAVATIONS
AREA FOR ON-SITE SOIL (<S-1) REUSE
BUILDING 2 (AMETEK)
BUILDING 1
SP#4 (0-5 FT)
SP#5 (5-8 FT)
PARKING AREA
FLOOR DRAINS INSTALLED
KEYTECH INSTRUMENT
FORDHAM ROAD
VARIOUS COMERCIAL
CONCORD STREET
AREAS FOR ON-SITE SOIL (<S-1) REUSE

LEGEND

- APPROXIMATE PROPERTY LINE
- APPROXIMATE TOWN LINE
- MCP SITE BOUNDARY
- AUL BOUNDARY
- BOUNDARIES ARE APPROXIMATE
- AREAS EXCAVATED AS PART OF RAM AS OF 11/1/17
- AREAS USED FOR SOIL RELOCATION (<S-1)
- SOIL STOCKPILE GENERATED FROM DESIGNATED EXCAVATION AREAS OR CURBING

NORTH

0' 150' 300' 600'
APPROXIMATE SCALE IN FEET
1"=300'

AECOM
Figure: 2-2
SOIL STOCKPILE GENERATION AREAS
Former GE Facility - 50 Fordham Rd, Wilmington, MA
Lockheed Martin Corporation
Date: 2018-03-27
60552044

TABLES

Table 2-1
Summary of Soil Analytical Results - RAM Stockpile Sampling
Former GE Facility, 50 Fordham Rd, Wilmington, MA

Stockpile ID	RAM Status Report	Soil Excavation Location	Stockpile Generation Date(s)	Approx. Volume (cy)	Stockpile Sample Date	Sample Results Received	Stockpile Sample ID	Sample Results	Soil End Use	Final Soil Location	Stockpile Discrete Sample Screening (ranges in ppm)
1	1	Swale near GZA-102 wells	7/6/17-7/10/17	240	7/10/2017	7/15/2017	SP1_071017-1	All < S1	Re-use on-site	Southern re-use area	5 samples: (0.0 - 0.2)
2	1	Drainage trench by loading dock	7/10/2017	12	7/10/2017	7/15/2017	SP2_071017-1	All < S1	Re-use on-site	Southern re-use area	5 samples: (0.2 - 2.3)
3	1	Southern area of swales east of EPL	7/11/17 - 7/18/17	200	7/18/2017	7/24/2017	SP3_071817-1	All < S1	Re-use on-site	Northern re-use area	5 samples: (0.0 - 0.1)
4	1	Tight tank soils 0-5 ft bgs	7/12/2017	20	7/12/2017	7/19/2017	SP4_071217-1	All < S1	Re-use on-site	Northern re-use area	5 samples: (0.0 - 0.1)
5	1	Tight tank soils 5-8.5 ft bgs	7/12/2017	20	7/12/2017	7/19/2017	SP5_071217-1	All < S1	Re-use on-site	Northern re-use area	5 samples: (13.2 - 335.8)
6	1	Southern middle area of swales east of EPL	7/18/17-7/26/17	200	7/26/2017	8/2/2017	SP6_072617-1	All < S1	Re-use on-site	Southern re-use area and lot east of Building 1	5 samples: (all 0.0)
7	1	Northern area of swales north of EPL	7/20/2017	120	7/20/2017	7/26/2017	SP7_072017-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	5 samples: (0.0 - 0.2)
8	1	Northern area of swales north and east of EPL	7/21/17-7/31/17	240	7/31/2017	8/7/2017	SP8_073117-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	6 samples: (all 0.0)
9	1	Northeastern area of swales northeastern corner of EPL; swale in center of EPL	7/31/17-8/3/17	150	8/3/2017	8/10/2017	SP9_080317-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	5 samples: (0.0 - 0.1)
10	1 & 2	Curbing trench soils from 0-1.5 ft bgs	8/10/17-8/11/17	20	8/11/2017	8/15/2017	SP10_081117-1	EPH >S1	Off site recycling or disposal	Recycling at an offsite facility (ARC, Eliot, ME)	Not measured
11	2	Islands in EPL from 0-2 inches bgs and relocation of lightpoles in EPL from 0-3 ft bgs	10/9/17-10/11/17	40	10/11/2017	10/17/2017	SP11_101117-1	All < S1	Re-use on-site	Re-use in original excavation or area east of Bulding 1	Not measured
12	2	Northern swale in the EPL soils from 0-1 ft bgs	10/24/17-10/31/17	10	11/1/2017	11/6/2017	SP12_110117-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	5 samples: (all 0.0)

Table 2-2
Summary of Soil Analytical Results - RAM Stockpile Sampling
Former GE Facility, 50 Fordham Rd, Wilmington, MA

Client ID: Lab ID: Matrix: Sample Date:	MassDEP RCS-1 Reportable Concentrations	MassDEP RCS-2 Reportable Concentations	MA Method 1 S-1 Soil & GW-1	MA Method 1 S-2 Soil & GW-1	MA Method 1 S-3 Soil & GW-1	SP1_071017-1 SC36812-03 Soil 10-Jul-17	SP2_071017-1 SC36812-02 Soil 10-Jul-17	SP3_071817-1 SC37123-02 Soil 18-Jul-17	SP4_071217-1 SC36934-02 Soil 12-Jul-17	SP5_071217-1 SC36934-03 Soil 12-Jul-17	SP6_072617-1 SC37220-02 Soil 26-Jul-17	SP7_072017-1 SC37220-02 Soil 20-Jul-17	SP8_073117-1 SC37605-02 Soil 20-Jul-17	SP8_073117-2 SC37605-03 (DUP) Soil 20-Jul-17	SP9_080317-1 SC37797-02 Soil 3-Aug-17	SP10_081117-1 SC38055-02 Soil 11-Aug-17	SP11_101117-1 SC40242-01 Soil 11-Oct-17	SP12_110117-1 SC40987-02 Soil 1-Nov-17
MADEP EPH 5/2004 R (mg/kg dry)																		
C9-C18 Aliphatic Hydrocarbons	1000	3000	1000	3000	5000	< 10.4	< 10.4	<10.7	< 10.4	< 10.8	< 10.9	< 11.1	< 10.6	< 10.7	< 10.8	< 104	< 10.5	< 10.5
C19-C36 Aliphatic Hydrocarbons	3000	5000	3000	5000	5000	**19.5**	<10.4	<10.7	**51.2**	**18**	**33.4**	< 11.1	< 10.6	< 10.7	< 10.8	**5,460**	< 10.5	**98**
C11-C22 Aromatic Hydrocarbons	1000	3000	1000	1000	1000	**16.9**	<10.4	**11.3**	**35.4**	**18.4**	**23.3**	< 11.1	< 10.6	< 10.7	< 10.8	< 104	< 10.5	**20.8**
MADEP VPH 5/2004 Rev. 1.1 (mg/kg)																		
C5-C8 Aliphatic Hydrocarbons	100	500	100	500	500	< 5.22	< 4.92	< 1.02	< 1.77	**3.4**	< 0.740	< 0.863	< 0.722	< 0.752	< 0.802	< 0.703	< 1.29	< 0.723
C9-C12 Aliphatic Hydrocarbons	1000	3000	1000	3000	5000	**1.58**	< 0.328	< 0.342	< 0.591	**20**	< 0.247	< 0.288	< 0.241	< 0.251	< 0.428	< 0.234	< 0.311	< 0.386
C9-C10 Aromatic Hydrocarbons	100	500	100	300	300	**0.994**	< 0.328	< 0.342	< 0.591	**19**	< 0.543	< 0.288	**0.275**	< 0.251	< 0.428	< 0.234	< 0.311	< 0.386
Total Metals SW846 6010C (mg/kg)																		
Arsenic	20	20	20	20	50	**7.44**	**8.16**	**8.34**	**7.2**	**7.72**	**10.2**	**11.8**	**11.1**	**12.8**	**11.8**	**7.41**	**10.4**	**12.8**
Chromium	100	200	100	200	200	**9.89**	**10.9**	**13**	**17.7**	**12.3**	**10.7**	**21.1**	**16.3**	**11.7**	**14.2**	**12.6**	**11.5**	**13.2**
Copper	1000	10000	NE	NE	NE	**6.09**	**6.25**	**7.16**	**11.9**	**10.9**	**9.27**	**8.52**	**7.6**	**8.21**	**7.3**	**7.47**	**8.37**	< 13.7
Lead	200	600	200	600	600	**11.8**	**6.17**	**10.8**	**10.1**	**10.4**	**15**	**7.56**	**8.85**	**7.93**	**7.46**	**8.73**	**8.35**	**8.59**
Zinc	1000	3000	1000	3000	5000	**34.5**	**19.5**	**21.9**	**44.8**	**25.4**	**20.4**	**20.9**	**17.7**	**15**	**19.2**	**26.1**	**16.5**	**22.9**
Total Cyanide SW9010C																		
Cyanide	30	100	30	100	500	< 0.54	< 0.53	<0.54	<0.53	<0.46	<0.55	<0.56	<0.477	<0.412	< 0.369	< 0.437	< 0.281	< 0.281
VOC SW846 8260C (µg/kg)																		
1,1,2-Trichlorotrifluoroethane (Freon 113)	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Acetone	6000	50000	6000	6000	6000	< 46.4	< 48.2	< 50.0	< 76.6	< 66.8	< 49.0	< 55.1	< 49.9	< 48.9	< 48.5	< 47.9	< 484	< 46.1
Benzene	2000	200000	2000	2000	2000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Bromobenzene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Bromochloromethane	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Bromodichloromethane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Bromoform	100	1000	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Bromomethane	500	500	500	500	500	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
2-Butanone (MEK)	4000	50000	4000	4000	4000	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
n-Butylbenzene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
sec-Butylbenzene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
tert-Butylbenzene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Carbon disulfide	100000	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Carbon tetrachloride	5000	5000	10000	10000	10000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Chlorobenzene	1000	3000	1000	1000	1000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Chloroethane	100000	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Chloroform	200	200	400	400	400	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Chloromethane	100000	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
2-Chlorotoluene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
4-Chlorotoluene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2-Dibromo-3-chloropropane	10000	100000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Dibromochloromethane	5	30	5	5	5	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2-Dibromoethane (EDB)	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Dibromomethane	500000	5000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2-Dichlorobenzene	9000	100000	9000	9000	9000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,3-Dichlorobenzene	3000	200000	3000	3000	3000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,4-Dichlorobenzene	700	1000	700	700	700	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Dichlorodifluoromethane (Freon12)	1000000	10000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
1,1-Dichloroethane	400	9000	400	400	400	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2-Dichloroethane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,1-Dichloroethene	3000	40000	3000	3000	3000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
cis-1,2-Dichloroethene	300	400	300	300	300	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
trans-1,2-Dichloroethene	1000	1000	1000	1000	1000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2-Dichloropropane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,3-Dichloropropane	500000	5000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
2,2-Dichloropropane	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,1-Dichloropropene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
cis-1,3-Dichloropropene	10	100	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
trans-1,3-Dichloropropene	10	100	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Ethylbenzene	40000	1000000	40000	40000	40000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Hexachlorobutadiene	30000	100000	30000	100000	100000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
2-Hexanone (MBK)	100000	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Isopropylbenzene	1000000	10000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
4-Isopropyltoluene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Methyl tert-butyl ether	100	100000	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
4-Methyl-2-pentanone (MIBK)	400	50000	400	400	400	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Methylene chloride	100	4000	100	100	100	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Naphthalene	4000	20000	4000	4000	4000	< 4.64	**11.9**	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
n-Propylbenzene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Styrene	3000	4000	3000	3000	3000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,1,1,2-Tetrachloroethane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,1,2,2-Tetrachloroethane	5	20	5	5	5	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Tetrachloroethene	1000	10000	1000	1000	1000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Toluene	30000	1000000	30000	30000	30000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2,3-Trichlorobenzene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2,4-Trichlorobenzene	2000	6000	2000	2000	2000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,1,1-Trichloroethane	30000	600000	30000	30000	30000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,1,2-Trichloroethane	100	2000	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Trichloroethene	300	300	300	300	300	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Trichlorofluoromethane (Freon 11)	1000000	10000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2,3-Trichloropropane	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,2,4-Trimethylbenzene	1000000	10000000	NE	NE	NE	< 4.64	**18.6**	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,3,5-Trimethylbenzene	10000	100000	NE	NE	NE	< 4.64	**5.02**	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Vinyl chloride	700	700	900	900	900	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
m,p-Xylene	300000	300000	400000	400000	400000	< 9.29	**11.6**	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
o-Xylene	500000	500000				< 4.64	**6.32**	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Tetrahydrofuran	500000	5000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Ethyl ether	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Tert-amyl methyl ether	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Ethyl tert-butyl ether	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
Di-isopropyl ether	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 48.4	< 4.61
1,4-Dioxane	200	6000	200	200	200	< 92.9	< 96.4	< 100	< 153	< 134	< 98.0	< 110	< 99.8	< 97.8	< 97.1	< 95.9	< 968	< 92.1

Notes:
SP: Excavated Soil Stock Pile
< - Non-detect at laboratory detection limit (detection limit shown after <
J = Estimated Value, J+ = biased high, J- = biased low, R = rejected
Sample Type N = normal sample, FD = duplicate sample
mg/kg - milligrams per kilograms
NE = not established
Detections are bolded
MCP - Massachusetts Contingency Plan
Exceedance of Method 1 S1 Standards are yellow highlighted

APPENDIX A – LABORATORY ANALYTICAL REPORTS

eurofins | Spectrum Analytical

☑ Final Report
☐ Revised Report

Report Date:
17-Oct-17 17:45

Laboratory Report
SC40242

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Art Taddeo

Project: LMC-Wilmington- 40 Fordham Rd. - MA
Project #: 60478638.5.01

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393

Authorized by:

Dawn Wojcik
Laboratory Director

Dawn E Wojcik

Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 30 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our 'Quality' web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC40242

Project: LMC-Wilmington- 40 Fordham Rd. - MA

Project Number: 60478638.5.01

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC40242-01	SP11_101117-1	Soil	11-Oct-17 10:30	11-Oct-17 18:31
SC40242-02	TB_101117-1	Methanol/Deionized Water	11-Oct-17 10:25	11-Oct-17 18:31

The following outlines the condition of all VPH samples contained within this report upon laboratory receipt.

Matrices	Soil		
Containers	✓ Satisfactory		
Sample Preservative	**Aqueous** (acid preserved)	✓ N/A pH≤2 pH>2	
	Soil or Sediment	N/A Samples not received in Methanol	ml Methanol/g soil ✓ 1:1 +/-25% Other
		✓ Samples received in Methanol: ✓ covering soil/sediment not covering soil/sediment	
		Samples received in air-tight container	
Temperature	✓ Received on ice ✓ Received at 4 ± 2 ºC		

Were all QA/QC procedures followed as required by the VPH method? *Yes*
Were any significant modifications made to the VPH method as specified in section 11.3? *No*
Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

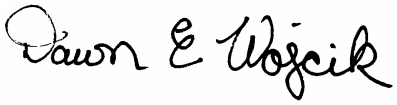
The following outlines the condition of all EPH samples contained within this report upon laboratory receipt.

Matrices	Soil
Containers	✓ Satisfactory
Aqueous Preservative	✓ N/A pH≤2 pH>2 pH adjusted to <2 in lab
Temperature	✓ Received on ice ✓ Received at 4 ± 2 ºC

Were all QA/QC procedures followed as required by the EPH method? *Yes*
Were any significant modifications made to the EPH method as specified in Section 11.3? *No*
Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

I attest that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Authorized by:



Dawn E. Wojcik
Laboratory Director

MassDEP Analytical Protocol Certification Form

Laboratory Name: Eurofins Spectrum Analytical, Inc.	**Project #:** 60478638.5.01
Project Location: LMC-Wilmington- 40 Fordham Rd. - MA	**RTN:**
This form provides certifications for the following data set:	SC40242-01 through SC40242-02
Matrices: Methanol/Deionized Water Soil	

CAM Protocol

✓ 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	✓ 9012 Total Cyanide/PAC CAM VI 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	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? 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

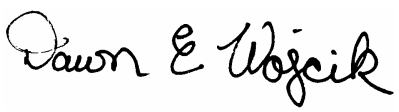
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

***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
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ✓ No

All negative responses are addressed in a case narrative on the cover page of this report.

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.



Dawn E. Wojcik
Laboratory Director
Date: 10/17/2017

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 3.7 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Soils are run on a manual load instrument. 100ug of sample (MEOH) is spiked into 5ml DI water along with the surrogate and added directly onto the instrument. Additional dilution factors may be required to keep analyte concentration within instrument calibration range.

Method SW846 5035A is designed to use on samples containing low levels of VOCs, ranging from 0.5 to 200 ug/Kg. Target analytes that are less responsive to purge and trap may be present at concentrations over 200ug/Kg but may not be reportable in the methanol preserved vial (SW846 5030). This is the result of the inherent dilution factor required for the methanol preservation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

MADEP EPH 5/2004 R

Calibration:

S707773-ICV1

Analyte percent recovery is outside individual acceptance criteria.

2-Methylnaphthalene (aliphatic fraction) (0%)
Naphthalene (aliphatic fraction) (0%)

This affected the following samples:

1717419-BLK1
1717419-BS1
1717419-BS2
1717419-BSD1
S709112-CCV1
S709112-CCV2
S709112-CCV3

SW846 8260C

Calibration:

SW846 8260C

Calibration:

1710009

Analyte quantified by quadratic equation type calibration.

1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane (EDB)
2-Hexanone (MBK)
4-Methyl-2-pentanone (MIBK)
Bromochloromethane
Bromodichloromethane
Bromoform
Carbon disulfide
Carbon tetrachloride
cis-1,3-Dichloropropene
Dibromochloromethane
Naphthalene
Styrene
trans-1,3-Dichloropropene
Vinyl chloride

This affected the following samples:

S708827-ICV1

Laboratory Control Samples:

1717436 BS/BSD

1,1,2-Trichlorotrifluoroethane (Freon 113) percent recoveries (67/61) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TB_101117-1

Bromomethane percent recoveries (158/158) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

TB_101117-1

1717540 BS/BSD

2,2-Dichloropropane percent recoveries (149/140) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

SP11_101117-1

Bromomethane percent recoveries (174/164) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

SP11_101117-1

Samples:

S709049-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,1,2-Trichlorotrifluoroethane (Freon 113) (-38.9%)
Dichlorodifluoromethane (Freon12) (-29.9%)
Hexachlorobutadiene (-22.4%)
Tetrachloroethene (-23.8%)

SW846 8260C

Samples:

S709049-CCV1

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

Bromomethane (58.0%)
Carbon tetrachloride (-24.9%)

This affected the following samples:

1717436-BLK1
1717436-BS1
1717436-BSD1
TB_101117-1

S709100-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

2,2-Dichloropropane (40.6%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

Bromomethane (55.8%)

This affected the following samples:

1717540-BLK1
1717540-BS1
1717540-BSD1
SP11_101117-1

SC40242-01 *SP11_101117-1*

Reporting limits reflect SW846 5035A High Level extraction technique due to interference and/or QC issues using SW846 5035A Low Level extraction technique.

Sample Acceptance Check Form

Client:	AECOM Environment - Chelmsford, MA
Project:	LMC-Wilmington- 40 Fordham Rd. - MA / 60478638.5.01
Work Order:	SC40242
Sample(s) received on:	10/11/2017

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC40242-01 **Client ID:** SP11_101117-1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	10.4		1.59	mg/kg	SW846 6010C
Chromium	11.5		1.06	mg/kg	SW846 6010C
Copper	8.37		1.06	mg/kg	SW846 6010C
Lead	8.35		1.59	mg/kg	SW846 6010C
Zinc	16.5		1.06	mg/kg	SW846 6010C

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP11_101117-1 SC40242-01	60478638.5.01	Soil	11-Oct-17 10:30	11-Oct-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Prepared by method Volatiles													
	VOC Extraction	**Field extracted**		N/A			1	VOC Soil Extraction			MBR	1717410	
Volatile Organic Compounds by SW846 8260			VOC8										
Prepared by method SW846 5035A Soil (high level)							Initial weight: 18.22 g						
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 48.4	D	µg/kg dry	48.4	24.5	50	SW846 8260C	16-Oct-17	16-Oct-17	MP	1717540	
67-64-1	Acetone	< 484	D	µg/kg dry	484	194	50	"	"	"	"	"	
71-43-2	Benzene	< 48.4	D	µg/kg dry	48.4	12.8	50	"	"	"	"	"	
108-86-1	Bromobenzene	< 48.4	D	µg/kg dry	48.4	12.9	50	"	"	"	"	"	
74-97-5	Bromochloromethane	< 48.4	D	µg/kg dry	48.4	24.4	50	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 48.4	D	µg/kg dry	48.4	32.3	50	"	"	"	"	"	
75-25-2	Bromoform	< 48.4	D	µg/kg dry	48.4	46.2	50	"	"	"	"	"	
74-83-9	Bromomethane	< 96.8	D	µg/kg dry	96.8	43.7	50	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 96.8	D	µg/kg dry	96.8	86.6	50	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 48.4	D	µg/kg dry	48.4	13.8	50	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 48.4	D	µg/kg dry	48.4	8.81	50	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 48.4	D	µg/kg dry	48.4	10.8	50	"	"	"	"	"	
75-15-0	Carbon disulfide	< 96.8	D	µg/kg dry	96.8	31.0	50	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 48.4	D	µg/kg dry	48.4	39.6	50	"	"	"	"	"	
108-90-7	Chlorobenzene	< 48.4	D	µg/kg dry	48.4	15.2	50	"	"	"	"	"	
75-00-3	Chloroethane	< 96.8	D	µg/kg dry	96.8	26.9	50	"	"	"	"	"	
67-66-3	Chloroform	< 48.4	D	µg/kg dry	48.4	26.0	50	"	"	"	"	"	
74-87-3	Chloromethane	< 96.8	D	µg/kg dry	96.8	20.0	50	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 48.4	D	µg/kg dry	48.4	12.1	50	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 48.4	D	µg/kg dry	48.4	11.4	50	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 96.8	D	µg/kg dry	96.8	70.0	50	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 48.4	D	µg/kg dry	48.4	32.8	50	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 48.4	D	µg/kg dry	48.4	32.5	50	"	"	"	"	"	
74-95-3	Dibromomethane	< 48.4	D	µg/kg dry	48.4	25.2	50	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 48.4	D	µg/kg dry	48.4	12.6	50	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 48.4	D	µg/kg dry	48.4	10.5	50	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 48.4	D	µg/kg dry	48.4	14.3	50	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 96.8	D	µg/kg dry	96.8	18.3	50	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 48.4	D	µg/kg dry	48.4	12.7	50	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 48.4	D	µg/kg dry	48.4	17.3	50	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 48.4	D	µg/kg dry	48.4	25.3	50	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 48.4	D	µg/kg dry	48.4	18.0	50	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 48.4	D	µg/kg dry	48.4	25.7	50	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 48.4	D	µg/kg dry	48.4	25.4	50	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 48.4	D	µg/kg dry	48.4	25.1	50	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 48.4	D	µg/kg dry	48.4	22.9	50	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 48.4	D	µg/kg dry	48.4	15.6	50	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 48.4	D	µg/kg dry	48.4	29.2	50	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 48.4	D	µg/kg dry	48.4	25.4	50	"	"	"	"	"	
100-41-4	Ethylbenzene	< 48.4	D	µg/kg dry	48.4	6.97	50	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP11_101117-1	60478638.5.01	Soil	11-Oct-17 10:30	11-Oct-17
SC40242-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260			VOC8										
							Initial weight: 18.22 g						
87-68-3	Hexachlorobutadiene	< 48.4	D	µg/kg dry	48.4	24.3	50	SW846 8260C	16-Oct-17	16-Oct-17	MP	1717540	
591-78-6	2-Hexanone (MBK)	< 96.8	D	µg/kg dry	96.8	59.4	50	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 48.4	D	µg/kg dry	48.4	9.54	50	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 48.4	D	µg/kg dry	48.4	10.4	50	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 48.4	D	µg/kg dry	48.4	17.8	50	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 96.8	D	µg/kg dry	96.8	24.9	50	"	"	"	"	"	
75-09-2	Methylene chloride	< 96.8	D	µg/kg dry	96.8	19.2	50	"	"	"	"	"	
91-20-3	Naphthalene	< 48.4	D	µg/kg dry	48.4	28.8	50	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 48.4	D	µg/kg dry	48.4	7.84	50	"	"	"	"	"	
100-42-5	Styrene	< 48.4	D	µg/kg dry	48.4	9.73	50	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 48.4	D	µg/kg dry	48.4	41.1	50	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 48.4	D	µg/kg dry	48.4	41.0	50	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 48.4	D	µg/kg dry	48.4	16.6	50	"	"	"	"	"	
108-88-3	Toluene	< 48.4	D	µg/kg dry	48.4	15.7	50	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 48.4	D	µg/kg dry	48.4	17.0	50	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 48.4	D	µg/kg dry	48.4	35.7	50	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 48.4	D	µg/kg dry	48.4	16.1	50	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 48.4	D	µg/kg dry	48.4	35.1	50	"	"	"	"	"	
79-01-6	Trichloroethene	< 48.4	D	µg/kg dry	48.4	13.2	50	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 48.4	D	µg/kg dry	48.4	26.1	50	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 48.4	D	µg/kg dry	48.4	36.3	50	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 48.4	D	µg/kg dry	48.4	11.8	50	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 48.4	D	µg/kg dry	48.4	8.33	50	"	"	"	"	"	
75-01-4	Vinyl chloride	< 48.4	D	µg/kg dry	48.4	16.4	50	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 96.8	D	µg/kg dry	96.8	8.71	50	"	"	"	"	"	
95-47-6	o-Xylene	< 48.4	D	µg/kg dry	48.4	13.6	50	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 96.8	D	µg/kg dry	96.8	76.3	50	"	"	"	"	"	
60-29-7	Ethyl ether	< 48.4	D	µg/kg dry	48.4	43.9	50	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 48.4	D	µg/kg dry	48.4	16.2	50	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 48.4	D	µg/kg dry	48.4	26.1	50	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 48.4	D	µg/kg dry	48.4	9.00	50	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 968	D	µg/kg dry	968	841	50	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*98*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*102*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*105*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*97*			*70-130 %*			"	"	"	"	"	
MADEP VPH Carbon Ranges													
Prepared by method VPH - EPA 5035A Soil							Initial weight: 16.93 g						
	C5-C8 Aliphatic Hydrocarbons	< 1.29	D	mg/kg dry	1.29	0.150	50	MADEP VPH 5/2004 Rev. 1.1	12-Oct-17	12-Oct-17	SD	1717194	
	C9-C12 Aliphatic Hydrocarbons	< 0.311	D	mg/kg dry	0.311	0.108	50	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP11_101117-1 SC40242-01	60478638.5.01	Soil	11-Oct-17 10:30	11-Oct-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
MADEP VPH Carbon Ranges							Initial weight: 16.93 g						
	C9-C10 Aromatic Hydrocarbons	< 0.311	D	mg/kg dry	0.311	0.0314	50	MADEP VPH 5/2004 Rev. 1.1	12-Oct-17	12-Oct-17	SD	1717194	
	Unadjusted C5-C8 Aliphatic Hydrocarbons	< 1.29	D	mg/kg dry	1.29	0.121	50	"	"	"	"	"	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	< 0.311	D	mg/kg dry	0.311	0.137	50	"	"	"	"	"	
Surrogate recoveries:													
615-59-8	*2,5-Dibromotoluene (FID)*	*117*			*70-130 %*			"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*125*			*70-130 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
MADEP EPH Carbon Ranges Prepared by method SW846 3546													
	C9-C18 Aliphatic Hydrocarbons	< 10.5		mg/kg dry	10.5	2.14	1	MADEP EPH 5/2004 R	13-Oct-17	14-Oct-17	EDT	1717419	
	C19-C36 Aliphatic Hydrocarbons	< 10.5		mg/kg dry	10.5	2.83	1	"	"	"	"	"	
	C11-C22 Aromatic Hydrocarbons	< 10.5		mg/kg dry	10.5	4.41	1	"	"	"	"	"	
	Unadjusted C11-C22 Aromatic Hydrocarbons	< 10.5		mg/kg dry	10.5	4.41	1	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*58*			*40-140 %*			"	"	"	"	"	
84-15-1	*Ortho-Terphenyl*	*97*			*40-140 %*			"	"	"	"	"	
321-60-8	*2-Fluorobiphenyl*	*72*			*40-140 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
Prepared by method SW846 3051A													
7440-38-2	Arsenic	**10.4**		mg/kg dry	1.59	0.202	1	SW846 6010C	13-Oct-17	13-Oct-17	CAW	1717347	
7440-47-3	Chromium	**11.5**		mg/kg dry	1.06	0.141	1	"	"	16-Oct-17	"	"	
7440-50-8	Copper	**8.37**		mg/kg dry	1.06	0.255	1	"	"	13-Oct-17	"	"	
7439-92-1	Lead	**8.35**		mg/kg dry	1.59	0.225	1	"	"	"	"	"	
7440-66-6	Zinc	**16.5**		mg/kg dry	1.06	0.822	1	"	"	"	"	"	
General Chemistry Parameters													
	% Solids	**92.6**		%			1	SM2540 G (11) Mod.	12-Oct-17	12-Oct-17	MBR	1717352	
Prepared by method SW846 9010B													
57-12-5	Cyanide (total)	< 0.281		mg/kg dry	0.281	0.237	1	SW846 9012B	13-Oct-17	14-Oct-17	RLT	1717429	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TB_101117-1 SC40242-02	60478638.5.01	Methanol/Deionized Water	11-Oct-17 10:25	11-Oct-17

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260 Prepared by method SW846 5035A Soil (high level)													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 50.0	D	µg/kg wet	50.0	25.4	50	SW846 8260C	13-Oct-17	14-Oct-17	MP	1717436	
67-64-1	Acetone	< 500	D	µg/kg wet	500	200	50	"	"	"	"	"	
71-43-2	Benzene	< 50.0	D	µg/kg wet	50.0	13.2	50	"	"	"	"	"	
108-86-1	Bromobenzene	< 50.0	D	µg/kg wet	50.0	13.4	50	"	"	"	"	"	
74-97-5	Bromochloromethane	< 50.0	D	µg/kg wet	50.0	25.2	50	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 50.0	D	µg/kg wet	50.0	33.4	50	"	"	"	"	"	
75-25-2	Bromoform	< 50.0	D	µg/kg wet	50.0	47.7	50	"	"	"	"	"	
74-83-9	Bromomethane	< 100	D	µg/kg wet	100	45.2	50	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 100	D	µg/kg wet	100	89.4	50	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 50.0	D	µg/kg wet	50.0	14.3	50	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 50.0	D	µg/kg wet	50.0	9.10	50	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 50.0	D	µg/kg wet	50.0	11.2	50	"	"	"	"	"	
75-15-0	Carbon disulfide	< 100	D	µg/kg wet	100	32.0	50	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 50.0	D	µg/kg wet	50.0	40.9	50	"	"	"	"	"	
108-90-7	Chlorobenzene	< 50.0	D	µg/kg wet	50.0	15.6	50	"	"	"	"	"	
75-00-3	Chloroethane	< 100	D	µg/kg wet	100	27.8	50	"	"	"	"	"	
67-66-3	Chloroform	< 50.0	D	µg/kg wet	50.0	26.8	50	"	"	"	"	"	
74-87-3	Chloromethane	< 100	D	µg/kg wet	100	20.6	50	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 50.0	D	µg/kg wet	50.0	12.4	50	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 50.0	D	µg/kg wet	50.0	11.8	50	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 100	D	µg/kg wet	100	72.2	50	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 50.0	D	µg/kg wet	50.0	33.9	50	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 50.0	D	µg/kg wet	50.0	33.6	50	"	"	"	"	"	
74-95-3	Dibromomethane	< 50.0	D	µg/kg wet	50.0	26.0	50	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0	13.0	50	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0	10.8	50	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0	14.8	50	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 100	D	µg/kg wet	100	19.0	50	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 50.0	D	µg/kg wet	50.0	13.1	50	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 50.0	D	µg/kg wet	50.0	17.9	50	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 50.0	D	µg/kg wet	50.0	26.2	50	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 50.0	D	µg/kg wet	50.0	18.6	50	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 50.0	D	µg/kg wet	50.0	26.5	50	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 50.0	D	µg/kg wet	50.0	26.2	50	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 50.0	D	µg/kg wet	50.0	25.9	50	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 50.0	D	µg/kg wet	50.0	23.6	50	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 50.0	D	µg/kg wet	50.0	16.1	50	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 50.0	D	µg/kg wet	50.0	30.2	50	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 50.0	D	µg/kg wet	50.0	26.2	50	"	"	"	"	"	
100-41-4	Ethylbenzene	< 50.0	D	µg/kg wet	50.0	7.20	50	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 50.0	D	µg/kg wet	50.0	25.1	50	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 100	D	µg/kg wet	100	61.4	50	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 50.0	D	µg/kg wet	50.0	9.85	50	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TB_101117-1 SC40242-02	60478638.5.01	Methanol/Deionized Water	11-Oct-17 10:25	11-Oct-17

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
99-87-6	4-Isopropyltoluene	< 50.0	D	µg/kg wet	50.0	10.8	50	SW846 8260C	13-Oct-17	14-Oct-17	MP	1717436	
1634-04-4	Methyl tert-butyl ether	< 50.0	D	µg/kg wet	50.0	18.4	50	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 100	D	µg/kg wet	100	25.7	50	"	"	"	"	"	
75-09-2	Methylene chloride	< 100	D	µg/kg wet	100	19.8	50	"	"	"	"	"	
91-20-3	Naphthalene	< 50.0	D	µg/kg wet	50.0	29.8	50	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 50.0	D	µg/kg wet	50.0	8.10	50	"	"	"	"	"	
100-42-5	Styrene	< 50.0	D	µg/kg wet	50.0	10.0	50	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 50.0	D	µg/kg wet	50.0	42.5	50	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 50.0	D	µg/kg wet	50.0	42.3	50	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 50.0	D	µg/kg wet	50.0	17.1	50	"	"	"	"	"	
108-88-3	Toluene	< 50.0	D	µg/kg wet	50.0	16.2	50	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 50.0	D	µg/kg wet	50.0	17.6	50	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 50.0	D	µg/kg wet	50.0	36.8	50	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 50.0	D	µg/kg wet	50.0	16.6	50	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 50.0	D	µg/kg wet	50.0	36.2	50	"	"	"	"	"	
79-01-6	Trichloroethene	< 50.0	D	µg/kg wet	50.0	13.6	50	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 50.0	D	µg/kg wet	50.0	27.0	50	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 50.0	D	µg/kg wet	50.0	37.5	50	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 50.0	D	µg/kg wet	50.0	12.2	50	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 50.0	D	µg/kg wet	50.0	8.60	50	"	"	"	"	"	
75-01-4	Vinyl chloride	< 50.0	D	µg/kg wet	50.0	16.9	50	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 100	D	µg/kg wet	100	9.00	50	"	"	"	"	"	
95-47-6	o-Xylene	< 50.0	D	µg/kg wet	50.0	14.0	50	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 100	D	µg/kg wet	100	78.8	50	"	"	"	"	"	
60-29-7	Ethyl ether	< 50.0	D	µg/kg wet	50.0	45.3	50	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 50.0	D	µg/kg wet	50.0	16.7	50	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 50.0	D	µg/kg wet	50.0	27.0	50	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 50.0	D	µg/kg wet	50.0	9.30	50	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 1000	D	µg/kg wet	1000	868	50	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*99*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*101*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*93*			*70-130 %*			"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP VPH 5/2004 Rev. 1.1										
Batch 1717194 - VPH - EPA 5035A Soil										
Blank (1717194-BLK1)					Prepared: 11-Oct-17 Analyzed: 12-Oct-17					
C5-C8 Aliphatic Hydrocarbons	< 1.25	D	mg/kg wet	1.25						
C9-C12 Aliphatic Hydrocarbons	< 0.300	D	mg/kg wet	0.300						
C9-C10 Aromatic Hydrocarbons	< 0.300	D	mg/kg wet	0.300						
Unadjusted C5-C8 Aliphatic Hydrocarbons	< 1.25	D	mg/kg wet	1.25						
Unadjusted C9-C12 Aliphatic Hydrocarbons	< 0.300	D	mg/kg wet	0.300						
Surrogate: 2,5-Dibromotoluene (FID)	*56.5*		µg/kg		*50.0*		*113*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*60.2*		µg/kg		*50.0*		*120*	*70-130*		
LCS (1717194-BS1)					Prepared: 11-Oct-17 Analyzed: 12-Oct-17					
C5-C8 Aliphatic Hydrocarbons	**41.7**	D	µg/kg		60.0		70	70-130		
C9-C12 Aliphatic Hydrocarbons	**48.6**	D	µg/kg		60.0		81	70-130		
C9-C10 Aromatic Hydrocarbons	**21.7**	D	µg/kg		20.0		108	70-130		
Unadjusted C5-C8 Aliphatic Hydrocarbons	**187**	D	µg/kg		200		94	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	**70.2**	D	µg/kg		80.0		88	70-130		
Surrogate: 2,5-Dibromotoluene (FID)	*60.0*		µg/kg		*50.0*		*120*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*62.9*		µg/kg		*50.0*		*126*	*70-130*		
LCS Dup (1717194-BSD1)					Prepared: 11-Oct-17 Analyzed: 12-Oct-17					
C5-C8 Aliphatic Hydrocarbons	**42.7**	D	µg/kg		60.0		71	70-130	2	25
C9-C12 Aliphatic Hydrocarbons	**51.5**	D	µg/kg		60.0		86	70-130	6	25
C9-C10 Aromatic Hydrocarbons	**22.0**	D	µg/kg		20.0		110	70-130	2	25
Unadjusted C5-C8 Aliphatic Hydrocarbons	**181**	D	µg/kg		200		90	70-130	4	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	**73.6**	D	µg/kg		80.0		92	70-130	5	25
Surrogate: 2,5-Dibromotoluene (FID)	*62.4*		µg/kg		*50.0*		*125*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*64.6*		µg/kg		*50.0*		*129*	*70-130*		
SW846 8260C										
Batch 1717436 - SW846 5035A Soil (high level)										
Blank (1717436-BLK1)					Prepared & Analyzed: 13-Oct-17					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 50.0	D	µg/kg wet	50.0						
Acetone	< 500	D	µg/kg wet	500						
Benzene	< 50.0	D	µg/kg wet	50.0						
Bromobenzene	< 50.0	D	µg/kg wet	50.0						
Bromochloromethane	< 50.0	D	µg/kg wet	50.0						
Bromodichloromethane	< 50.0	D	µg/kg wet	50.0						
Bromoform	< 50.0	D	µg/kg wet	50.0						
Bromomethane	< 100	D	µg/kg wet	100						
2-Butanone (MEK)	< 100	D	µg/kg wet	100						
n-Butylbenzene	< 50.0	D	µg/kg wet	50.0						
sec-Butylbenzene	< 50.0	D	µg/kg wet	50.0						
tert-Butylbenzene	< 50.0	D	µg/kg wet	50.0						
Carbon disulfide	< 100	D	µg/kg wet	100						
Carbon tetrachloride	< 50.0	D	µg/kg wet	50.0						
Chlorobenzene	< 50.0	D	µg/kg wet	50.0						
Chloroethane	< 100	D	µg/kg wet	100						
Chloroform	< 50.0	D	µg/kg wet	50.0						
Chloromethane	< 100	D	µg/kg wet	100						
2-Chlorotoluene	< 50.0	D	µg/kg wet	50.0						
4-Chlorotoluene	< 50.0	D	µg/kg wet	50.0						
1,2-Dibromo-3-chloropropane	< 100	D	µg/kg wet	100						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717436 - SW846 5035A Soil (high level)										
Blank (1717436-BLK1)					Prepared & Analyzed: 13-Oct-17					
Dibromochloromethane	< 50.0	D	µg/kg wet	50.0						
1,2-Dibromoethane (EDB)	< 50.0	D	µg/kg wet	50.0						
Dibromomethane	< 50.0	D	µg/kg wet	50.0						
1,2-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,3-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,4-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0						
Dichlorodifluoromethane (Freon12)	< 100	D	µg/kg wet	100						
1,1-Dichloroethane	< 50.0	D	µg/kg wet	50.0						
1,2-Dichloroethane	< 50.0	D	µg/kg wet	50.0						
1,1-Dichloroethene	< 50.0	D	µg/kg wet	50.0						
cis-1,2-Dichloroethene	< 50.0	D	µg/kg wet	50.0						
trans-1,2-Dichloroethene	< 50.0	D	µg/kg wet	50.0						
1,2-Dichloropropane	< 50.0	D	µg/kg wet	50.0						
1,3-Dichloropropane	< 50.0	D	µg/kg wet	50.0						
2,2-Dichloropropane	< 50.0	D	µg/kg wet	50.0						
1,1-Dichloropropene	< 50.0	D	µg/kg wet	50.0						
cis-1,3-Dichloropropene	< 50.0	D	µg/kg wet	50.0						
trans-1,3-Dichloropropene	< 50.0	D	µg/kg wet	50.0						
Ethylbenzene	< 50.0	D	µg/kg wet	50.0						
Hexachlorobutadiene	< 50.0	D	µg/kg wet	50.0						
2-Hexanone (MBK)	< 100	D	µg/kg wet	100						
Isopropylbenzene	< 50.0	D	µg/kg wet	50.0						
4-Isopropyltoluene	< 50.0	D	µg/kg wet	50.0						
Methyl tert-butyl ether	< 50.0	D	µg/kg wet	50.0						
4-Methyl-2-pentanone (MIBK)	< 100	D	µg/kg wet	100						
Methylene chloride	< 100	D	µg/kg wet	100						
Naphthalene	< 50.0	D	µg/kg wet	50.0						
n-Propylbenzene	< 50.0	D	µg/kg wet	50.0						
Styrene	< 50.0	D	µg/kg wet	50.0						
1,1,1,2-Tetrachloroethane	< 50.0	D	µg/kg wet	50.0						
1,1,2,2-Tetrachloroethane	< 50.0	D	µg/kg wet	50.0						
Tetrachloroethene	< 50.0	D	µg/kg wet	50.0						
Toluene	< 50.0	D	µg/kg wet	50.0						
1,2,3-Trichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,2,4-Trichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,1,1-Trichloroethane	< 50.0	D	µg/kg wet	50.0						
1,1,2-Trichloroethane	< 50.0	D	µg/kg wet	50.0						
Trichloroethene	< 50.0	D	µg/kg wet	50.0						
Trichlorofluoromethane (Freon 11)	< 50.0	D	µg/kg wet	50.0						
1,2,3-Trichloropropane	< 50.0	D	µg/kg wet	50.0						
1,2,4-Trimethylbenzene	< 50.0	D	µg/kg wet	50.0						
1,3,5-Trimethylbenzene	< 50.0	D	µg/kg wet	50.0						
Vinyl chloride	< 50.0	D	µg/kg wet	50.0						
m,p-Xylene	< 100	D	µg/kg wet	100						
o-Xylene	< 50.0	D	µg/kg wet	50.0						
Tetrahydrofuran	< 100	D	µg/kg wet	100						
Ethyl ether	< 50.0	D	µg/kg wet	50.0						
Tert-amyl methyl ether	< 50.0	D	µg/kg wet	50.0						
Ethyl tert-butyl ether	< 50.0	D	µg/kg wet	50.0						
Di-isopropyl ether	< 50.0	D	µg/kg wet	50.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717436 - SW846 5035A Soil (high level)										
Blank (1717436-BLK1)							Prepared & Analyzed: 13-Oct-17			
1,4-Dioxane	< 1000	D	µg/kg wet	1000						
Surrogate: 4-Bromofluorobenzene	*47.7*		µg/kg		*50.0*		*95*	*70-130*		
Surrogate: Toluene-d8	*50.5*		µg/kg		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*53.8*		µg/kg		*50.0*		*108*	*70-130*		
Surrogate: Dibromofluoromethane	*52.1*		µg/kg		*50.0*		*104*	*70-130*		
LCS (1717436-BS1)							Prepared & Analyzed: 13-Oct-17			
1,1,2-Trichlorotrifluoroethane (Freon 113)	**13.3**	QC2, D	µg/kg		20.0		67	70-130		
Acetone	**25.6**	D	µg/kg		20.0		128	70-130		
Benzene	**21.4**	D	µg/kg		20.0		107	70-130		
Bromobenzene	**21.8**	D	µg/kg		20.0		109	70-130		
Bromochloromethane	**21.6**	D	µg/kg		20.0		108	70-130		
Bromodichloromethane	**21.6**	D	µg/kg		20.0		108	70-130		
Bromoform	**21.9**	D	µg/kg		20.0		110	70-130		
Bromomethane	**31.5**	D	µg/kg		20.0		158	70-130		
2-Butanone (MEK)	**19.5**	D	µg/kg		20.0		98	70-130		
n-Butylbenzene	**17.1**	D	µg/kg		20.0		86	70-130		
sec-Butylbenzene	**18.0**	D	µg/kg		20.0		90	70-130		
tert-Butylbenzene	**18.6**	D	µg/kg		20.0		93	70-130		
Carbon disulfide	**17.8**	D	µg/kg		20.0		89	70-130		
Carbon tetrachloride	**15.9**	D	µg/kg		20.0		79	70-130		
Chlorobenzene	**21.5**	D	µg/kg		20.0		107	70-130		
Chloroethane	**23.5**	D	µg/kg		20.0		118	70-130		
Chloroform	**22.2**	D	µg/kg		20.0		111	70-130		
Chloromethane	**18.3**	D	µg/kg		20.0		92	70-130		
2-Chlorotoluene	**21.6**	D	µg/kg		20.0		108	70-130		
4-Chlorotoluene	**21.5**	D	µg/kg		20.0		108	70-130		
1,2-Dibromo-3-chloropropane	**20.8**	D	µg/kg		20.0		104	70-130		
Dibromochloromethane	**21.6**	D	µg/kg		20.0		108	70-130		
1,2-Dibromoethane (EDB)	**21.2**	D	µg/kg		20.0		106	70-130		
Dibromomethane	**23.1**	D	µg/kg		20.0		115	70-130		
1,2-Dichlorobenzene	**21.6**	D	µg/kg		20.0		108	70-130		
1,3-Dichlorobenzene	**21.7**	D	µg/kg		20.0		108	70-130		
1,4-Dichlorobenzene	**20.9**	D	µg/kg		20.0		105	70-130		
Dichlorodifluoromethane (Freon12)	**14.7**	D	µg/kg		20.0		73	70-130		
1,1-Dichloroethane	**21.8**	D	µg/kg		20.0		109	70-130		
1,2-Dichloroethane	**23.2**	D	µg/kg		20.0		116	70-130		
1,1-Dichloroethene	**17.7**	D	µg/kg		20.0		89	70-130		
cis-1,2-Dichloroethene	**22.2**	D	µg/kg		20.0		111	70-130		
trans-1,2-Dichloroethene	**19.3**	D	µg/kg		20.0		97	70-130		
1,2-Dichloropropane	**22.3**	D	µg/kg		20.0		112	70-130		
1,3-Dichloropropane	**22.9**	D	µg/kg		20.0		114	70-130		
2,2-Dichloropropane	**18.7**	D	µg/kg		20.0		94	70-130		
1,1-Dichloropropene	**16.5**	D	µg/kg		20.0		82	70-130		
cis-1,3-Dichloropropene	**19.7**	D	µg/kg		20.0		98	70-130		
trans-1,3-Dichloropropene	**20.0**	D	µg/kg		20.0		100	70-130		
Ethylbenzene	**20.4**	D	µg/kg		20.0		102	70-130		
Hexachlorobutadiene	**16.6**	D	µg/kg		20.0		83	70-130		
2-Hexanone (MBK)	**19.7**	D	µg/kg		20.0		98	70-130		
Isopropylbenzene	**19.2**	D	µg/kg		20.0		96	70-130		
4-Isopropyltoluene	**18.4**	D	µg/kg		20.0		92	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717436 - SW846 5035A Soil (high level)										
LCS (1717436-BS1)						Prepared & Analyzed: 13-Oct-17				
Methyl tert-butyl ether	**21.6**	D	µg/kg		20.0		108	70-130		
4-Methyl-2-pentanone (MIBK)	**20.5**	D	µg/kg		20.0		103	70-130		
Methylene chloride	**21.5**	D	µg/kg		20.0		108	70-130		
Naphthalene	**19.7**	D	µg/kg		20.0		98	70-130		
n-Propylbenzene	**18.9**	D	µg/kg		20.0		95	70-130		
Styrene	**20.2**	D	µg/kg		20.0		101	70-130		
1,1,1,2-Tetrachloroethane	**21.4**	D	µg/kg		20.0		107	70-130		
1,1,2,2-Tetrachloroethane	**22.6**	D	µg/kg		20.0		113	70-130		
Tetrachloroethene	**16.5**	D	µg/kg		20.0		83	70-130		
Toluene	**20.5**	D	µg/kg		20.0		103	70-130		
1,2,3-Trichlorobenzene	**20.3**	D	µg/kg		20.0		101	70-130		
1,2,4-Trichlorobenzene	**18.6**	D	µg/kg		20.0		93	70-130		
1,1,1-Trichloroethane	**18.3**	D	µg/kg		20.0		92	70-130		
1,1,2-Trichloroethane	**23.4**	D	µg/kg		20.0		117	70-130		
Trichloroethene	**19.6**	D	µg/kg		20.0		98	70-130		
Trichlorofluoromethane (Freon 11)	**17.0**	D	µg/kg		20.0		85	70-130		
1,2,3-Trichloropropane	**23.6**	D	µg/kg		20.0		118	70-130		
1,2,4-Trimethylbenzene	**21.1**	D	µg/kg		20.0		105	70-130		
1,3,5-Trimethylbenzene	**20.2**	D	µg/kg		20.0		101	70-130		
Vinyl chloride	**22.1**	D	µg/kg		20.0		111	70-130		
m,p-Xylene	**20.8**	D	µg/kg		20.0		104	70-130		
o-Xylene	**22.4**	D	µg/kg		20.0		112	70-130		
Tetrahydrofuran	**21.2**	D	µg/kg		20.0		106	70-130		
Ethyl ether	**25.5**	D	µg/kg		20.0		128	70-130		
Tert-amyl methyl ether	**24.3**	D	µg/kg		20.0		121	70-130		
Ethyl tert-butyl ether	**22.1**	D	µg/kg		20.0		111	70-130		
Di-isopropyl ether	**21.7**	D	µg/kg		20.0		109	70-130		
1,4-Dioxane	**179**	D	µg/kg		200		89	70-130		
Surrogate: 4-Bromofluorobenzene	*50.7*		µg/kg		*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*49.9*		µg/kg		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.3*		µg/kg		*50.0*		*101*	*70-130*		
Surrogate: Dibromofluoromethane	*51.6*		µg/kg		*50.0*		*103*	*70-130*		
LCS Dup (1717436-BSD1)						Prepared & Analyzed: 13-Oct-17				
1,1,2-Trichlorotrifluoroethane (Freon 113)	**12.2**	QC2, D	µg/kg		20.0		61	70-130	9	30
Acetone	**22.9**	D	µg/kg		20.0		115	70-130	11	30
Benzene	**20.5**	D	µg/kg		20.0		102	70-130	4	30
Bromobenzene	**20.6**	D	µg/kg		20.0		103	70-130	6	30
Bromochloromethane	**20.8**	D	µg/kg		20.0		104	70-130	3	30
Bromodichloromethane	**21.0**	D	µg/kg		20.0		105	70-130	3	30
Bromoform	**21.4**	D	µg/kg		20.0		107	70-130	2	30
Bromomethane	**31.6**	D	µg/kg		20.0		158	70-130	0.3	30
2-Butanone (MEK)	**20.0**	D	µg/kg		20.0		100	70-130	2	30
n-Butylbenzene	**16.7**	D	µg/kg		20.0		83	70-130	3	30
sec-Butylbenzene	**16.8**	D	µg/kg		20.0		84	70-130	7	30
tert-Butylbenzene	**17.3**	D	µg/kg		20.0		87	70-130	7	30
Carbon disulfide	**16.0**	D	µg/kg		20.0		80	70-130	11	30
Carbon tetrachloride	**15.0**	D	µg/kg		20.0		75	70-130	6	30
Chlorobenzene	**20.4**	D	µg/kg		20.0		102	70-130	5	30
Chloroethane	**22.0**	D	µg/kg		20.0		110	70-130	7	30
Chloroform	**21.5**	D	µg/kg		20.0		108	70-130	3	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717436 - SW846 5035A Soil (high level)										
LCS Dup (1717436-BSD1)					Prepared & Analyzed: 13-Oct-17					
Chloromethane	**17.0**	D	µg/kg		20.0		85	70-130	8	30
2-Chlorotoluene	**20.2**	D	µg/kg		20.0		101	70-130	7	30
4-Chlorotoluene	**20.3**	D	µg/kg		20.0		102	70-130	6	30
1,2-Dibromo-3-chloropropane	**21.3**	D	µg/kg		20.0		106	70-130	2	30
Dibromochloromethane	**21.1**	D	µg/kg		20.0		105	70-130	2	30
1,2-Dibromoethane (EDB)	**20.8**	D	µg/kg		20.0		104	70-130	2	30
Dibromomethane	**23.1**	D	µg/kg		20.0		115	70-130	0.04	30
1,2-Dichlorobenzene	**21.1**	D	µg/kg		20.0		105	70-130	3	30
1,3-Dichlorobenzene	**20.2**	D	µg/kg		20.0		101	70-130	7	30
1,4-Dichlorobenzene	**20.4**	D	µg/kg		20.0		102	70-130	2	30
Dichlorodifluoromethane (Freon12)	**14.0**	D	µg/kg		20.0		70	70-130	5	30
1,1-Dichloroethane	**20.9**	D	µg/kg		20.0		105	70-130	4	30
1,2-Dichloroethane	**22.6**	D	µg/kg		20.0		113	70-130	3	30
1,1-Dichloroethene	**16.9**	D	µg/kg		20.0		84	70-130	5	30
cis-1,2-Dichloroethene	**21.0**	D	µg/kg		20.0		105	70-130	6	30
trans-1,2-Dichloroethene	**18.5**	D	µg/kg		20.0		92	70-130	5	30
1,2-Dichloropropane	**21.6**	D	µg/kg		20.0		108	70-130	3	30
1,3-Dichloropropane	**22.5**	D	µg/kg		20.0		112	70-130	2	30
2,2-Dichloropropane	**17.4**	D	µg/kg		20.0		87	70-130	7	30
1,1-Dichloropropene	**16.1**	D	µg/kg		20.0		81	70-130	2	30
cis-1,3-Dichloropropene	**19.4**	D	µg/kg		20.0		97	70-130	1	30
trans-1,3-Dichloropropene	**20.0**	D	µg/kg		20.0		100	70-130	0.1	30
Ethylbenzene	**19.3**	D	µg/kg		20.0		97	70-130	5	30
Hexachlorobutadiene	**15.5**	D	µg/kg		20.0		78	70-130	7	30
2-Hexanone (MBK)	**20.0**	D	µg/kg		20.0		100	70-130	2	30
Isopropylbenzene	**18.0**	D	µg/kg		20.0		90	70-130	7	30
4-Isopropyltoluene	**17.8**	D	µg/kg		20.0		89	70-130	3	30
Methyl tert-butyl ether	**21.6**	D	µg/kg		20.0		108	70-130	0	30
4-Methyl-2-pentanone (MIBK)	**20.6**	D	µg/kg		20.0		103	70-130	0.2	30
Methylene chloride	**18.6**	D	µg/kg		20.0		93	70-130	14	30
Naphthalene	**19.3**	D	µg/kg		20.0		96	70-130	2	30
n-Propylbenzene	**17.6**	D	µg/kg		20.0		88	70-130	7	30
Styrene	**19.1**	D	µg/kg		20.0		96	70-130	5	30
1,1,1,2-Tetrachloroethane	**20.4**	D	µg/kg		20.0		102	70-130	5	30
1,1,2,2-Tetrachloroethane	**21.8**	D	µg/kg		20.0		109	70-130	4	30
Tetrachloroethene	**15.2**	D	µg/kg		20.0		76	70-130	8	30
Toluene	**19.3**	D	µg/kg		20.0		97	70-130	6	30
1,2,3-Trichlorobenzene	**19.4**	D	µg/kg		20.0		97	70-130	4	30
1,2,4-Trichlorobenzene	**18.1**	D	µg/kg		20.0		91	70-130	3	30
1,1,1-Trichloroethane	**17.3**	D	µg/kg		20.0		87	70-130	6	30
1,1,2-Trichloroethane	**22.8**	D	µg/kg		20.0		114	70-130	3	30
Trichloroethene	**18.6**	D	µg/kg		20.0		93	70-130	5	30
Trichlorofluoromethane (Freon 11)	**16.1**	D	µg/kg		20.0		81	70-130	5	30
1,2,3-Trichloropropane	**23.0**	D	µg/kg		20.0		115	70-130	2	30
1,2,4-Trimethylbenzene	**19.7**	D	µg/kg		20.0		99	70-130	7	30
1,3,5-Trimethylbenzene	**18.8**	D	µg/kg		20.0		94	70-130	8	30
Vinyl chloride	**19.6**	D	µg/kg		20.0		98	70-130	12	30
m,p-Xylene	**19.3**	D	µg/kg		20.0		96	70-130	7	30
o-Xylene	**21.0**	D	µg/kg		20.0		105	70-130	7	30
Tetrahydrofuran	**21.4**	D	µg/kg		20.0		107	70-130	0.7	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717436 - SW846 5035A Soil (high level)										
LCS Dup (1717436-BSD1)					Prepared & Analyzed: 13-Oct-17					
Ethyl ether	**23.7**	D	µg/kg		20.0		118	70-130	7	30
Tert-amyl methyl ether	**23.5**	D	µg/kg		20.0		117	70-130	3	30
Ethyl tert-butyl ether	**22.1**	D	µg/kg		20.0		110	70-130	0.2	30
Di-isopropyl ether	**21.3**	D	µg/kg		20.0		107	70-130	2	30
1,4-Dioxane	**177**	D	µg/kg		200		88	70-130	1	30
Surrogate: 4-Bromofluorobenzene	*50.0*		µg/kg		*50.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*49.7*		µg/kg		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.1*		µg/kg		*50.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*51.7*		µg/kg		*50.0*		*103*	*70-130*		
Batch 1717540 - SW846 5035A Soil (high level)										
Blank (1717540-BLK1)					Prepared & Analyzed: 16-Oct-17					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 50.0	D	µg/kg wet	50.0						
Acetone	< 500	D	µg/kg wet	500						
Benzene	< 50.0	D	µg/kg wet	50.0						
Bromobenzene	< 50.0	D	µg/kg wet	50.0						
Bromochloromethane	< 50.0	D	µg/kg wet	50.0						
Bromodichloromethane	< 50.0	D	µg/kg wet	50.0						
Bromoform	< 50.0	D	µg/kg wet	50.0						
Bromomethane	< 100	D	µg/kg wet	100						
2-Butanone (MEK)	< 100	D	µg/kg wet	100						
n-Butylbenzene	< 50.0	D	µg/kg wet	50.0						
sec-Butylbenzene	< 50.0	D	µg/kg wet	50.0						
tert-Butylbenzene	< 50.0	D	µg/kg wet	50.0						
Carbon disulfide	< 100	D	µg/kg wet	100						
Carbon tetrachloride	< 50.0	D	µg/kg wet	50.0						
Chlorobenzene	< 50.0	D	µg/kg wet	50.0						
Chloroethane	< 100	D	µg/kg wet	100						
Chloroform	< 50.0	D	µg/kg wet	50.0						
Chloromethane	< 100	D	µg/kg wet	100						
2-Chlorotoluene	< 50.0	D	µg/kg wet	50.0						
4-Chlorotoluene	< 50.0	D	µg/kg wet	50.0						
1,2-Dibromo-3-chloropropane	< 100	D	µg/kg wet	100						
Dibromochloromethane	< 50.0	D	µg/kg wet	50.0						
1,2-Dibromoethane (EDB)	< 50.0	D	µg/kg wet	50.0						
Dibromomethane	< 50.0	D	µg/kg wet	50.0						
1,2-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,3-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,4-Dichlorobenzene	< 50.0	D	µg/kg wet	50.0						
Dichlorodifluoromethane (Freon12)	< 100	D	µg/kg wet	100						
1,1-Dichloroethane	< 50.0	D	µg/kg wet	50.0						
1,2-Dichloroethane	< 50.0	D	µg/kg wet	50.0						
1,1-Dichloroethene	< 50.0	D	µg/kg wet	50.0						
cis-1,2-Dichloroethene	< 50.0	D	µg/kg wet	50.0						
trans-1,2-Dichloroethene	< 50.0	D	µg/kg wet	50.0						
1,2-Dichloropropane	< 50.0	D	µg/kg wet	50.0						
1,3-Dichloropropane	< 50.0	D	µg/kg wet	50.0						
2,2-Dichloropropane	< 50.0	D	µg/kg wet	50.0						
1,1-Dichloropropene	< 50.0	D	µg/kg wet	50.0						
cis-1,3-Dichloropropene	< 50.0	D	µg/kg wet	50.0						
trans-1,3-Dichloropropene	< 50.0	D	µg/kg wet	50.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717540 - SW846 5035A Soil (high level)										
Blank (1717540-BLK1)						Prepared & Analyzed: 16-Oct-17				
Ethylbenzene	< 50.0	D	µg/kg wet	50.0						
Hexachlorobutadiene	< 50.0	D	µg/kg wet	50.0						
2-Hexanone (MBK)	< 100	D	µg/kg wet	100						
Isopropylbenzene	< 50.0	D	µg/kg wet	50.0						
4-Isopropyltoluene	< 50.0	D	µg/kg wet	50.0						
Methyl tert-butyl ether	< 50.0	D	µg/kg wet	50.0						
4-Methyl-2-pentanone (MIBK)	< 100	D	µg/kg wet	100						
Methylene chloride	< 100	D	µg/kg wet	100						
Naphthalene	< 50.0	D	µg/kg wet	50.0						
n-Propylbenzene	< 50.0	D	µg/kg wet	50.0						
Styrene	< 50.0	D	µg/kg wet	50.0						
1,1,1,2-Tetrachloroethane	< 50.0	D	µg/kg wet	50.0						
1,1,2,2-Tetrachloroethane	< 50.0	D	µg/kg wet	50.0						
Tetrachloroethene	< 50.0	D	µg/kg wet	50.0						
Toluene	< 50.0	D	µg/kg wet	50.0						
1,2,3-Trichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,2,4-Trichlorobenzene	< 50.0	D	µg/kg wet	50.0						
1,1,1-Trichloroethane	< 50.0	D	µg/kg wet	50.0						
1,1,2-Trichloroethane	< 50.0	D	µg/kg wet	50.0						
Trichloroethene	< 50.0	D	µg/kg wet	50.0						
Trichlorofluoromethane (Freon 11)	< 50.0	D	µg/kg wet	50.0						
1,2,3-Trichloropropane	< 50.0	D	µg/kg wet	50.0						
1,2,4-Trimethylbenzene	< 50.0	D	µg/kg wet	50.0						
1,3,5-Trimethylbenzene	< 50.0	D	µg/kg wet	50.0						
Vinyl chloride	< 50.0	D	µg/kg wet	50.0						
m,p-Xylene	< 100	D	µg/kg wet	100						
o-Xylene	< 50.0	D	µg/kg wet	50.0						
Tetrahydrofuran	< 100	D	µg/kg wet	100						
Ethyl ether	< 50.0	D	µg/kg wet	50.0						
Tert-amyl methyl ether	< 50.0	D	µg/kg wet	50.0						
Ethyl tert-butyl ether	< 50.0	D	µg/kg wet	50.0						
Di-isopropyl ether	< 50.0	D	µg/kg wet	50.0						
1,4-Dioxane	< 1000	D	µg/kg wet	1000						
Surrogate: 4-Bromofluorobenzene	*49.0*		µg/kg		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*48.8*		µg/kg		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.4*		µg/kg		*50.0*		*101*	*70-130*		
Surrogate: Dibromofluoromethane	*50.7*		µg/kg		*50.0*		*101*	*70-130*		
LCS (1717540-BS1)						Prepared & Analyzed: 16-Oct-17				
1,1,2-Trichlorotrifluoroethane (Freon 113)	**22.9**	D	µg/kg		20.0		114	70-130		
Acetone	**21.8**	D	µg/kg		20.0		109	70-130		
Benzene	**23.3**	D	µg/kg		20.0		117	70-130		
Bromobenzene	**23.1**	D	µg/kg		20.0		115	70-130		
Bromochloromethane	**22.6**	D	µg/kg		20.0		113	70-130		
Bromodichloromethane	**22.6**	D	µg/kg		20.0		113	70-130		
Bromoform	**23.3**	D	µg/kg		20.0		116	70-130		
Bromomethane	**34.8**	QC2, D	µg/kg		20.0		174	70-130		
2-Butanone (MEK)	**21.4**	D	µg/kg		20.0		107	70-130		
n-Butylbenzene	**23.3**	D	µg/kg		20.0		116	70-130		
sec-Butylbenzene	**23.5**	D	µg/kg		20.0		117	70-130		
tert-Butylbenzene	**23.4**	D	µg/kg		20.0		117	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717540 - SW846 5035A Soil (high level)										
LCS (1717540-BS1)						Prepared & Analyzed: 16-Oct-17				
Carbon disulfide	**23.3**	D	µg/kg		20.0		116	70-130		
Carbon tetrachloride	**22.7**	D	µg/kg		20.0		113	70-130		
Chlorobenzene	**22.9**	D	µg/kg		20.0		114	70-130		
Chloroethane	**24.5**	D	µg/kg		20.0		122	70-130		
Chloroform	**23.4**	D	µg/kg		20.0		117	70-130		
Chloromethane	**17.9**	D	µg/kg		20.0		89	70-130		
2-Chlorotoluene	**23.4**	D	µg/kg		20.0		117	70-130		
4-Chlorotoluene	**22.9**	D	µg/kg		20.0		114	70-130		
1,2-Dibromo-3-chloropropane	**22.5**	D	µg/kg		20.0		113	70-130		
Dibromochloromethane	**22.6**	D	µg/kg		20.0		113	70-130		
1,2-Dibromoethane (EDB)	**21.9**	D	µg/kg		20.0		110	70-130		
Dibromomethane	**23.8**	D	µg/kg		20.0		119	70-130		
1,2-Dichlorobenzene	**23.0**	D	µg/kg		20.0		115	70-130		
1,3-Dichlorobenzene	**22.4**	D	µg/kg		20.0		112	70-130		
1,4-Dichlorobenzene	**22.6**	D	µg/kg		20.0		113	70-130		
Dichlorodifluoromethane (Freon12)	**21.4**	D	µg/kg		20.0		107	70-130		
1,1-Dichloroethane	**23.4**	D	µg/kg		20.0		117	70-130		
1,2-Dichloroethane	**22.9**	D	µg/kg		20.0		114	70-130		
1,1-Dichloroethene	**22.6**	D	µg/kg		20.0		113	70-130		
cis-1,2-Dichloroethene	**23.8**	D	µg/kg		20.0		119	70-130		
trans-1,2-Dichloroethene	**23.2**	D	µg/kg		20.0		116	70-130		
1,2-Dichloropropane	**23.1**	D	µg/kg		20.0		116	70-130		
1,3-Dichloropropane	**22.8**	D	µg/kg		20.0		114	70-130		
2,2-Dichloropropane	**29.8**	QC2, D	µg/kg		20.0		149	70-130		
1,1-Dichloropropene	**23.6**	D	µg/kg		20.0		118	70-130		
cis-1,3-Dichloropropene	**22.3**	D	µg/kg		20.0		112	70-130		
trans-1,3-Dichloropropene	**22.5**	D	µg/kg		20.0		113	70-130		
Ethylbenzene	**23.7**	D	µg/kg		20.0		119	70-130		
Hexachlorobutadiene	**22.8**	D	µg/kg		20.0		114	70-130		
2-Hexanone (MBK)	**21.0**	D	µg/kg		20.0		105	70-130		
Isopropylbenzene	**23.2**	D	µg/kg		20.0		116	70-130		
4-Isopropyltoluene	**24.2**	D	µg/kg		20.0		121	70-130		
Methyl tert-butyl ether	**23.2**	D	µg/kg		20.0		116	70-130		
4-Methyl-2-pentanone (MIBK)	**21.3**	D	µg/kg		20.0		106	70-130		
Methylene chloride	**21.6**	D	µg/kg		20.0		108	70-130		
Naphthalene	**21.7**	D	µg/kg		20.0		108	70-130		
n-Propylbenzene	**23.4**	D	µg/kg		20.0		117	70-130		
Styrene	**21.8**	D	µg/kg		20.0		109	70-130		
1,1,1,2-Tetrachloroethane	**22.6**	D	µg/kg		20.0		113	70-130		
1,1,2,2-Tetrachloroethane	**22.0**	D	µg/kg		20.0		110	70-130		
Tetrachloroethene	**22.1**	D	µg/kg		20.0		111	70-130		
Toluene	**22.8**	D	µg/kg		20.0		114	70-130		
1,2,3-Trichlorobenzene	**22.0**	D	µg/kg		20.0		110	70-130		
1,2,4-Trichlorobenzene	**21.2**	D	µg/kg		20.0		106	70-130		
1,1,1-Trichloroethane	**24.0**	D	µg/kg		20.0		120	70-130		
1,1,2-Trichloroethane	**23.4**	D	µg/kg		20.0		117	70-130		
Trichloroethene	**23.4**	D	µg/kg		20.0		117	70-130		
Trichlorofluoromethane (Freon 11)	**24.5**	D	µg/kg		20.0		122	70-130		
1,2,3-Trichloropropane	**23.4**	D	µg/kg		20.0		117	70-130		
1,2,4-Trimethylbenzene	**23.1**	D	µg/kg		20.0		116	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717540 - SW846 5035A Soil (high level)										
LCS (1717540-BS1)					Prepared & Analyzed: 16-Oct-17					
1,3,5-Trimethylbenzene	**23.3**	D	µg/kg		20.0		116	70-130		
Vinyl chloride	**24.7**	D	µg/kg		20.0		124	70-130		
m,p-Xylene	**23.8**	D	µg/kg		20.0		119	70-130		
o-Xylene	**23.9**	D	µg/kg		20.0		120	70-130		
Tetrahydrofuran	**22.8**	D	µg/kg		20.0		114	70-130		
Ethyl ether	**24.3**	D	µg/kg		20.0		122	70-130		
Tert-amyl methyl ether	**22.6**	D	µg/kg		20.0		113	70-130		
Ethyl tert-butyl ether	**23.8**	D	µg/kg		20.0		119	70-130		
Di-isopropyl ether	**22.8**	D	µg/kg		20.0		114	70-130		
1,4-Dioxane	**179**	D	µg/kg		200		89	70-130		
Surrogate: 4-Bromofluorobenzene	*50.0*		µg/kg		*50.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*49.6*		µg/kg		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.7*		µg/kg		*50.0*		*99*	*70-130*		
Surrogate: Dibromofluoromethane	*51.5*		µg/kg		*50.0*		*103*	*70-130*		
LCS Dup (1717540-BSD1)					Prepared & Analyzed: 16-Oct-17					
1,1,2-Trichlorotrifluoroethane (Freon 113)	**19.6**	D	µg/kg		20.0		98	70-130	15	30
Acetone	**20.6**	D	µg/kg		20.0		103	70-130	6	30
Benzene	**22.5**	D	µg/kg		20.0		112	70-130	4	30
Bromobenzene	**21.6**	D	µg/kg		20.0		108	70-130	7	30
Bromochloromethane	**21.7**	D	µg/kg		20.0		108	70-130	4	30
Bromodichloromethane	**21.8**	D	µg/kg		20.0		109	70-130	4	30
Bromoform	**22.9**	D	µg/kg		20.0		114	70-130	2	30
Bromomethane	**32.9**	QC2, D	µg/kg		20.0		164	70-130	5	30
2-Butanone (MEK)	**20.9**	D	µg/kg		20.0		104	70-130	2	30
n-Butylbenzene	**22.2**	D	µg/kg		20.0		111	70-130	5	30
sec-Butylbenzene	**22.0**	D	µg/kg		20.0		110	70-130	7	30
tert-Butylbenzene	**22.1**	D	µg/kg		20.0		111	70-130	6	30
Carbon disulfide	**18.1**	D	µg/kg		20.0		91	70-130	25	30
Carbon tetrachloride	**21.5**	D	µg/kg		20.0		107	70-130	5	30
Chlorobenzene	**21.8**	D	µg/kg		20.0		109	70-130	5	30
Chloroethane	**22.9**	D	µg/kg		20.0		114	70-130	7	30
Chloroform	**22.8**	D	µg/kg		20.0		114	70-130	3	30
Chloromethane	**16.8**	D	µg/kg		20.0		84	70-130	6	30
2-Chlorotoluene	**22.2**	D	µg/kg		20.0		111	70-130	5	30
4-Chlorotoluene	**21.7**	D	µg/kg		20.0		109	70-130	5	30
1,2-Dibromo-3-chloropropane	**21.8**	D	µg/kg		20.0		109	70-130	3	30
Dibromochloromethane	**21.8**	D	µg/kg		20.0		109	70-130	3	30
1,2-Dibromoethane (EDB)	**21.7**	D	µg/kg		20.0		109	70-130	1	30
Dibromomethane	**23.1**	D	µg/kg		20.0		115	70-130	3	30
1,2-Dichlorobenzene	**22.2**	D	µg/kg		20.0		111	70-130	4	30
1,3-Dichlorobenzene	**21.3**	D	µg/kg		20.0		106	70-130	5	30
1,4-Dichlorobenzene	**21.3**	D	µg/kg		20.0		107	70-130	6	30
Dichlorodifluoromethane (Freon12)	**20.5**	D	µg/kg		20.0		102	70-130	4	30
1,1-Dichloroethane	**22.3**	D	µg/kg		20.0		112	70-130	5	30
1,2-Dichloroethane	**22.4**	D	µg/kg		20.0		112	70-130	2	30
1,1-Dichloroethene	**21.1**	D	µg/kg		20.0		105	70-130	7	30
cis-1,2-Dichloroethene	**22.8**	D	µg/kg		20.0		114	70-130	4	30
trans-1,2-Dichloroethene	**22.4**	D	µg/kg		20.0		112	70-130	4	30
1,2-Dichloropropane	**22.4**	D	µg/kg		20.0		112	70-130	3	30
1,3-Dichloropropane	**22.1**	D	µg/kg		20.0		110	70-130	3	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1717540 - SW846 5035A Soil (high level)										
LCS Dup (1717540-BSD1)					Prepared & Analyzed: 16-Oct-17					
2,2-Dichloropropane	**28.1**	QC2, D	µg/kg		20.0		140	70-130	6	30
1,1-Dichloropropene	**22.4**	D	µg/kg		20.0		112	70-130	5	30
cis-1,3-Dichloropropene	**21.9**	D	µg/kg		20.0		109	70-130	2	30
trans-1,3-Dichloropropene	**22.2**	D	µg/kg		20.0		111	70-130	1	30
Ethylbenzene	**22.6**	D	µg/kg		20.0		113	70-130	5	30
Hexachlorobutadiene	**21.7**	D	µg/kg		20.0		109	70-130	5	30
2-Hexanone (MBK)	**20.4**	D	µg/kg		20.0		102	70-130	3	30
Isopropylbenzene	**22.1**	D	µg/kg		20.0		110	70-130	5	30
4-Isopropyltoluene	**22.7**	D	µg/kg		20.0		114	70-130	6	30
Methyl tert-butyl ether	**23.2**	D	µg/kg		20.0		116	70-130	0.2	30
4-Methyl-2-pentanone (MIBK)	**20.9**	D	µg/kg		20.0		104	70-130	2	30
Methylene chloride	**17.6**	D	µg/kg		20.0		88	70-130	20	30
Naphthalene	**19.7**	D	µg/kg		20.0		98	70-130	10	30
n-Propylbenzene	**22.1**	D	µg/kg		20.0		110	70-130	6	30
Styrene	**20.7**	D	µg/kg		20.0		103	70-130	5	30
1,1,1,2-Tetrachloroethane	**22.1**	D	µg/kg		20.0		110	70-130	2	30
1,1,2,2-Tetrachloroethane	**21.6**	D	µg/kg		20.0		108	70-130	2	30
Tetrachloroethene	**20.7**	D	µg/kg		20.0		104	70-130	7	30
Toluene	**21.6**	D	µg/kg		20.0		108	70-130	5	30
1,2,3-Trichlorobenzene	**20.2**	D	µg/kg		20.0		101	70-130	9	30
1,2,4-Trichlorobenzene	**19.6**	D	µg/kg		20.0		98	70-130	8	30
1,1,1-Trichloroethane	**22.9**	D	µg/kg		20.0		114	70-130	5	30
1,1,2-Trichloroethane	**22.8**	D	µg/kg		20.0		114	70-130	3	30
Trichloroethene	**22.3**	D	µg/kg		20.0		112	70-130	5	30
Trichlorofluoromethane (Freon 11)	**23.3**	D	µg/kg		20.0		116	70-130	5	30
1,2,3-Trichloropropane	**23.1**	D	µg/kg		20.0		116	70-130	1	30
1,2,4-Trimethylbenzene	**21.8**	D	µg/kg		20.0		109	70-130	6	30
1,3,5-Trimethylbenzene	**21.9**	D	µg/kg		20.0		109	70-130	6	30
Vinyl chloride	**25.1**	D	µg/kg		20.0		126	70-130	2	30
m,p-Xylene	**22.8**	D	µg/kg		20.0		114	70-130	5	30
o-Xylene	**22.9**	D	µg/kg		20.0		115	70-130	4	30
Tetrahydrofuran	**22.1**	D	µg/kg		20.0		110	70-130	3	30
Ethyl ether	**23.9**	D	µg/kg		20.0		120	70-130	2	30
Tert-amyl methyl ether	**22.4**	D	µg/kg		20.0		112	70-130	1	30
Ethyl tert-butyl ether	**23.8**	D	µg/kg		20.0		119	70-130	0.08	30
Di-isopropyl ether	**22.2**	D	µg/kg		20.0		111	70-130	3	30
1,4-Dioxane	**178**	D	µg/kg		200		89	70-130	0.5	30
Surrogate: 4-Bromofluorobenzene	*49.7*		µg/kg		*50.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*49.4*		µg/kg		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.7*		µg/kg		*50.0*		*99*	*70-130*		
Surrogate: Dibromofluoromethane	*51.9*		µg/kg		*50.0*		*104*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1717419 - SW846 3546										
Blank (1717419-BLK1)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
C9-C18 Aliphatic Hydrocarbons	< 9.98		mg/kg wet	9.98						
C19-C36 Aliphatic Hydrocarbons	< 9.98		mg/kg wet	9.98						
C11-C22 Aromatic Hydrocarbons	< 9.98		mg/kg wet	9.98						
Unadjusted C11-C22 Aromatic Hydrocarbons	< 9.98		mg/kg wet	9.98						
Total Petroleum Hydrocarbons	< 29.9		mg/kg wet	29.9						
Unadjusted Total Petroleum Hydrocarbons	< 29.9		mg/kg wet	29.9						
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet							
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet							
Surrogate: 1-Chlorooctadecane	*2.21*		mg/kg wet		*3.33*		*67*	*40-140*		
Surrogate: Ortho-Terphenyl	*1.84*		mg/kg wet		*3.33*		*55*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*1.36*		mg/kg wet		*2.66*		*51*	*40-140*		
LCS (1717419-BS1)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
C9-C18 Aliphatic Hydrocarbons	**19.9**		mg/kg wet	9.93	19.9		100	40-140		
C19-C36 Aliphatic Hydrocarbons	**24.4**		mg/kg wet	9.93	26.5		92	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	**32.8**		mg/kg wet	9.93	45.0		73	40-140		
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.65			0-200		
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.65			0-200		
Surrogate: 1-Chlorooctadecane	*1.97*		mg/kg wet		*3.31*		*60*	*40-140*		
Surrogate: Ortho-Terphenyl	*2.48*		mg/kg wet		*3.31*		*75*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*1.83*		mg/kg wet		*2.65*		*69*	*40-140*		
LCS (1717419-BS2)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
C9-C18 Aliphatic Hydrocarbons	**19.6**		mg/kg wet	10.0	20.0		98	40-140		
C19-C36 Aliphatic Hydrocarbons	**23.4**		mg/kg wet	10.0	26.7		88	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	**41.0**		mg/kg wet	10.0	45.3		90	40-140		
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.67			0-200		
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.67			0-200		
Surrogate: 1-Chlorooctadecane	*2.02*		mg/kg wet		*3.33*		*61*	*40-140*		
Surrogate: Ortho-Terphenyl	*3.02*		mg/kg wet		*3.33*		*91*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*1.98*		mg/kg wet		*2.67*		*74*	*40-140*		
LCS Dup (1717419-BSD1)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
C9-C18 Aliphatic Hydrocarbons	**15.9**		mg/kg wet	9.88	19.8		81	40-140	22	25
C19-C36 Aliphatic Hydrocarbons	**22.1**		mg/kg wet	9.88	26.3		84	40-140	10	25
Unadjusted C11-C22 Aromatic Hydrocarbons	**38.4**		mg/kg wet	9.88	44.8		86	40-140	16	25
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.63			0-200		200
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.63			0-200		200
Surrogate: 1-Chlorooctadecane	*1.68*		mg/kg wet		*3.29*		*51*	*40-140*		
Surrogate: Ortho-Terphenyl	*2.71*		mg/kg wet		*3.29*		*82*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*2.09*		mg/kg wet		*2.63*		*79*	*40-140*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 6010C										
Batch 1717347 - SW846 3051A										
Blank (1717347-BLK1)					Prepared: 13-Oct-17 Analyzed: 16-Oct-17					
Chromium	< 0.987		mg/kg wet	0.987						
Arsenic	< 1.48		mg/kg wet	1.48						
Copper	< 0.987		mg/kg wet	0.987						
Zinc	< 0.987		mg/kg wet	0.987						
Lead	< 1.48		mg/kg wet	1.48						
Reference (1717347-SRM1)					Prepared & Analyzed: 13-Oct-17					
Arsenic	**14.5**		mg/kg wet	1.50	15.0		97	70.3-130.1		
Copper	**78.0**		mg/kg wet	1.00	77.6		100	81.7-117.6		
Lead	**65.8**		mg/kg wet	1.50	70.5		93	82-117.3		
Zinc	**105**		mg/kg wet	1.00	113		93	83-117		
Chromium	**49.7**		mg/kg wet	1.00	51.7		96	80.1-119.6		
Reference (1717347-SRM2)					Prepared & Analyzed: 13-Oct-17					
Arsenic	**13.5**		mg/kg wet	1.50	14.9		91	70.3-130.1		
Copper	**73.8**		mg/kg wet	1.00	77.0		96	81.7-117.6		
Lead	**63.0**		mg/kg wet	1.50	69.9		90	82-117.3		
Chromium	**47.6**		mg/kg wet	1.00	51.3		93	80.1-119.6		
Zinc	**104**		mg/kg wet	1.00	112		93	83-117		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 9012B										
Batch 1717429 - General Preparation										
Blank (1717429-BLK1)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
Cyanide (total)	< 0.500		mg/kg wet	0.500						
LCS (1717429-BS1)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
Cyanide (total)	**24.8**		mg/kg wet	0.500	25.0		99	90-110		
Duplicate (1717429-DUP1)			**Source: SC40242-01**			Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
Cyanide (total)	< 0.317		mg/kg dry	0.317		BRL				35
Matrix Spike (1717429-MS1)			**Source: SC40242-01**			Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
Cyanide (total)	**14.3**		mg/kg dry	0.301	15.1	BRL	95	90-110		
Matrix Spike Dup (1717429-MSD1)			**Source: SC40242-01**			Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
Cyanide (total)	**16.0**		mg/kg dry	0.326	16.3	BRL	98	90-110	11	35
Reference (1717429-SRM1)						Prepared: 13-Oct-17 Analyzed: 14-Oct-17				
Cyanide (total)	**76.8**		mg/kg wet	1.13	65.2		118	39.4-183		

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S709112				
Calibration Check (S709112-CCV1)				
C9-C18 Aliphatic Hydrocarbons	301660.5	191658.6	-13.2	25
C19-C36 Aliphatic Hydrocarbons	376153.2	207478.9	-2.5	25
Naphthalene (aliphatic fraction)	271837.9			
2-Methylnaphthalene (aliphatic fraction)	271519.6			
Calibration Check (S709112-CCV2)				
C9-C18 Aliphatic Hydrocarbons	301660.5	208915.1	-5.0	25
C19-C36 Aliphatic Hydrocarbons	376153.2	204403.7	-4.2	25
Unadjusted C11-C22 Aromatic Hydrocarbons	218532.8	194608.1	5.0	25
Naphthalene (aliphatic fraction)	271837.9	233315.4	-14.2	
2-Methylnaphthalene (aliphatic fraction)	271519.6	17758.84	-93.5	
Calibration Check (S709112-CCV3)				
C9-C18 Aliphatic Hydrocarbons	301660.5	262964.3	20.8	25
C19-C36 Aliphatic Hydrocarbons	376153.2	219795.9	4.3	25
Naphthalene (aliphatic fraction)	271837.9			
2-Methylnaphthalene (aliphatic fraction)	271519.6			

The following list indicates the date and time low-level VOC soil/sediment samples were placed in the freezer at the lab:

SC40242-01	*SP11_101117-1*	10/11/2017 6:31 PM

Notes and Definitions

D	Data reported from a dilution
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
VOC8	Reporting limits reflect SW846 5035A High Level extraction technique due to interference and/or QC issues using SW846 5035A Low Level extraction technique.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

SC 410242

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

☐ Standard TAT - 7 to 10 business days

☒ Rush TAT - Date Needed: 3-Day

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

RR# 1776

Report To: AECOM
250 Apollo Dr.
Chelmsford, MA 01824

Telephone #: 978-905-2100
Project Mgr: Art Tadder

Invoice To:

P.O No.: Quote #:

Project No: 60478638.5.01
Site Name: LMC - Wilmington
Location: 40 Fordham Rd, Wilmington State: MA
Sampler(s): Tom Catt

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= ICE 12=

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: VOCs	VPH (carbon ranges)	EPH (carbon ranges)	Cr, Cu, Pb, As, Zn, cyanide					Check if chlorinated
410242-01	SPIL_101117-1	10-11-17	1030	C	SO	4	1			X	X	X	X					☐
-02	TB-101117	10-11-17	1025	G	SO	2				X								☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐

List Preservative Code below: 7,9 | 7 | 11 | 4

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☑ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:
		10/11/17	15:10
		10/11/17	1831

Temp °C: Observed 3.7 | Correction Factor 0 | Corrected 3.7 | IR ID # 2

☐ EDD format: nicole.callahan@aecom.com
☒ E-mail to: Arthur.Tadder@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Batch Summary

1717194

Volatile Organic Compounds

1717194-BLK1
1717194-BS1
1717194-BSD1
SC40242-01 (SP11_101117-1)

1717347

Total Metals by EPA 6000/7000 Series Methods

1717347-BLK1
1717347-SRM1
1717347-SRM2
SC40242-01 (SP11_101117-1)

1717352

General Chemistry Parameters

SC40242-01 (SP11_101117-1)

1717419

Extractable Petroleum Hydrocarbons

1717419-BLK1
1717419-BS1
1717419-BS2
1717419-BSD1
SC40242-01 (SP11_101117-1)

1717429

General Chemistry Parameters

1717429-BLK1
1717429-BS1
1717429-DUP1
1717429-MS1
1717429-MSD1
1717429-SRM1
SC40242-01 (SP11_101117-1)

1717436

Volatile Organic Compounds

1717436-BLK1
1717436-BS1
1717436-BSD1
SC40242-02 (TB_101117-1)

1717540

Volatile Organic Compounds

1717540-BLK1
1717540-BS1
1717540-BSD1
SC40242-01 (SP11_101117-1)

S707773

Extractable Petroleum Hydrocarbons

S707773-CAL1
S707773-CAL2
S707773-CAL3
S707773-CAL4
S707773-CAL5
S707773-CAL6
S707773-CAL7
S707773-CAL8
S707773-CAL9
S707773-CALA
S707773-CALB
S707773-CALC
S707773-ICV1
S707773-LCV1

S708827

Volatile Organic Compounds

S708827-CAL1
S708827-CAL2
S708827-CAL3
S708827-CAL4
S708827-CAL5
S708827-CAL6
S708827-CAL7
S708827-CAL8
S708827-CAL9
S708827-ICV1
S708827-LCV1
S708827-LCV2
S708827-TUN1

S708847

Volatile Organic Compounds

S708847-CAL1
S708847-CAL2
S708847-CAL3
S708847-CAL4
S708847-CAL5
S708847-CAL6
S708847-CAL7
S708847-ICV1
S708847-LCV1

S708990

Volatile Organic Compounds

S708990-CCV1
S708990-CCV2

S709049

Volatile Organic Compounds

S709049-CCV1
S709049-TUN1

S709100

Volatile Organic Compounds

S709100-CCV1
S709100-TUN1

S709112

Extractable Petroleum Hydrocarbons

S709112-CCV1
S709112-CCV2
S709112-CCV3

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☐ Final Report
☑ Revised Report

Report Date:
06-Nov-17 11:47

Laboratory Report
SC40987

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Art Taddeo

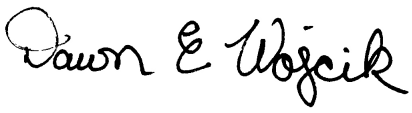
Project: LMC-Wilmington- 40 Fordham Rd. - MA
Project #: 60478638.5.01

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393

Authorized by:

Dawn Wojcik
Laboratory Director



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 26 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our 'Quality' web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC40987

Project: LMC-Wilmington- 40 Fordham Rd. - MA

Project Number: 60478638.5.01

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC40987-01	TB-110117	Methanol/Deionized Water	01-Nov-17 10:00	01-Nov-17 15:56
SC40987-02	SP12_110117-1	Soil	01-Nov-17 10:15	01-Nov-17 15:56

The following outlines the condition of all VPH samples contained within this report upon laboratory receipt.

Matrices	Soil		
Containers	✓ Satisfactory		
Sample Preservative	**Aqueous** (acid preserved)	✓ N/A pH≤2 pH>2	
	Soil or Sediment	N/A Samples not received in Methanol	ml Methanol/g soil ✓ 1:1 +/-25% Other
		✓ Samples received in Methanol: ✓ covering soil/sediment not covering soil/sediment	
		Samples received in air-tight container	
Temperature	Received on ice ✓ Received at 4 ± 2 ºC		

Were all QA/QC procedures followed as required by the VPH method? *Yes*
Were any significant modifications made to the VPH method as specified in section 11.3? *No*
Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

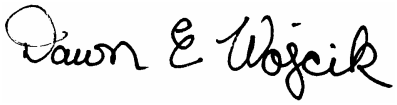
The following outlines the condition of all EPH samples contained within this report upon laboratory receipt.

Matrices	Soil
Containers	✓ Satisfactory
Aqueous Preservative	✓ N/A pH≤2 pH>2 pH adjusted to <2 in lab
Temperature	Received on ice ✓ Received at 4 ± 2 ºC

Were all QA/QC procedures followed as required by the EPH method? *Yes*
Were any significant modifications made to the EPH method as specified in Section 11.3? *No*
Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

I attest that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Authorized by:



Dawn E. Wojcik
Laboratory Director

MassDEP Analytical Protocol Certification Form

Laboratory Name: Eurofins Spectrum Analytical, Inc.	**Project #:** 60478638.5.01
Project Location: LMC-Wilmington- 40 Fordham Rd. - MA	**RTN:**
This form provides certifications for the following data set:	SC40987-01 through SC40987-02
Matrices: Methanol/Deionized Water Soil	

CAM Protocol

✓ 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	✓ 9012 Total Cyanide/PAC CAM VI 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	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? 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

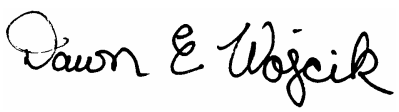
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

***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
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ✓ No

All negative responses are addressed in a case narrative on the cover page of this report.

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.



Dawn E. Wojcik
Laboratory Director
Date: 11/6/2017

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 3.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Soils are run on a manual load instrument. 100ug of sample (MEOH) is spiked into 5ml DI water along with the surrogate and added directly onto the instrument. Additional dilution factors may be required to keep analyte concentration within instrument calibration range.

Method SW846 5035A is designed to use on samples containing low levels of VOCs, ranging from 0.5 to 200 ug/Kg. Target analytes that are less responsive to purge and trap may be present at concentrations over 200ug/Kg but may not be reportable in the methanol preserved vial (SW846 5030). This is the result of the inherent dilution factor required for the methanol preservation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 6010C

Duplicates:

1718549-DUP1 *Source: SC40987-02*

Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.

Copper

SW846 8260C

Calibration:

1710003

Analyte quantified by quadratic equation type calibration.

1,4-Dioxane
2-Hexanone (MBK)
Naphthalene

SW846 8260C

Calibration:

1710003

This affected the following samples:

1718543-BLK1
1718543-BS1
1718543-BSD1
S708708-ICV1
S709711-CCV1
SP12_110117-1
TB-110117

Laboratory Control Samples:

1718543 BS/BSD

1,4-Dioxane percent recoveries (65/68) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

SP12_110117-1
TB-110117

Acetone percent recoveries (172/126) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

SP12_110117-1
TB-110117

Carbon disulfide percent recoveries (97/52) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

SP12_110117-1
TB-110117

Naphthalene percent recoveries (91/69) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

SP12_110117-1
TB-110117

n-Butylbenzene percent recoveries (134/118) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

SP12_110117-1
TB-110117

Trichlorofluoromethane (Freon 11) percent recoveries (139/119) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

SP12_110117-1
TB-110117

1718543 BSD

Acetone RPD 31% (30%) is outside individual acceptance criteria.

Bromomethane RPD 33% (30%) is outside individual acceptance criteria.

Carbon disulfide RPD 60% (30%) is outside individual acceptance criteria.

Samples:

S709711-CCV1

SW846 8260C

Samples:

S709711-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,2,3-Trichlorobenzene (21.3%)
1,2-Dibromo-3-chloropropane (-20.2%)
4-Isopropyltoluene (25.2%)
Bromoform (-25.4%)
Bromomethane (22.7%)
Chloroethane (23.1%)
n-Butylbenzene (34.4%)
Tert-amyl methyl ether (29.8%)
Trichlorofluoromethane (Freon 11) (39.1%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

1,4-Dioxane (-35.2%)
Acetone (72.2%)

This affected the following samples:

1718543-BLK1
1718543-BS1
1718543-BSD1
SP12_110117-1
TB-110117

Sample Acceptance Check Form

Client:	AECOM Environment - Chelmsford, MA
Project:	LMC-Wilmington- 40 Fordham Rd. - MA / 60478638.5.01
Work Order:	SC40987
Sample(s) received on:	11/1/2017

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC40987-02 **Client ID:** SP12_110117-1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
C11-C22 Aromatic Hydrocarbons	20.8		10.5	mg/kg	MADEP EPH 5/2004 R
C19-C36 Aliphatic Hydrocarbons	98.2		10.5	mg/kg	MADEP EPH 5/2004 R
Unadjusted C11-C22 Aromatic Hydrocarbons	22.0		10.5	mg/kg	MADEP EPH 5/2004 R
Arsenic	12.8		1.58	mg/kg	SW846 6010C
Chromium	13.2		1.05	mg/kg	SW846 6010C
Lead	8.59		1.58	mg/kg	SW846 6010C
Zinc	22.9		1.05	mg/kg	SW846 6010C

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TB-110117 SC40987-01	60478638.5.01	Methanol/Deionized Water	01-Nov-17 10:00	01-Nov-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260 Prepared by method SW846 5035A Soil (low level)													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 5.00		µg/kg wet	5.00	2.54	1	SW846 8260C	02-Nov-17	02-Nov-17	MP	1718543	
67-64-1	Acetone	< 50.0		µg/kg wet	50.0	20.0	1	"	"	"	"	"	
71-43-2	Benzene	< 5.00		µg/kg wet	5.00	1.32	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 5.00		µg/kg wet	5.00	1.34	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 5.00		µg/kg wet	5.00	2.52	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 5.00		µg/kg wet	5.00	3.34	1	"	"	"	"	"	
75-25-2	Bromoform	< 5.00		µg/kg wet	5.00	4.77	1	"	"	"	"	"	
74-83-9	Bromomethane	< 10.0		µg/kg wet	10.0	4.52	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 10.0		µg/kg wet	10.0	8.94	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 5.00		µg/kg wet	5.00	1.43	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 5.00		µg/kg wet	5.00	0.91	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 5.00		µg/kg wet	5.00	1.12	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 10.0		µg/kg wet	10.0	3.20	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 5.00		µg/kg wet	5.00	4.09	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 5.00		µg/kg wet	5.00	1.56	1	"	"	"	"	"	
75-00-3	Chloroethane	< 10.0		µg/kg wet	10.0	2.78	1	"	"	"	"	"	
67-66-3	Chloroform	< 5.00		µg/kg wet	5.00	2.68	1	"	"	"	"	"	
74-87-3	Chloromethane	< 10.0		µg/kg wet	10.0	2.06	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 5.00		µg/kg wet	5.00	1.24	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 5.00		µg/kg wet	5.00	1.18	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 10.0		µg/kg wet	10.0	7.22	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 5.00		µg/kg wet	5.00	3.39	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 5.00		µg/kg wet	5.00	3.36	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 5.00		µg/kg wet	5.00	2.60	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 5.00		µg/kg wet	5.00	1.30	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 5.00		µg/kg wet	5.00	1.08	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 5.00		µg/kg wet	5.00	1.48	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 10.0		µg/kg wet	10.0	1.90	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 5.00		µg/kg wet	5.00	1.31	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 5.00		µg/kg wet	5.00	1.79	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 5.00		µg/kg wet	5.00	2.62	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 5.00		µg/kg wet	5.00	1.86	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 5.00		µg/kg wet	5.00	2.65	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 5.00		µg/kg wet	5.00	2.62	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 5.00		µg/kg wet	5.00	2.59	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 5.00		µg/kg wet	5.00	2.36	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 5.00		µg/kg wet	5.00	1.61	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 5.00		µg/kg wet	5.00	3.02	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 5.00		µg/kg wet	5.00	2.62	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 5.00		µg/kg wet	5.00	0.72	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 5.00		µg/kg wet	5.00	2.51	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 10.0		µg/kg wet	10.0	6.14	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 5.00		µg/kg wet	5.00	0.98	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TB-110117 SC40987-01	60478638.5.01	Methanol/Deionized Water	01-Nov-17 10:00	01-Nov-17

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
99-87-6	4-Isopropyltoluene	< 5.00		µg/kg wet	5.00	1.08	1	SW846 8260C	02-Nov-17	02-Nov-17	MP	1718543	
1634-04-4	Methyl tert-butyl ether	< 5.00		µg/kg wet	5.00	1.84	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 10.0		µg/kg wet	10.0	2.57	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 10.0		µg/kg wet	10.0	1.98	1	"	"	"	"	"	
91-20-3	Naphthalene	< 5.00		µg/kg wet	5.00	2.98	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 5.00		µg/kg wet	5.00	0.81	1	"	"	"	"	"	
100-42-5	Styrene	< 5.00		µg/kg wet	5.00	1.00	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 5.00		µg/kg wet	5.00	4.25	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 5.00		µg/kg wet	5.00	4.23	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 5.00		µg/kg wet	5.00	1.71	1	"	"	"	"	"	
108-88-3	Toluene	< 5.00		µg/kg wet	5.00	1.62	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 5.00		µg/kg wet	5.00	1.76	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 5.00		µg/kg wet	5.00	3.68	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 5.00		µg/kg wet	5.00	1.66	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 5.00		µg/kg wet	5.00	3.62	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 5.00		µg/kg wet	5.00	1.36	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 5.00		µg/kg wet	5.00	2.70	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 5.00		µg/kg wet	5.00	3.75	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 5.00		µg/kg wet	5.00	1.22	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 5.00		µg/kg wet	5.00	0.86	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 5.00		µg/kg wet	5.00	1.69	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 10.0		µg/kg wet	10.0	0.90	1	"	"	"	"	"	
95-47-6	o-Xylene	< 5.00		µg/kg wet	5.00	1.40	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 10.0		µg/kg wet	10.0	7.88	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 5.00		µg/kg wet	5.00	4.53	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 5.00		µg/kg wet	5.00	1.67	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 5.00		µg/kg wet	5.00	2.70	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 5.00		µg/kg wet	5.00	0.93	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 100		µg/kg wet	100	86.8	1	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*89*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*101*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*127*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*108*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP12_110117-1 SC40987-02	60478638.5.01	Soil	01-Nov-17 10:15	01-Nov-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Prepared by method Volatiles													
	VOC Extraction	**Field extracted**		N/A			1	VOC Soil Extraction			MBR	1718522	
Volatile Organic Compounds by SW846 8260													
Prepared by method SW846 5035A Soil (low level)							Initial weight: 6.13 g						
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 4.61		µg/kg dry	4.61	2.34	1	SW846 8260C	02-Nov-17	02-Nov-17	MP	1718543	
67-64-1	Acetone	< 46.1		µg/kg dry	46.1	18.4	1	"	"	"	"	"	
71-43-2	Benzene	< 4.61		µg/kg dry	4.61	1.22	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 4.61		µg/kg dry	4.61	1.23	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 4.61		µg/kg dry	4.61	2.33	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 4.61		µg/kg dry	4.61	3.07	1	"	"	"	"	"	
75-25-2	Bromoform	< 4.61		µg/kg dry	4.61	4.39	1	"	"	"	"	"	
74-83-9	Bromomethane	< 9.21		µg/kg dry	9.21	4.16	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 9.21		µg/kg dry	9.21	8.24	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 4.61		µg/kg dry	4.61	1.32	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 4.61		µg/kg dry	4.61	0.84	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 4.61		µg/kg dry	4.61	1.03	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 9.21		µg/kg dry	9.21	2.95	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 4.61		µg/kg dry	4.61	3.77	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 4.61		µg/kg dry	4.61	1.44	1	"	"	"	"	"	
75-00-3	Chloroethane	< 9.21		µg/kg dry	9.21	2.56	1	"	"	"	"	"	
67-66-3	Chloroform	< 4.61		µg/kg dry	4.61	2.47	1	"	"	"	"	"	
74-87-3	Chloromethane	< 9.21		µg/kg dry	9.21	1.90	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 4.61		µg/kg dry	4.61	1.15	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 4.61		µg/kg dry	4.61	1.08	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 9.21		µg/kg dry	9.21	6.66	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 4.61		µg/kg dry	4.61	3.12	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 4.61		µg/kg dry	4.61	3.09	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 4.61		µg/kg dry	4.61	2.40	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 4.61		µg/kg dry	4.61	1.20	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 4.61		µg/kg dry	4.61	1.00	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 4.61		µg/kg dry	4.61	1.36	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 9.21		µg/kg dry	9.21	1.75	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 4.61		µg/kg dry	4.61	1.21	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 4.61		µg/kg dry	4.61	1.65	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 4.61		µg/kg dry	4.61	2.41	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 4.61		µg/kg dry	4.61	1.71	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 4.61		µg/kg dry	4.61	2.44	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 4.61		µg/kg dry	4.61	2.41	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 4.61		µg/kg dry	4.61	2.39	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 4.61		µg/kg dry	4.61	2.17	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 4.61		µg/kg dry	4.61	1.48	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 4.61		µg/kg dry	4.61	2.78	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 4.61		µg/kg dry	4.61	2.42	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 4.61		µg/kg dry	4.61	0.66	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP12_110117-1	60478638.5.01	Soil	01-Nov-17 10:15	01-Nov-17
SC40987-02				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260							Initial weight: 6.13 g						
87-68-3	Hexachlorobutadiene	< 4.61		µg/kg dry	4.61	2.31	1	SW846 8260C	02-Nov-17	02-Nov-17	MP	1718543	
591-78-6	2-Hexanone (MBK)	< 9.21		µg/kg dry	9.21	5.65	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 4.61		µg/kg dry	4.61	0.91	1	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 4.61		µg/kg dry	4.61	0.99	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 4.61		µg/kg dry	4.61	1.70	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 9.21		µg/kg dry	9.21	2.37	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 9.21		µg/kg dry	9.21	1.83	1	"	"	"	"	"	
91-20-3	Naphthalene	< 4.61		µg/kg dry	4.61	2.74	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 4.61		µg/kg dry	4.61	0.75	1	"	"	"	"	"	
100-42-5	Styrene	< 4.61		µg/kg dry	4.61	0.93	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 4.61		µg/kg dry	4.61	3.92	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 4.61		µg/kg dry	4.61	3.90	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 4.61		µg/kg dry	4.61	1.58	1	"	"	"	"	"	
108-88-3	Toluene	< 4.61		µg/kg dry	4.61	1.49	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 4.61		µg/kg dry	4.61	1.62	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 4.61		µg/kg dry	4.61	3.39	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 4.61		µg/kg dry	4.61	1.53	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 4.61		µg/kg dry	4.61	3.34	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 4.61		µg/kg dry	4.61	1.26	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 4.61		µg/kg dry	4.61	2.48	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 4.61		µg/kg dry	4.61	3.45	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 4.61		µg/kg dry	4.61	1.12	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 4.61		µg/kg dry	4.61	0.79	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 4.61		µg/kg dry	4.61	1.56	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 9.21		µg/kg dry	9.21	0.83	1	"	"	"	"	"	
95-47-6	o-Xylene	< 4.61		µg/kg dry	4.61	1.29	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 9.21		µg/kg dry	9.21	7.26	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 4.61		µg/kg dry	4.61	4.17	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 4.61		µg/kg dry	4.61	1.54	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 4.61		µg/kg dry	4.61	2.48	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 4.61		µg/kg dry	4.61	0.86	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 92.1		µg/kg dry	92.1	80.0	1	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*90*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*102*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*129*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*109*			*70-130 %*			"	"	"	"	"	
MADEP VPH Carbon Ranges Prepared by method VPH - EPA 5035A Soil							Initial weight: 17.52 g						
	C5-C8 Aliphatic Hydrocarbons	< 0.723	D	mg/kg dry	0.723	0.140	50	MADEP VPH 5/2004 Rev. 1.1	02-Nov-17	02-Nov-17	SD	1718546	
	C9-C12 Aliphatic Hydrocarbons	< 0.386	D	mg/kg dry	0.386	0.100	50	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP12_110117-1 SC40987-02	60478638.5.01	Soil	01-Nov-17 10:15	01-Nov-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
MADEP VPH Carbon Ranges							Initial weight: 17.52 g						
	C9-C10 Aromatic Hydrocarbons	< 0.386	D	mg/kg dry	0.386	0.0293	50	MADEP VPH 5/2004 Rev. 1.1	02-Nov-17	02-Nov-17	SD	1718546	
	Unadjusted C5-C8 Aliphatic Hydrocarbons	< 0.723	D	mg/kg dry	0.723	0.112	50	"	"	"	"	"	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	< 0.386	D	mg/kg dry	0.386	0.128	50	"	"	"	"	"	
Surrogate recoveries:													
615-59-8	*2,5-Dibromotoluene (FID)*	*91*			*70-130 %*			"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*89*			*70-130 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
MADEP EPH Carbon Ranges Prepared by method SW846 3546													
	C9-C18 Aliphatic Hydrocarbons	< 10.5		mg/kg dry	10.5	2.15	1	MADEP EPH 5/2004 R	02-Nov-17	04-Nov-17	EDT	1718533	
	C19-C36 Aliphatic Hydrocarbons	**98.2**		mg/kg dry	10.5	2.85	1	"	"	"	"	"	
	C11-C22 Aromatic Hydrocarbons	**20.8**		mg/kg dry	10.5	4.43	1	"	"	"	"	"	
	Unadjusted C11-C22 Aromatic Hydrocarbons	**22.0**		mg/kg dry	10.5	4.43	1	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*52*			*40-140 %*			"	"	"	"	"	
84-15-1	*Ortho-Terphenyl*	*47*			*40-140 %*			"	"	"	"	"	
321-60-8	*2-Fluorobiphenyl*	*50*			*40-140 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
Prepared by method SW846 3051A													
7440-38-2	Arsenic	**12.8**		mg/kg dry	1.58	0.200	1	SW846 6010C	02-Nov-17	02-Nov-17	TBC	1718549	
7440-47-3	Chromium	**13.2**		mg/kg dry	1.05	0.140	1	"	"	"	"	"	
7440-50-8	Copper	< 13.7		mg/kg dry	13.7	0.253	1	"	"	"	"	"	
7439-92-1	Lead	**8.59**		mg/kg dry	1.58	0.223	1	"	"	"	"	"	
7440-66-6	Zinc	**22.9**		mg/kg dry	1.05	0.816	1	"	"	03-Nov-17	"	"	
General Chemistry Parameters													
	% Solids	**94.5**		%			1	SM2540 G (11) Mod.	02-Nov-17	02-Nov-17	MBR	1718557	
Prepared by method SW846 9010B													
57-12-5	Cyanide (total)	< 0.281		mg/kg dry	0.281	0.237	1	SW846 9012B	03-Nov-17	03-Nov-17	RLT	1718456	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP VPH 5/2004 Rev. 1.1										
Batch 1718546 - VPH - EPA 5035A Soil										
Blank (1718546-BLK1)					Prepared & Analyzed: 02-Nov-17					
C5-C8 Aliphatic Hydrocarbons	< 0.750	D	mg/kg wet	0.750						
C9-C12 Aliphatic Hydrocarbons	< 0.400	D	mg/kg wet	0.400						
C9-C10 Aromatic Hydrocarbons	< 0.400	D	mg/kg wet	0.400						
Unadjusted C5-C8 Aliphatic Hydrocarbons	< 0.750	D	mg/kg wet	0.750						
Unadjusted C9-C12 Aliphatic Hydrocarbons	< 0.400	D	mg/kg wet	0.400						
Surrogate: 2,5-Dibromotoluene (FID)	*44.2*		µg/kg		*50.0*		*88*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*44.4*		µg/kg		*50.0*		*89*	*70-130*		
LCS (1718546-BS1)					Prepared & Analyzed: 02-Nov-17					
C5-C8 Aliphatic Hydrocarbons	**51.6**	D	µg/kg		60.0		86	70-130		
C9-C12 Aliphatic Hydrocarbons	**52.0**	D	µg/kg		60.0		87	70-130		
C9-C10 Aromatic Hydrocarbons	**19.0**	D	µg/kg		20.0		95	70-130		
Unadjusted C5-C8 Aliphatic Hydrocarbons	**197**	D	µg/kg		200		98	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	**71.0**	D	µg/kg		80.0		89	70-130		
Surrogate: 2,5-Dibromotoluene (FID)	*45.5*		µg/kg		*50.0*		*91*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*45.7*		µg/kg		*50.0*		*91*	*70-130*		
LCS Dup (1718546-BSD1)					Prepared & Analyzed: 02-Nov-17					
C5-C8 Aliphatic Hydrocarbons	**52.0**	D	µg/kg		60.0		87	70-130	0.7	25
C9-C12 Aliphatic Hydrocarbons	**52.3**	D	µg/kg		60.0		87	70-130	0.4	25
C9-C10 Aromatic Hydrocarbons	**20.2**	D	µg/kg		20.0		101	70-130	6	25
Unadjusted C5-C8 Aliphatic Hydrocarbons	**199**	D	µg/kg		200		100	70-130	1	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	**72.4**	D	µg/kg		80.0		91	70-130	2	25
Surrogate: 2,5-Dibromotoluene (FID)	*45.6*		µg/kg		*50.0*		*91*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*46.3*		µg/kg		*50.0*		*93*	*70-130*		
SW846 8260C										
Batch 1718543 - SW846 5035A Soil (low level)										
Blank (1718543-BLK1)					Prepared & Analyzed: 02-Nov-17					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 5.00		µg/kg wet	5.00						
Acetone	< 50.0		µg/kg wet	50.0						
Benzene	< 5.00		µg/kg wet	5.00						
Bromobenzene	< 5.00		µg/kg wet	5.00						
Bromochloromethane	< 5.00		µg/kg wet	5.00						
Bromodichloromethane	< 5.00		µg/kg wet	5.00						
Bromoform	< 5.00		µg/kg wet	5.00						
Bromomethane	< 10.0		µg/kg wet	10.0						
2-Butanone (MEK)	< 10.0		µg/kg wet	10.0						
n-Butylbenzene	< 5.00		µg/kg wet	5.00						
sec-Butylbenzene	< 5.00		µg/kg wet	5.00						
tert-Butylbenzene	< 5.00		µg/kg wet	5.00						
Carbon disulfide	< 10.0		µg/kg wet	10.0						
Carbon tetrachloride	< 5.00		µg/kg wet	5.00						
Chlorobenzene	< 5.00		µg/kg wet	5.00						
Chloroethane	< 10.0		µg/kg wet	10.0						
Chloroform	< 5.00		µg/kg wet	5.00						
Chloromethane	< 10.0		µg/kg wet	10.0						
2-Chlorotoluene	< 5.00		µg/kg wet	5.00						
4-Chlorotoluene	< 5.00		µg/kg wet	5.00						
1,2-Dibromo-3-chloropropane	< 10.0		µg/kg wet	10.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1718543 - SW846 5035A Soil (low level)										
Blank (1718543-BLK1)					Prepared & Analyzed: 02-Nov-17					
Dibromochloromethane	< 5.00		µg/kg wet	5.00						
1,2-Dibromoethane (EDB)	< 5.00		µg/kg wet	5.00						
Dibromomethane	< 5.00		µg/kg wet	5.00						
1,2-Dichlorobenzene	< 5.00		µg/kg wet	5.00						
1,3-Dichlorobenzene	< 5.00		µg/kg wet	5.00						
1,4-Dichlorobenzene	< 5.00		µg/kg wet	5.00						
Dichlorodifluoromethane (Freon12)	< 10.0		µg/kg wet	10.0						
1,1-Dichloroethane	< 5.00		µg/kg wet	5.00						
1,2-Dichloroethane	< 5.00		µg/kg wet	5.00						
1,1-Dichloroethene	< 5.00		µg/kg wet	5.00						
cis-1,2-Dichloroethene	< 5.00		µg/kg wet	5.00						
trans-1,2-Dichloroethene	< 5.00		µg/kg wet	5.00						
1,2-Dichloropropane	< 5.00		µg/kg wet	5.00						
1,3-Dichloropropane	< 5.00		µg/kg wet	5.00						
2,2-Dichloropropane	< 5.00		µg/kg wet	5.00						
1,1-Dichloropropene	< 5.00		µg/kg wet	5.00						
cis-1,3-Dichloropropene	< 5.00		µg/kg wet	5.00						
trans-1,3-Dichloropropene	< 5.00		µg/kg wet	5.00						
Ethylbenzene	< 5.00		µg/kg wet	5.00						
Hexachlorobutadiene	< 5.00		µg/kg wet	5.00						
2-Hexanone (MBK)	< 10.0		µg/kg wet	10.0						
Isopropylbenzene	< 5.00		µg/kg wet	5.00						
4-Isopropyltoluene	< 5.00		µg/kg wet	5.00						
Methyl tert-butyl ether	< 5.00		µg/kg wet	5.00						
4-Methyl-2-pentanone (MIBK)	< 10.0		µg/kg wet	10.0						
Methylene chloride	< 10.0		µg/kg wet	10.0						
Naphthalene	< 5.00		µg/kg wet	5.00						
n-Propylbenzene	< 5.00		µg/kg wet	5.00						
Styrene	< 5.00		µg/kg wet	5.00						
1,1,1,2-Tetrachloroethane	< 5.00		µg/kg wet	5.00						
1,1,2,2-Tetrachloroethane	< 5.00		µg/kg wet	5.00						
Tetrachloroethene	< 5.00		µg/kg wet	5.00						
Toluene	< 5.00		µg/kg wet	5.00						
1,2,3-Trichlorobenzene	< 5.00		µg/kg wet	5.00						
1,2,4-Trichlorobenzene	< 5.00		µg/kg wet	5.00						
1,1,1-Trichloroethane	< 5.00		µg/kg wet	5.00						
1,1,2-Trichloroethane	< 5.00		µg/kg wet	5.00						
Trichloroethene	< 5.00		µg/kg wet	5.00						
Trichlorofluoromethane (Freon 11)	< 5.00		µg/kg wet	5.00						
1,2,3-Trichloropropane	< 5.00		µg/kg wet	5.00						
1,2,4-Trimethylbenzene	< 5.00		µg/kg wet	5.00						
1,3,5-Trimethylbenzene	< 5.00		µg/kg wet	5.00						
Vinyl chloride	< 5.00		µg/kg wet	5.00						
m,p-Xylene	< 10.0		µg/kg wet	10.0						
o-Xylene	< 5.00		µg/kg wet	5.00						
Tetrahydrofuran	< 10.0		µg/kg wet	10.0						
Ethyl ether	< 5.00		µg/kg wet	5.00						
Tert-amyl methyl ether	< 5.00		µg/kg wet	5.00						
Ethyl tert-butyl ether	< 5.00		µg/kg wet	5.00						
Di-isopropyl ether	< 5.00		µg/kg wet	5.00						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1718543 - SW846 5035A Soil (low level)										
Blank (1718543-BLK1)							Prepared & Analyzed: 02-Nov-17			
1,4-Dioxane	< 100		µg/kg wet	100						
Surrogate: 4-Bromofluorobenzene	*45.2*		µg/kg		*50.0*		*90*	*70-130*		
Surrogate: Toluene-d8	*50.4*		µg/kg		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*64.3*		µg/kg		*50.0*		*129*	*70-130*		
Surrogate: Dibromofluoromethane	*52.5*		µg/kg		*50.0*		*105*	*70-130*		
LCS (1718543-BS1)							Prepared & Analyzed: 02-Nov-17			
1,1,2-Trichlorotrifluoroethane (Freon 113)	**23.3**		µg/kg		20.0		116	70-130		
Acetone	**34.4**	QM9	µg/kg		20.0		172	70-130		
Benzene	**21.2**		µg/kg		20.0		106	70-130		
Bromobenzene	**19.4**		µg/kg		20.0		97	70-130		
Bromochloromethane	**20.1**		µg/kg		20.0		101	70-130		
Bromodichloromethane	**20.8**		µg/kg		20.0		104	70-130		
Bromoform	**14.9**		µg/kg		20.0		75	70-130		
Bromomethane	**24.6**		µg/kg		20.0		123	70-130		
2-Butanone (MEK)	**20.4**		µg/kg		20.0		102	70-130		
n-Butylbenzene	**26.9**	QM9	µg/kg		20.0		134	70-130		
sec-Butylbenzene	**23.0**		µg/kg		20.0		115	70-130		
tert-Butylbenzene	**21.8**		µg/kg		20.0		109	70-130		
Carbon disulfide	**19.4**		µg/kg		20.0		97	70-130		
Carbon tetrachloride	**21.9**		µg/kg		20.0		110	70-130		
Chlorobenzene	**20.1**		µg/kg		20.0		101	70-130		
Chloroethane	**24.6**		µg/kg		20.0		123	70-130		
Chloroform	**21.7**		µg/kg		20.0		109	70-130		
Chloromethane	**19.7**		µg/kg		20.0		99	70-130		
2-Chlorotoluene	**22.3**		µg/kg		20.0		111	70-130		
4-Chlorotoluene	**23.0**		µg/kg		20.0		115	70-130		
1,2-Dibromo-3-chloropropane	**16.0**		µg/kg		20.0		80	70-130		
Dibromochloromethane	**18.5**		µg/kg		20.0		92	70-130		
1,2-Dibromoethane (EDB)	**19.2**		µg/kg		20.0		96	70-130		
Dibromomethane	**21.0**		µg/kg		20.0		105	70-130		
1,2-Dichlorobenzene	**21.7**		µg/kg		20.0		109	70-130		
1,3-Dichlorobenzene	**21.3**		µg/kg		20.0		106	70-130		
1,4-Dichlorobenzene	**22.4**		µg/kg		20.0		112	70-130		
Dichlorodifluoromethane (Freon12)	**18.7**		µg/kg		20.0		94	70-130		
1,1-Dichloroethane	**21.5**		µg/kg		20.0		108	70-130		
1,2-Dichloroethane	**22.9**		µg/kg		20.0		115	70-130		
1,1-Dichloroethene	**22.2**		µg/kg		20.0		111	70-130		
cis-1,2-Dichloroethene	**20.9**		µg/kg		20.0		104	70-130		
trans-1,2-Dichloroethene	**20.3**		µg/kg		20.0		101	70-130		
1,2-Dichloropropane	**20.4**		µg/kg		20.0		102	70-130		
1,3-Dichloropropane	**20.7**		µg/kg		20.0		103	70-130		
2,2-Dichloropropane	**19.0**		µg/kg		20.0		95	70-130		
1,1-Dichloropropene	**21.8**		µg/kg		20.0		109	70-130		
cis-1,3-Dichloropropene	**18.2**		µg/kg		20.0		91	70-130		
trans-1,3-Dichloropropene	**17.2**		µg/kg		20.0		86	70-130		
Ethylbenzene	**21.5**		µg/kg		20.0		108	70-130		
Hexachlorobutadiene	**23.6**		µg/kg		20.0		118	70-130		
2-Hexanone (MBK)	**18.8**		µg/kg		20.0		94	70-130		
Isopropylbenzene	**22.3**		µg/kg		20.0		112	70-130		
4-Isopropyltoluene	**25.0**		µg/kg		20.0		125	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1718543 - SW846 5035A Soil (low level)										
LCS (1718543-BS1)					Prepared & Analyzed: 02-Nov-17					
Methyl tert-butyl ether	**16.1**		µg/kg		20.0		80	70-130		
4-Methyl-2-pentanone (MIBK)	**16.1**		µg/kg		20.0		80	70-130		
Methylene chloride	**20.0**		µg/kg		20.0		100	70-130		
Naphthalene	**18.3**		µg/kg		20.0		91	70-130		
n-Propylbenzene	**23.2**		µg/kg		20.0		116	70-130		
Styrene	**18.9**		µg/kg		20.0		95	70-130		
1,1,1,2-Tetrachloroethane	**19.3**		µg/kg		20.0		97	70-130		
1,1,2,2-Tetrachloroethane	**18.7**		µg/kg		20.0		93	70-130		
Tetrachloroethene	**22.2**		µg/kg		20.0		111	70-130		
Toluene	**21.3**		µg/kg		20.0		107	70-130		
1,2,3-Trichlorobenzene	**24.2**		µg/kg		20.0		121	70-130		
1,2,4-Trichlorobenzene	**23.3**		µg/kg		20.0		117	70-130		
1,1,1-Trichloroethane	**21.0**		µg/kg		20.0		105	70-130		
1,1,2-Trichloroethane	**19.5**		µg/kg		20.0		97	70-130		
Trichloroethene	**22.0**		µg/kg		20.0		110	70-130		
Trichlorofluoromethane (Freon 11)	**27.8**	QM9	µg/kg		20.0		139	70-130		
1,2,3-Trichloropropane	**19.0**		µg/kg		20.0		95	70-130		
1,2,4-Trimethylbenzene	**22.7**		µg/kg		20.0		114	70-130		
1,3,5-Trimethylbenzene	**22.3**		µg/kg		20.0		112	70-130		
Vinyl chloride	**24.0**		µg/kg		20.0		120	70-130		
m,p-Xylene	**20.0**		µg/kg		20.0		100	70-130		
o-Xylene	**20.3**		µg/kg		20.0		102	70-130		
Tetrahydrofuran	**17.7**		µg/kg		20.0		88	70-130		
Ethyl ether	**21.4**		µg/kg		20.0		107	70-130		
Tert-amyl methyl ether	**26.0**		µg/kg		20.0		130	70-130		
Ethyl tert-butyl ether	**17.5**		µg/kg		20.0		88	70-130		
Di-isopropyl ether	**20.7**		µg/kg		20.0		103	70-130		
1,4-Dioxane	**130**		µg/kg		200		65	70-130		
Surrogate: 4-Bromofluorobenzene	*48.6*		µg/kg		*50.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*51.0*		µg/kg		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*55.5*		µg/kg		*50.0*		*111*	*70-130*		
Surrogate: Dibromofluoromethane	*51.7*		µg/kg		*50.0*		*103*	*70-130*		
LCS Dup (1718543-BSD1)					Prepared & Analyzed: 02-Nov-17					
1,1,2-Trichlorotrifluoroethane (Freon 113)	**21.1**		µg/kg		20.0		105	70-130	10	30
Acetone	**25.1**	QR5	µg/kg		20.0		126	70-130	31	30
Benzene	**19.5**		µg/kg		20.0		97	70-130	9	30
Bromobenzene	**18.3**		µg/kg		20.0		91	70-130	6	30
Bromochloromethane	**18.1**		µg/kg		20.0		90	70-130	11	30
Bromodichloromethane	**20.6**		µg/kg		20.0		103	70-130	0.9	30
Bromoform	**14.2**		µg/kg		20.0		71	70-130	5	30
Bromomethane	**17.5**	QR2	µg/kg		20.0		88	70-130	33	30
2-Butanone (MEK)	**22.6**		µg/kg		20.0		113	70-130	10	30
n-Butylbenzene	**23.5**		µg/kg		20.0		118	70-130	13	30
sec-Butylbenzene	**20.7**		µg/kg		20.0		104	70-130	10	30
tert-Butylbenzene	**19.5**		µg/kg		20.0		98	70-130	11	30
Carbon disulfide	**10.5**	QM9, QR5	µg/kg		20.0		52	70-130	60	30
Carbon tetrachloride	**20.4**		µg/kg		20.0		102	70-130	7	30
Chlorobenzene	**19.4**		µg/kg		20.0		97	70-130	3	30
Chloroethane	**19.4**		µg/kg		20.0		97	70-130	24	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1718543 - SW846 5035A Soil (low level)										
LCS Dup (1718543-BSD1)					Prepared & Analyzed: 02-Nov-17					
Chloroform	**21.1**		µg/kg		20.0		105	70-130	3	30
Chloromethane	**21.4**		µg/kg		20.0		107	70-130	8	30
2-Chlorotoluene	**20.4**		µg/kg		20.0		102	70-130	9	30
4-Chlorotoluene	**20.6**		µg/kg		20.0		103	70-130	11	30
1,2-Dibromo-3-chloropropane	**15.4**		µg/kg		20.0		77	70-130	4	30
Dibromochloromethane	**18.3**		µg/kg		20.0		91	70-130	1	30
1,2-Dibromoethane (EDB)	**18.6**		µg/kg		20.0		93	70-130	3	30
Dibromomethane	**20.0**		µg/kg		20.0		100	70-130	5	30
1,2-Dichlorobenzene	**19.5**		µg/kg		20.0		97	70-130	11	30
1,3-Dichlorobenzene	**19.3**		µg/kg		20.0		97	70-130	10	30
1,4-Dichlorobenzene	**19.7**		µg/kg		20.0		99	70-130	13	30
Dichlorodifluoromethane (Freon12)	**19.6**		µg/kg		20.0		98	70-130	5	30
1,1-Dichloroethane	**20.3**		µg/kg		20.0		102	70-130	6	30
1,2-Dichloroethane	**21.8**		µg/kg		20.0		109	70-130	5	30
1,1-Dichloroethene	**17.9**		µg/kg		20.0		89	70-130	21	30
cis-1,2-Dichloroethene	**19.4**		µg/kg		20.0		97	70-130	7	30
trans-1,2-Dichloroethene	**17.2**		µg/kg		20.0		86	70-130	16	30
1,2-Dichloropropane	**20.1**		µg/kg		20.0		100	70-130	2	30
1,3-Dichloropropane	**19.7**		µg/kg		20.0		99	70-130	5	30
2,2-Dichloropropane	**17.7**		µg/kg		20.0		89	70-130	7	30
1,1-Dichloropropene	**19.4**		µg/kg		20.0		97	70-130	12	30
cis-1,3-Dichloropropene	**17.3**		µg/kg		20.0		87	70-130	5	30
trans-1,3-Dichloropropene	**16.2**		µg/kg		20.0		81	70-130	5	30
Ethylbenzene	**19.8**		µg/kg		20.0		99	70-130	8	30
Hexachlorobutadiene	**22.9**		µg/kg		20.0		115	70-130	3	30
2-Hexanone (MBK)	**14.2**		µg/kg		20.0		71	70-130	28	30
Isopropylbenzene	**20.1**		µg/kg		20.0		101	70-130	10	30
4-Isopropyltoluene	**22.2**		µg/kg		20.0		111	70-130	12	30
Methyl tert-butyl ether	**15.3**		µg/kg		20.0		76	70-130	5	30
4-Methyl-2-pentanone (MIBK)	**15.6**		µg/kg		20.0		78	70-130	3	30
Methylene chloride	**18.6**		µg/kg		20.0		93	70-130	7	30
Naphthalene	**13.7**	QM9	µg/kg		20.0		69	70-130	28	30
n-Propylbenzene	**20.6**		µg/kg		20.0		103	70-130	12	30
Styrene	**16.6**		µg/kg		20.0		83	70-130	13	30
1,1,1,2-Tetrachloroethane	**18.7**		µg/kg		20.0		93	70-130	3	30
1,1,2,2-Tetrachloroethane	**18.5**		µg/kg		20.0		92	70-130	1	30
Tetrachloroethene	**20.1**		µg/kg		20.0		100	70-130	10	30
Toluene	**20.5**		µg/kg		20.0		103	70-130	4	30
1,2,3-Trichlorobenzene	**20.4**		µg/kg		20.0		102	70-130	17	30
1,2,4-Trichlorobenzene	**20.4**		µg/kg		20.0		102	70-130	13	30
1,1,1-Trichloroethane	**20.0**		µg/kg		20.0		100	70-130	5	30
1,1,2-Trichloroethane	**19.9**		µg/kg		20.0		99	70-130	2	30
Trichloroethene	**20.4**		µg/kg		20.0		102	70-130	7	30
Trichlorofluoromethane (Freon 11)	**23.9**		µg/kg		20.0		119	70-130	15	30
1,2,3-Trichloropropane	**18.8**		µg/kg		20.0		94	70-130	1	30
1,2,4-Trimethylbenzene	**19.7**		µg/kg		20.0		99	70-130	14	30
1,3,5-Trimethylbenzene	**19.8**		µg/kg		20.0		99	70-130	12	30
Vinyl chloride	**19.5**		µg/kg		20.0		97	70-130	21	30
m,p-Xylene	**18.3**		µg/kg		20.0		91	70-130	9	30
o-Xylene	**19.1**		µg/kg		20.0		95	70-130	6	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1718543 - SW846 5035A Soil (low level)										
LCS Dup (1718543-BSD1)					Prepared & Analyzed: 02-Nov-17					
Tetrahydrofuran	**16.3**		µg/kg		20.0		82	70-130	8	30
Ethyl ether	**19.0**		µg/kg		20.0		95	70-130	12	30
Tert-amyl methyl ether	**25.8**		µg/kg		20.0		129	70-130	0.8	30
Ethyl tert-butyl ether	**16.6**		µg/kg		20.0		83	70-130	5	30
Di-isopropyl ether	**20.0**		µg/kg		20.0		100	70-130	3	30
1,4-Dioxane	**135**		µg/kg		200		68	70-130	4	30
Surrogate: 4-Bromofluorobenzene	*49.2*		µg/kg		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*51.4*		µg/kg		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*55.0*		µg/kg		*50.0*		*110*	*70-130*		
Surrogate: Dibromofluoromethane	*52.0*		µg/kg		*50.0*		*104*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1718533 - SW846 3546										
Blank (1718533-BLK1)					Prepared: 02-Nov-17 Analyzed: 03-Nov-17					
C9-C18 Aliphatic Hydrocarbons	< 9.94		mg/kg wet	9.94						
C19-C36 Aliphatic Hydrocarbons	< 9.94		mg/kg wet	9.94						
C11-C22 Aromatic Hydrocarbons	< 9.94		mg/kg wet	9.94						
Unadjusted C11-C22 Aromatic Hydrocarbons	< 9.94		mg/kg wet	9.94						
Total Petroleum Hydrocarbons	< 29.8		mg/kg wet	29.8						
Unadjusted Total Petroleum Hydrocarbons	< 29.8		mg/kg wet	29.8						
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet							
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet							
Surrogate: 1-Chlorooctadecane	*1.72*		mg/kg wet		*3.31*		*52*	*40-140*		
Surrogate: Ortho-Terphenyl	*1.65*		mg/kg wet		*3.31*		*50*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*1.58*		mg/kg wet		*2.65*		*60*	*40-140*		
LCS (1718533-BS1)					Prepared: 02-Nov-17 Analyzed: 03-Nov-17					
C9-C18 Aliphatic Hydrocarbons	**19.8**		mg/kg wet	9.92	39.7		50	40-140		
C19-C36 Aliphatic Hydrocarbons	**26.2**		mg/kg wet	9.92	52.9		49	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	**33.4**		mg/kg wet	9.92	45.0		74	40-140		
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.65			0-200		
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.65			0-200		
Surrogate: 1-Chlorooctadecane	*2.18*		mg/kg wet		*3.31*		*66*	*40-140*		
Surrogate: Ortho-Terphenyl	*2.46*		mg/kg wet		*3.31*		*75*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*2.38*		mg/kg wet		*2.65*		*90*	*40-140*		
LCS (1718533-BS2)					Prepared: 02-Nov-17 Analyzed: 03-Nov-17					
C9-C18 Aliphatic Hydrocarbons	**21.1**		mg/kg wet	10.0	40.0		53	40-140		
C19-C36 Aliphatic Hydrocarbons	**28.4**		mg/kg wet	10.0	53.3		53	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	**28.9**		mg/kg wet	10.0	45.3		64	40-140		
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.67			0-200		
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.67			0-200		
Surrogate: 1-Chlorooctadecane	*2.65*		mg/kg wet		*3.33*		*79*	*40-140*		
Surrogate: Ortho-Terphenyl	*1.98*		mg/kg wet		*3.33*		*59*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*1.95*		mg/kg wet		*2.67*		*73*	*40-140*		
LCS Dup (1718533-BSD1)					Prepared: 02-Nov-17 Analyzed: 03-Nov-17					
C9-C18 Aliphatic Hydrocarbons	**19.5**		mg/kg wet	9.98	39.9		49	40-140	2	25
C19-C36 Aliphatic Hydrocarbons	**25.6**		mg/kg wet	9.98	53.2		48	40-140	2	25
Unadjusted C11-C22 Aromatic Hydrocarbons	**34.0**		mg/kg wet	9.98	45.2		75	40-140	2	25
Naphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.66			0-200		200
2-Methylnaphthalene (aliphatic fraction)	**0.00**		mg/kg wet		2.66			0-200		200
Surrogate: 1-Chlorooctadecane	*2.17*		mg/kg wet		*3.33*		*65*	*40-140*		
Surrogate: Ortho-Terphenyl	*2.52*		mg/kg wet		*3.33*		*76*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet		*2.66*		*91*	*40-140*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 6010C										
Batch 1718549 - SW846 3051A										
Blank (1718549-BLK1)					Prepared & Analyzed: 02-Nov-17					
Chromium	< 0.984		mg/kg wet	0.984						
Copper	< 12.8		mg/kg wet	12.8						
Lead	< 1.48		mg/kg wet	1.48						
Zinc	< 0.984		mg/kg wet	0.984						
Arsenic	< 1.48		mg/kg wet	1.48						
Duplicate (1718549-DUP1)			**Source: SC40987-02**		Prepared: 02-Nov-17 Analyzed: 03-Nov-17					
Zinc	**19.5**		mg/kg dry	1.06		22.9			16	20
Arsenic	**14.3**		mg/kg dry	1.59		12.8			12	20
Chromium	**16.0**		mg/kg dry	1.06		13.2			19	20
Copper	**8.60**	J,QR8	mg/kg dry	13.8		13.5			45	20
Lead	**8.72**		mg/kg dry	1.59		8.59			2	20
Matrix Spike (1718549-MS1)			**Source: SC40987-02**		Prepared & Analyzed: 02-Nov-17					
Copper	**151**		mg/kg dry	13.6	131	13.5	105	75-125		
Lead	**143**		mg/kg dry	1.57	131	8.59	103	75-125		
Zinc	**155**		mg/kg dry	1.05	131	22.9	101	75-125		
Chromium	**155**		mg/kg dry	1.05	131	13.2	108	75-125		
Arsenic	**152**		mg/kg dry	1.57	131	12.8	106	75-125		
Matrix Spike Dup (1718549-MSD1)			**Source: SC40987-02**		Prepared & Analyzed: 02-Nov-17					
Arsenic	**155**		mg/kg dry	1.56	130	12.8	110	75-125	2	20
Chromium	**159**		mg/kg dry	1.04	130	13.2	112	75-125	2	20
Copper	**155**		mg/kg dry	13.5	130	13.5	109	75-125	3	20
Lead	**143**		mg/kg dry	1.56	130	8.59	103	75-125	0.01	20
Zinc	**158**		mg/kg dry	1.04	130	22.9	104	75-125	2	20
Post Spike (1718549-PS1)			**Source: SC40987-02**		Prepared & Analyzed: 02-Nov-17					
Arsenic	**143**		mg/kg dry	1.58	132	12.8	99	80-120		
Zinc	**155**		mg/kg dry	1.05	132	22.9	100	80-120		
Lead	**131**		mg/kg dry	1.58	132	8.59	93	80-120		
Chromium	**149**		mg/kg dry	1.05	132	13.2	103	80-120		
Copper	**130**		mg/kg dry	13.7	132	13.5	89	80-120		
Reference (1718549-SRM1)					Prepared & Analyzed: 02-Nov-17					
Arsenic	**55.2**		mg/kg wet	1.50	50.4		110	80.9-120		
Chromium	**59.6**		mg/kg wet	1.00	53.9		111	77.5-121.5		
Copper	**92.6**		mg/kg wet	13.0	83.6		111	80.7-118.7		
Lead	**47.5**		mg/kg wet	1.50	44.5		107	81.2-118.8		
Zinc	**80.9**		mg/kg wet	1.00	73.0		111	82.1-117.9		
Reference (1718549-SRM2)					Prepared & Analyzed: 02-Nov-17					
Lead	**47.5**		mg/kg wet	1.50	44.3		107	81.2-118.8		
Arsenic	**54.4**		mg/kg wet	1.50	50.1		109	80.9-120		
Copper	**92.0**		mg/kg wet	13.0	83.1		111	80.7-118.7		
Zinc	**76.4**		mg/kg wet	1.00	72.6		105	82.1-117.9		
Chromium	**57.7**		mg/kg wet	1.00	53.6		108	77.5-121.5		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 9012B										
Batch 1718456 - General Preparation										
Blank (1718456-BLK1)						Prepared & Analyzed: 03-Nov-17				
Cyanide (total)	< 0.500		mg/kg wet	0.500						
LCS (1718456-BS1)						Prepared & Analyzed: 03-Nov-17				
Cyanide (total)	**26.0**		mg/kg wet	0.500	25.0		104	90-110		
Duplicate (1718456-DUP1)			**Source: SC40987-02**			Prepared & Analyzed: 03-Nov-17				
Cyanide (total)	< 0.301		mg/kg dry	0.301		BRL				35
Matrix Spike (1718456-MS1)			**Source: SC40987-02**			Prepared & Analyzed: 03-Nov-17				
Cyanide (total)	**15.4**		mg/kg dry	0.291	14.6	BRL	106	90-110		
Matrix Spike Dup (1718456-MSD1)			**Source: SC40987-02**			Prepared & Analyzed: 03-Nov-17				
Cyanide (total)	**14.4**		mg/kg dry	0.281	14.0	BRL	102	90-110	7	35
Reference (1718456-SRM1)						Prepared & Analyzed: 03-Nov-17				
Cyanide (total)	**67.1**		mg/kg wet	1.36	65.2		103	39.4-183		

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S709765				
Calibration Check (S709765-CCV1)				
C9-C18 Aliphatic Hydrocarbons	219592.2	160218.5	-22.0	25
C19-C36 Aliphatic Hydrocarbons	250542.9	175187.7	-22.9	25
Unadjusted C11-C22 Aromatic Hydrocarbons	284390.2	208417.6	-7.8	25
Naphthalene (aliphatic fraction)	281680.5			
2-Methylnaphthalene (aliphatic fraction)	280281.2			
Calibration Check (S709765-CCV2)				
C9-C18 Aliphatic Hydrocarbons	219592.2	175118.8	-13.5	25
C19-C36 Aliphatic Hydrocarbons	250542.9	259881.8	24.8	25
Unadjusted C11-C22 Aromatic Hydrocarbons	284390.2	209781.3	-7.1	25
Naphthalene (aliphatic fraction)	281680.5			
2-Methylnaphthalene (aliphatic fraction)	280281.2			

The following list indicates the date and time low-level VOC soil/sediment samples were placed in the freezer at the lab:

SC40987-02	*SP12_110117-1*	11/1/2017 3:56 PM

Notes and Definitions

D	Data reported from a dilution
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR2	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR5	RPD out of acceptance range.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Rush # 17845 SC 410987

eurofins | Spectrum Analytical

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

☐ Standard TAT - 7 to 10 business days

☒ Rush TAT - Date Needed: 48 hr.

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

RK# 17845

Report To: AECOM
250 Apollo Dr.
Chelmsford, MA 01824

Telephone #: 978-905-2100
Project Mgr: Art Taddeo

Invoice To:

P.O No.: Quote #:

Project No: 60478638.5.01
Site Name: LMC-Wilmington
Location: 40 Fordham Rd, Wilmington State: MA
Sampler(s): Tom Cody

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= ICE 12=

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: List Preservative Code below: 7,9	7	11	11	11				Check if chlorinated
										VOCs	VPH - carbon ranges	EPH - carbon ranges	As, Cu, Cr,	Pb, Zn, Cyanide				
410987-01	TB-110117	11-1-17	1000	G	S	2				X								☐
02	SP12-110117-1	11-1-17	1015	G	S	3	2			X	X	X	X	X				☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☒ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC
☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:
		11/1/17	1320
		11/01/17	1556

Temp °C
Observed: 3.5
Correction Factor: 0
Corrected: 3.5
IR ID #: 1

☐ EDD format:
☒ E-mail to: Arthur.Taddeo@aecom.com
Lori.Herberich@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Batch Summary

1718456

General Chemistry Parameters

1718456-BLK1
1718456-BS1
1718456-DUP1
1718456-MS1
1718456-MSD1
1718456-SRM1
SC40987-02 (SP12_110117-1)

1718533

Extractable Petroleum Hydrocarbons

1718533-BLK1
1718533-BS1
1718533-BS2
1718533-BSD1
SC40987-02 (SP12_110117-1)

1718543

Volatile Organic Compounds

1718543-BLK1
1718543-BS1
1718543-BSD1
SC40987-01 (TB-110117)
SC40987-02 (SP12_110117-1)

1718546

Volatile Organic Compounds

1718546-BLK1
1718546-BS1
1718546-BSD1
SC40987-02 (SP12_110117-1)

1718549

Total Metals by EPA 6000/7000 Series Methods

1718549-BLK1
1718549-DUP1
1718549-MS1
1718549-MSD1
1718549-PS1
1718549-SRM1
1718549-SRM2
SC40987-02 (SP12_110117-1)

1718557

General Chemistry Parameters

SC40987-02 (SP12_110117-1)

S708708

Volatile Organic Compounds

S708708-CAL1
S708708-CAL2
S708708-CAL3
S708708-CAL4
S708708-CAL5
S708708-CAL6
S708708-CAL7
S708708-CAL8
S708708-CAL9
S708708-ICV1
S708708-LCV1
S708708-TUN1

S709111

Volatile Organic Compounds

S709111-CAL1
S709111-CAL2
S709111-CAL3
S709111-CAL4
S709111-CAL5
S709111-CAL6
S709111-CAL7
S709111-ICV1
S709111-LCV1

S709454

Extractable Petroleum Hydrocarbons

S709454-CAL1
S709454-CAL2
S709454-CAL3
S709454-CAL4
S709454-CAL5
S709454-CAL6
S709454-CAL7
S709454-CAL8
S709454-CAL9
S709454-CALA
S709454-CALB
S709454-CALC
S709454-ICV1
S709454-LCV1

S709685

Volatile Organic Compounds

S709685-CCV1
S709685-CCV2

S709711

Volatile Organic Compounds

S709711-CCV1
S709711-TUN1

S709765

Extractable Petroleum Hydrocarbons

S709765-CCV1
S709765-CCV2

APPENDIX B – WASTE DISPOSAL DOCUMENTATION

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 518

A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: GENERAL ELECTRIC CO FMR
2. Street Address: 50 FORDHAM RD
3. City/Town: WILMINGTON 4. Zip Code: 018870000

☐ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☐ c. Tier II

B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility.
Response Actions associated with this BOL (check all that apply):

☐ a. Immediate Response Action (IRA)
☐ b. Release Abatement Measure (RAM)
☐ c. Downgradient Property Status (DPS)
☐ d. Utility Release Abatement Measure (URAM)
☐ e. Comprehensive Response Actions
☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
☐ g. Other

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 12/8/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 976825

6. Period of Generation Associated with this Bill of Lading 8/10/2017 (mm/dd/yyyy) to 8/11/2017 (mm/dd/yyyy)

(All sections of this transmittal form must be filled out unless otherwise noted above)
The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris
☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other:

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other:

C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: RHINO CONSTRUCTION COMPANY

2. Contact First Name: JAMIE 3. Last Name: HRYNIEWICH

4. Street: 171 NEWTON ROAD 5. Title: MANAGER

6. City/Town: ACTON 7. State: MA 8. Zip Code: 017200000

9. Telephone: 9782630268 10. Ext: _____ 11. Email: rhinoconstructionco@gmail.com

E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: AGGREGATE RECYCLING CORP (ARC)
2. Contact First Name: JOHN 3. Last Name: DOHERTY
4. Street: 434 DOW HIGHWAY 5. Title:
6. City/Town: ELIOT 7. State: ME 8. Zip Code: 039030000
9. Telephone: 2074395584 10. Ext: 11. Email: info@aggregaterecycling.com
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☑ b. Asphalt Batch/Hot Mix ☐ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number: NOT APPLICABLE
14. Division of Solid Waste Permit Number: S-021818-WK-B-N
15. EPA Identification Number:

F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: _____ (mm/dd/yyyy)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC 112

Release Tracking Number
3 - 518

G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☑ c. change in the person undertaking response actions

2. Name of Organization: WILMINGTON REALTY TRUST

3. Contact First Name: GARY 4. Last Name: STANIEICH

5. Street: 424 BROADWAY AVENUE 6. Title:

7. City/Town: SOMERVILLE 8. State: MA 9. Zip Code: 021450000

10. Telephone: 6038605508 11. Ext: 12. Email:

H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☑ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify:

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: 3. Title:

4. For: WILMINGTON REALTY TRUST 5. Date:

(Name of person or entity recorded in Section G) (mm/dd/yyyy)

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (MassDEP USE ONLY):

Received by DEP on 1/9/2018 9:41:41 AM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 112A

BILL OF LADING (pursuant to 310 CMR 40.0030)

Release Tracking Number
3 - 518

SUMMARY OF SHIPMENT SHEET 1 **OF** 1

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals
12/19/2017	12/19/2017	1	40.5
5. Totals Recorded on this Summary of Shipment Sheet:		1	40.5

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 112B

Release Tracking Number
3 - 518

BILL OF LADING (pursuant to 310 CMR 40.0030)
SUMMARY SHEET SIGNATURE PAGE

A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:

1. I, ERICKA STEVENS , attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ERICKA STEVENS
3. Title: OFFICE MANAGER
4. For: AGGREGATE RECYCLING
5. Date: 1/2/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 12/19/2017 (mm/dd/yyyy)

B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:

1. I, GARY STANIEICH , attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: GARY STANIEICH
3. Title:
4. For: WILMINGTON REALTY TRUST (Name of person or entity recorded in Section G)
5. Date: 1/9/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:
8. City/Town:
9. State:
10. Zip Code:
11. Telephone:
12. Ext:
13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets