

MEMORANDUM

TO: MVP Action Grant Committee, South Hadley, MA

FROM: Julianne Busa, PhD; Matthew Kissane; Daniel LaFrance, P.E., LSP
Fuss & O'Neill, Inc.
1550 Main Street, Suite 400
Springfield, MA 01103

DATE: December 9, 2021

RE: Queensville Dam Removal Feasibility Study and Buttery Brook Watershed
Enhancement
Sediment Quality and Depth Assessment
FY 22 MVP Action Grant – Town of South Hadley

1 Introduction

A feasibility investigation was conducted for the removal of the Queensville Dam and restoration of Titus Pond and Buttery Brook located in South Hadley, Massachusetts. This sediment quality investigation was performed to evaluate quality of the impounded sediments that would potentially be mobilized as a result of dam removal.

The Massachusetts Water Quality Standards, administered by the Massachusetts Department of Environmental Protection (MassDEP), pursuant to *314 CMR 9.00*, apply to water quality certification for the discharge of dredged or fill material, dredging, and dredged material disposal in Waters of the United States within the Commonwealth. Upland disposal of dredged material is managed per MassDEP *Interim Policy COMM-94-007*, and dredged sediment can be managed for reuse upland on-site or sent for disposal at lined landfills within the Commonwealth. Given the information above, sediment management alternatives were evaluated for the project.

2 Field Investigation

This investigation focused on Titus Pond located southeast of the intersection of Lyman Street and Route 116/Newton Street in South Hadley, Massachusetts. Queensville Dam, located at the southwestern portion of the impoundment, outflows into Buttery Brook that runs southwest from Titus Pond. A site location map is included in *Figure 1*. Titus Pond is surrounded by a mix of commercial, residential, and open space use.

A field investigation of the pond sediment was conducted on October 12, 2021, during which the sediment was measured, sampled, and observed within the context of the site. One (1) transect location (Transect #1) was designated through the center of Titus Pond. The location for Transect #1 was selected to provide a representative assessment of sediment quality as sediment in the pond could become mobilized as a result of increased flow velocity following dam removal.

At Transect #1 three sediment borings (i.e. north, south, and center) were advanced by TG&B Marine Services, Inc. Borings were advanced using a slide hammer method under the supervision of Fuss & O'Neill. A site plan is included in *Figure 2*.

Generally, the sediment cores were advanced through the presumed ponded sediment until the native substrate was identified by TG&B Marine Services based on material resistance. Fuss & O'Neill personnel logged sediment conditions, including recovery amount, texture, moisture content, color, odors, and observations of anthropogenic material. Samples at one (1) foot intervals were field-screened for total organic vapors (TOV) using a photoionization detector (PID). Refer to sediment boring logs in *Appendix A* and site photos in *Appendix B*.

At the transect location, the three cores of recovered pond sediment were composited into one sample. A total of one (1) composite sediment sample was submitted to Pace Analytical Laboratory (Pace) in East Longmeadow, Massachusetts, and Thielsch Engineering in Braintree, Massachusetts, for the following parameters:

- Extractable petroleum hydrocarbons (EPHs) with Target Polycyclic Aromatic Hydrocarbons (PAHs) via MassDEP Method EPH rev 2.1,
- Total metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, and Zinc) via United States Environmental Protection Agency (USEPA) Method 6010D/7471B¹,
- Polychlorinated biphenyls (PCBs) via USEPA Method 8082A,
- Herbicides via USEPA Method 8151A,
- Pesticides via USEPA Method 8081B,
- Volatile organic compounds (VOCs) via USEPA Method 8260C,
- Polycyclic aromatic hydrocarbons (PAHs) by the USEPA semi volatile organic compound (SVOC) method, USEPA Method 8270 D-E,
- Total organic carbon (TOC) via USEPA Method 9060A, and
- Toxicity Characteristic Leaching Procedure (TCLP) for lead via USEPA Method 6010D; if the total lead result exceeded 20 times rule
- Particle size distribution report via sieve analysis (gradation test).
- A trip blank was collected to detect and identify any VOC contamination between samples during travel to and from the laboratory.

A summary of the soil samples submitted for laboratory analysis is included below in *Table 1*.

¹ Metals list includes metals applicable to the 314 CMR 9: 401 WQC

Table 1
Summary of Soil Samples

Location	Sample Date	Soil Sample Number	Composite Sample Depth Range (fbws)*	TOV Result (ppmv)	Analysis
Transect #1	10/12/21	1012-04	1.9-7.5	ND	EPH, Total Metals, PCB, Herbicides, Pesticides, VOC, SVOC-PAH only, TOC, Sieve

Notes: Only the last six digits of the sample identification number are listed.

ppmv: parts per million by volume

fbws: feet below water surface

ND: Below equipment detection limits

*Composite Sample Depth Range is from top of sediment surface to bottom of sediment.

The general subsurface conditions as observed in the borings included organic silt which was observed to be underlain by a native horizon consisting of sandy silt and/or fine sands. The borings observed at Transect #1, located in the central portion of Titus Pond, consisted of a shallow horizon of sediment of approximately a foot in thickness. More detailed information regarding water and sediment depth can be found in the sediment boring logs in *Appendix A*. All TOV readings were below the instrument detection limit (0.1 ppmv). No visible sheen or petroleum odor were observed at the transect location, however, the water surface was covered with green algae at the time of investigation.

3 Sediment Analytical Results and Data Analysis

The following is a summary of the sediment conditions based on the October 12, 2021 sampling event (note that a detection above a laboratory reporting limit does not necessarily indicate the exceedance of applicable regulatory criteria, which are discussed later in this section):

- A total of five (5) metals (chromium, copper, lead, mercury and zinc) were detected above the laboratory reporting limits in the sediment composite sample. None of the results exceeded applicable sediment standards for reuse at lined landfills.
- EPH Ranges were detected in the transect composite sample above laboratory reporting limits. The maximum total EPH (C19-C36 aliphatics, and C11-C22 aromatics) was collected from Transect #1 with a result of 42 mg/kg. Five petroleum hydrocarbon compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, chrysene, and indeno(1,2,3-cd)pyrene) were detected in the transect composite sample above laboratory limits.
- TOC content was detected above laboratory reporting limits in the sediment composite sample with the result of 17,000 mg/kg.
- Total PCBs, VOCs, PAHs, pesticides, and herbicides were not detected above laboratory limits in the transect composite sample.
- All results for the Trip Blank collected were below the laboratory detection limits.
- Soil texture based on sieve analysis indicated that material for Transect #1 was dark brown silty sand.

The sediment analytical results were compared to the MassDEP Maximum Allowable Contaminant Levels (MACLs) for Sediment Reuse at Lined Landfills (*Comm 94-007*) and the "Consensus-Based Probability Effect Concentration (PEC). While not a regulatory criteria, the PEC are "intended to identify contaminant concentrations above which harmful effects on sediment-dwelling organisms were expected to occur frequently"². The following summarizes the exceedances when compared to the applicable sediment standards:

- All analytical data was below applicable PECs and MACLs.

The Pace and Thielsch Engineering laboratory analytical reports are included in *Appendix C*. Sediment analytical data is summarized in *Table 2*.

4 Conclusions

On October 12, 2021, Fuss & O'Neill performed a sediment quality analysis as part of a dam removal feasibility study for the site located at Titus Pond in South Hadley, MA. Fuss & O'Neill developed the following conclusions in regards to the sediment conditions:

- Sediment accumulation was observed at a shallow horizon of approximately a foot in thickness.
- The total concentrations of detected analytes were below applicable MACLs for reuse at a lined landfill.
- The total concentrations of detected analytes were below applicable PECs.

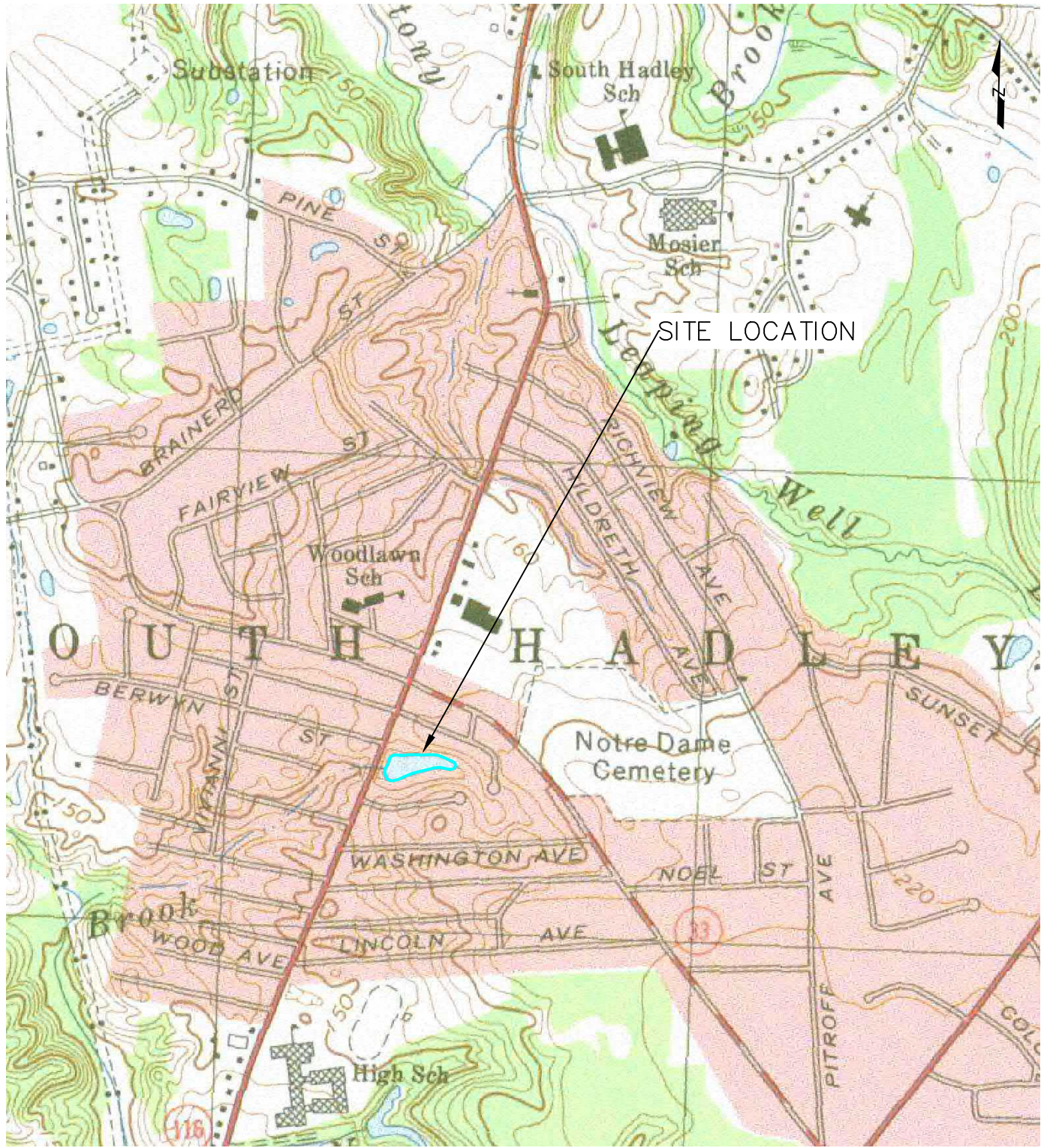
5 Sediment Management Recommendations

The conclusions developed from this feasibility study may be used to further assist with the decision-making process for sediment management alternatives. Evaluation of the scour potential of these sediments is being undertaken concurrently as part of this feasibility study. The scour potential of these sediments and the approximate volumes of scour prone sediments will assist in determining the most appropriate sediment management measure or combination of measures to be recommended for this project. Based upon current knowledge of sediment quality, it is our recommendation that any sediment that needs to be dredged and/or excavated based on the forthcoming scour analysis be reused as fill material in an upland portion of the site. With the approval of permitting agencies, non-hazardous sediments can also often be allowed to redistribute naturally downstream. These alternatives greatly reduce any costs associated with transportation or disposal of the sediment and reduces the overall complexity of the dam removal process.

This recommended alternative assumes that there is adequate suitable area within the Buttery Brook Watershed for placement of any dredged sediments. If there is insufficient/unsuitable space for onsite reuse, it may be necessary to relocate dredged material offsite. Additional analytical characterization of dredged sediments may be required if offsite transportation and placement/disposal is required.

² MacDonald et al., *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*, 2000.

Figure



MAP REFERENCE

THIS MAP WAS PREPARED FROM USGS TOPOGRAPHIC QUADRANGLE IMAGES

SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS
 EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

SCALE:	
HORZ.:	1" = 1,000'
VERT.:	
DATUM:	
HORZ.:	
VERT.:	
GRAPHIC SCALE	



FUSS & O'NEILL

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 SPRINGFIELD, MA 01103
 413.452.0445
 www.fando.com

TOWN OF SOUTH HADLEY

SITE LOCATION MAP

QUEENSVILLE DAM REMOVAL

SOUTH HADLEY

MASSACHUSETTS

PROJ. No.: 20170390_V30
 DATE: OCTOBER 2021

FIGURE 1

File Path: J:\DWG\IP2017\0390\1\30\Environmental\20170390_V30_STP.dwg Layout: OVERALL Plotted: Tue, October 26, 2021 - 10:15 AM User: sdevincen
 Plotter: DWG TO PDF-PC3 CTB File: FO.STB
 LAYER: STATE



MAP REFERENCE

THIS MAP WAS PREPARED FROM USGS COLOR ORTHO IMAGERY (2019)
 SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

LEGEND

— TRANSECT (OCT 2021)

SCALE:	
HORZ.:	1" = 150'
VERT.:	
DATUM:	
HORZ.:	
VERT.:	
GRAPHIC SCALE	



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 www.fando.com

TOWN OF SOUTH HADLEY

SITE PLAN

QUEENSVILLE DAM

SOUTH HADLEY

MASSACHUSETTS

PROJ. No.: 20170390_V30
 DATE: OCTOBER 2021

FIGURE 2

Table



Table 2
Summary of Sediment Analytical Data and Objectives

Environmental Site Assessment
Queensville Dam Removal
South Hadley, Massachusetts
October 12, 2021

	Sample Type	Composite	Sediment Standards ¹	
			Maximum Allowable Contaminant Levels for Sediment Reuse at Lined Landfills ²	Consensus-Based PEC ³
	Sample Location	Transect #1		
	Sample Number	1012-04		
	Sample Depth (fbws)	1.9-7.5		
	Headspace (ppmv)	0.0		
	Sample Date	10/12/2021		
Total Metals (USEPA Methods 6010/7471)				
	Arsenic	mg/kg	ND<5.5	33
	Cadmium	mg/kg	ND<0.55	4.98
	Chromium	mg/kg	12	111
	Copper	mg/kg	18	---
	Lead	mg/kg	22	128
	Mercury	mg/kg	0.048	1.06
	Zinc	mf/kg	45	459
PCBs (USEPA Method 8082A)				
	Total PCBs	mg/kg	ND<0.14	0.676
VOCs (USEPA Method 8260C)				
	Total VOCs	mg/kg	ND<Various	---
SVOCs - PAHs Only (USEPA Method 8270D-E)				
	Total PAHs	mg/kg	ND<0.30	23
EPH (MassDEP Method EPH rev 2.1)				
	C19-C36 Aliphatics	mg/kg	23	---
	C11-C12 Aromatics	mg/kg	19	---
	Benzo(a)anthracene	mg/kg	0.99	1.05
	Benzo(a)pyrene	mg/kg	1.1	1.45
	Benzo(g,h,i)perylene	mg/kg	0.22	---
	Chrysene	mg/kg	0.27	1.29
	Indeno(1,2,3-cd)pyrene	mg/kg	0.19	---
Herbicides (USEPA Method 8151A)				
	Various	mg/kg	ND<Various	---
Pesticides (USEPA Method 8081B)				
	Various	mg/kg	ND<Various	---
Total Organic Carbon (USEPA Method 9060A)				
		mg/kg	17,000	---

Created By: SMD
Checked By: MK

Notes:

MassDEP: Massachusetts Department of Environmental Protection
USEPA: United States Environmental Protection Agency
EPH: Extractable Petroleum Hydrocarbon
PAH: Polycyclic Aromatic Hydrocarbon
PCB: Polychlorinated Biphenyl
VOC: Volatile Organic Compound
SVOC: Semivolatile Organic Compound
ppmv: parts per million by volume
fbws: feet below water surface
mg/kg: milligrams per kilogram

---: Criteria not defined in applicable regulations
NA: Not analyzed
ND<X: Not detected above the lab reporting limits shown.
Shaded and bolded values exceed the levels for sediment reuse at lined landfills
Italicized and bolded values exceed the PEC
Only analytes at concentrations greater than the reporting limits are listed.
¹: Parameters required by 314 CMR 9.00 in accordance with the approved sampling plan
²: Interim Policy COMM-94-007: Dredged Sediment Reuse or Disposal Table 1
³: PEC = Probably Effect Concentration, MacDonald et. al, 2000

Appendix A

Sediment Boring Logs

Logo Fuss & O'Neill

PROJECT NUMBER 20170390.V30 **DATE STARTED** 10/12/21
PROJECT NAME MVP Action Grant FY22 **DATE COMPLETED** 10/12/21
LOCATION South Hadley, MA **CASING TYPE/DIAMETER** ----
DRILLING METHOD Slide Hammer **SCREEN TYPE/SLOT/INTERVAL** ----
HAMMER WEIGHT/FALL -- **GRAVEL PACK TYPE** ----
ELEVATION (FT) ---- **GROUT TYPE/QUANTITY** ----
TOP OF CASING ---- **DEPTH TO WATER (FT)** 0.0
LOGGED BY S. DeVincentis **GROUND WATER ELEVATION** ---
REMARKS Sample I.D. Prefix: 1543211012-

LOG A EVNN01 - ESDAT_LOG1.GDT - 10/13/21 13:49 - F:\P20170390\30\DELIVERABLES\SEDIMENT QUALITY INVESTIGATION\MEMO\APP A -BORINGS\20170390.V30_T1.GPJ

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	WATER DEPTH
0.0		24	-04		5			Titus Pond	▼
0.0						ML		Dark brown, fine SAND and SILT, some Organics, wet, no odor (ORGANIC SILT)	
						SP		Brown, fine SAND, little Silt, wet	
								Bottom of borehole at 8.5 feet.	

Logo Fuss & O'Neill

PROJECT NUMBER 20170390.V30 **DATE STARTED** 10/12/21
PROJECT NAME MVP Action Grant FY22 **DATE COMPLETED** 10/12/21
LOCATION South Hadley, MA **CASING TYPE/DIAMETER** ----
DRILLING METHOD Slide Hammer **SCREEN TYPE/SLOT/INTERVAL** ----
HAMMER WEIGHT/FALL -- **GRAVEL PACK TYPE** ----
ELEVATION (FT) ---- **GROUT TYPE/QUANTITY** ----
TOP OF CASING ---- **DEPTH TO WATER (FT)** 0.0
LOGGED BY S. DeVincentis **GROUND WATER ELEVATION** ---
REMARKS Sample I.D. Prefix: 1543211012-



LOG A EVNN01 - ESDAT_LOG1.GDT - 10/13/21 13:49 - F:\P20170390\30\DELIVERABLES\SEDIMENT QUALITY INVESTIGATION\MEMO\APP A -BORINGS\20170390.V30_T1.GPJ

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	WATER DEPTH
		30						Titus Pond	
0.0					5	ML		Brown, fine SAND and SILT, some Organics, wet, no odor (ORGANIC SILT)	
0.0						SP		Brown, fine SAND, trace Silt, wet	
						ML		Brown, fine SAND and SILT, some Organics, wet, no odor (ORGANIC SILT)	
						ML		Dark brown to black, fine SAND and SILT, some Organics, wet, no odor (ORGANIC SILT)	
Bottom of borehole at 6.4 feet.									

Logo Fuss & O'Neill

PROJECT NUMBER 20170390.V30 **DATE STARTED** 10/12/21
PROJECT NAME MVP Action Grant FY22 **DATE COMPLETED** 10/12/21
LOCATION South Hadley, MA **CASING TYPE/DIAMETER** ----
DRILLING METHOD Slide Hammer **SCREEN TYPE/SLOT/INTERVAL** ----
HAMMER WEIGHT/FALL -- **GRAVEL PACK TYPE** ----
ELEVATION (FT) ---- **GROUT TYPE/QUANTITY** ----
TOP OF CASING ---- **DEPTH TO WATER (FT)** 0.0
LOGGED BY S. DeVincentis **GROUND WATER ELEVATION** ---
REMARKS Sample I.D. Prefix: 1543211012-

LOG A EVNN01 - ESDAT_LOG1.GDT - 10/13/21 13:50 - F:\P20170390\30\DELIVERABLES\SEDIMENT QUALITY INVESTIGATION\MEMO\APP A -BORINGS\20170390.V30_T1.GPJ

PID (ppm)	BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	WATER DEPTH
0.0		16.8	-04					Titus Pond	▼
0.0						SM		Brown, fine SAND and SILT, little Organics, wet, no odor	
						SP		Brown, fine to medium SAND, trace Silt, wet, no odor	
								Bottom of borehole at 3.3 feet.	

Appendix B Site Photos



Titus Pond, facing east.



View of southern sediment core located at Transect 1.



View of center sediment core located at Transect 1.



View of northern sediment core located at Transect 1.

Appendix C

Laboratory Analytical Reports

October 21, 2021

Matt Kissane
Fuss & O'Neill EnviroScience, LLC - MA
108 Myrtle St,
Quincy, MA 02171

Project Location: Hadley, MA
Client Job Number:
Project Number: 20170390.V30
Laboratory Work Order Number: 21J0808

Enclosed are results of analyses for samples as received by the laboratory on October 14, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

 Fuss & O'Neill EnviroScience, LLC - MA
 108 Myrtle St,
 Quincy, MA 02171
 ATTN: Matt Kissane

REPORT DATE: 10/21/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20170390.V30

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21J0808

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Hadley, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
1543211012-04	21J0808-01	Soil		MADEP EPH rev 2.1 SM 2540G SW 846 9060A SW-846 6010D SW-846 7471B SW-846 8081B SW-846 8082A SW-846 8151A SW-846 8260D SW-846 8270E	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8151 samples were derivatized on 10/19/21

For method 8151 samples analysis bracketed by LCS to monitor esterification. All recoveries in the bracketing LCS met method criteria.

For method 8270E, only PAHs were requested and reported.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SW-846 8081B

Qualifications:**DL-03**

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

21J0808-01[1543211012-04]

SW-846 8082A

Qualifications:**O-32**

A dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

21J0808-01[1543211012-04]

SW-846 8151A

Qualifications:**L-04**

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**Dalapon**

21J0808-01[1543211012-04], B292484-BLK1, B292484-BS1, B292484-BSD1

Dalapon [2C]

21J0808-01[1543211012-04], B292484-BLK1, B292484-BS1, B292484-BSD1

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:**2,4-DB**

B292484-BSD1

2,4-DB [2C]

B292484-BSD1

O-32

A dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

21J0808-01[1543211012-04]

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**2,4-DB**

21J0808-01[1543211012-04], B292484-BLK1, B292484-BS1

2,4-DB [2C]

21J0808-01[1543211012-04], B292484-BLK1, B292484-BS1

Dinoseb

B292484-BLK1, B292484-BS1, B292484-BSD1

Dinoseb [2C]

B292484-BLK1, B292484-BS1, B292484-BSD1

MCPP

21J0808-01[1543211012-04], B292484-BLK1, B292484-BS1, B292484-BSD1

MCPP [2C]

21J0808-01[1543211012-04], B292484-BLK1, B292484-BS1, B292484-BSD1

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S-02

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Analyte & Samples(s) Qualified:**2,4-Dichlorophenylacetic acid [2C]**

21J0808-01[1543211012-04]

SW-846 8260D**Qualifications:****L-04**

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**tert-Amyl Methyl Ether (TAME)**

21J0808-01[1543211012-04], B292542-BLK1, B292542-BS1, B292542-BSD1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**Methyl tert-Butyl Ether (MTBE)**

21J0808-01[1543211012-04], B292542-BLK1, B292542-BS1, B292542-BSD1, S064327-CCV1

Naphthalene

21J0808-01[1543211012-04], B292542-BLK1, B292542-BS1, B292542-BSD1, S064327-CCV1

tert-Amyl Methyl Ether (TAME)

21J0808-01[1543211012-04], B292542-BLK1, B292542-BS1, B292542-BSD1, S064327-CCV1

tert-Butyl Ethyl Ether (TBEE)

21J0808-01[1543211012-04], B292542-BLK1, B292542-BS1, B292542-BSD1, S064327-CCV1

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:**1,4-Dioxane**

S064327-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Dichlorodifluoromethane (Freon 12)**

B292542-BS1, B292542-BSD1, S064327-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**Bromomethane**

21J0808-01[1543211012-04], B292542-BLK1, B292542-BS1, B292542-BSD1, S064327-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.10	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg dry	1	L-04, V-05	SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Benzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Bromobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Bromochloromethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Bromodichloromethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Bromoform	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Bromomethane	ND	0.010	mg/Kg dry	1	V-34	SW-846 8260D	10/15/21	10/15/21 7:49	MFF
2-Butanone (MEK)	ND	0.040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
n-Butylbenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
sec-Butylbenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
tert-Butylbenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg dry	1	V-05	SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Carbon Disulfide	ND	0.010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Carbon Tetrachloride	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Chlorobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Chlorodibromomethane	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Chloroethane	ND	0.020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Chloroform	ND	0.0040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Chloromethane	ND	0.010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
2-Chlorotoluene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
4-Chlorotoluene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Dibromomethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2-Dichlorobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,3-Dichlorobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,4-Dichlorobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1-Dichloroethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2-Dichloroethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1-Dichloroethylene	ND	0.0040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2-Dichloropropane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,3-Dichloropropane	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
2,2-Dichloropropane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1-Dichloropropene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Diethyl Ether	ND	0.020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,4-Dioxane	ND	0.10	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Ethylbenzene	ND	0.0040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
2-Hexanone (MBK)	ND	0.020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg dry	1	V-05	SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Methylene Chloride	ND	0.020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Naphthalene	ND	0.0040	mg/Kg dry	1	V-05	SW-846 8260D	10/15/21	10/15/21 7:49	MFF
n-Propylbenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Styrene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Tetrachloroethylene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Tetrahydrofuran	ND	0.010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Toluene	ND	0.0040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1,1-Trichloroethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,1,2-Trichloroethane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Trichloroethylene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2,3-Trichloropropane	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
Vinyl Chloride	ND	0.010	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
m+p Xylene	ND	0.0080	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF
o-Xylene	ND	0.0040	mg/Kg dry	1		SW-846 8260D	10/15/21	10/15/21 7:49	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	93.6	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	94.5	70-130	

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Acenaphthylene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Anthracene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Benzo(a)anthracene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Benzo(a)pyrene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Benzo(b)fluoranthene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Benzo(g,h,i)perylene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Benzo(k)fluoranthene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Chrysene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Dibenz(a,h)anthracene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Fluoranthene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Fluorene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Indeno(1,2,3-cd)pyrene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
2-Methylnaphthalene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Naphthalene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Phenanthrene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Pyrene	ND	0.30	mg/Kg dry	1		SW-846 8270E	10/18/21	10/20/21 15:14	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		48.5	30-130					10/20/21 15:14	
2-Fluorobiphenyl		52.7	30-130					10/20/21 15:14	
p-Terphenyl-d14		55.2	30-130					10/20/21 15:14	

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aldrin [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
alpha-BHC [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
beta-BHC [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
delta-BHC [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
gamma-BHC (Lindane) [1]	ND	0.070	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Chlordane [1]	ND	0.70	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
4,4'-DDD [1]	ND	0.14	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
4,4'-DDE [1]	ND	0.14	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
4,4'-DDT [1]	ND	0.14	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Dieldrin [1]	ND	0.14	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Endosulfan I [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Endosulfan II [1]	ND	0.28	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Endosulfan sulfate [1]	ND	0.28	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Endrin [1]	ND	0.28	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Endrin ketone [1]	ND	0.28	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Heptachlor [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Heptachlor epoxide [1]	ND	0.17	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Hexachlorobenzene [1]	ND	0.21	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG
Methoxychlor [1]	ND	1.7	mg/Kg dry	20		SW-846 8081B	10/19/21	10/21/21 1:15	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual
Decachlorobiphenyl [1]	90.7	30-150	10/21/21 1:15
Decachlorobiphenyl [2]	86.7	30-150	10/21/21 1:15
Tetrachloro-m-xylene [1]	74.6	30-150	10/21/21 1:15
Tetrachloro-m-xylene [2]	80.3	30-150	10/21/21 1:15

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1221 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1232 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1242 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1248 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1254 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1260 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1262 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Aroclor-1268 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	10/19/21	10/21/21 13:09	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		102	30-150					10/21/21 13:09	
Decachlorobiphenyl [2]		109	30-150					10/21/21 13:09	
Tetrachloro-m-xylene [1]		90.7	30-150					10/21/21 13:09	
Tetrachloro-m-xylene [2]		80.7	30-150					10/21/21 13:09	

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Sample Flags: O-32

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	170	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
2,4-DB [1]	ND	170	µg/kg dry	4	R-05	SW-846 8151A	10/14/21	10/20/21 15:15	TG
2,4,5-TP (Silvex) [1]	ND	17	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
2,4,5-T [1]	ND	17	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
Dalapon [1]	ND	430	µg/kg dry	4	L-04	SW-846 8151A	10/14/21	10/20/21 15:15	TG
Dicamba [1]	ND	17	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
Dichloroprop [1]	ND	170	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
Dinoseb [1]	ND	87	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
MCPA [1]	ND	17000	µg/kg dry	4		SW-846 8151A	10/14/21	10/20/21 15:15	TG
MCPA [1]	ND	17000	µg/kg dry	4	R-05	SW-846 8151A	10/14/21	10/20/21 15:15	TG
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
2,4-Dichlorophenylacetic acid [1]	109		30-150					10/20/21 15:15	
2,4-Dichlorophenylacetic acid [2]	821 *		30-150		S-02			10/20/21 15:15	

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
C19-C36 Aliphatics	23	17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Unadjusted C11-C22 Aromatics	22	17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
C11-C22 Aromatics	19	17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Acenaphthene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Acenaphthylene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Anthracene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Benzo(a)anthracene	0.99	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Benzo(a)pyrene	1.1	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Benzo(b)fluoranthene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Benzo(g,h,i)perylene	0.22	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Benzo(k)fluoranthene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Chrysene	0.27	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Dibenz(a,h)anthracene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Fluoranthene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Fluorene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Indeno(1,2,3-cd)pyrene	0.19	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
2-Methylnaphthalene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Naphthalene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Phenanthrene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Pyrene	ND	0.17	mg/Kg dry	1		MADEP EPH rev 2.1	10/19/21	10/21/21 11:33	CJM
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Chlorooctadecane (COD)		50.4	40-140					10/21/21 11:33	
o-Terphenyl (OTP)		58.0	40-140					10/21/21 11:33	
2-Bromonaphthalene		107	40-140					10/21/21 11:33	
2-Fluorobiphenyl		105	40-140					10/21/21 11:33	

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	5.5	mg/Kg dry	1		SW-846 6010D	10/15/21	10/16/21 21:33	MJH
Cadmium	ND	0.55	mg/Kg dry	1		SW-846 6010D	10/15/21	10/17/21 22:08	TBC
Chromium	12	1.1	mg/Kg dry	1		SW-846 6010D	10/15/21	10/16/21 21:33	MJH
Copper	18	1.1	mg/Kg dry	1		SW-846 6010D	10/15/21	10/16/21 21:33	MJH
Lead	22	0.82	mg/Kg dry	1		SW-846 6010D	10/15/21	10/16/21 21:33	MJH
Mercury	0.048	0.043	mg/Kg dry	1		SW-846 7471B	10/15/21	10/19/21 9:05	DRL
Zinc	45	1.1	mg/Kg dry	1		SW-846 6010D	10/15/21	10/16/21 21:33	MJH

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Project Location: Hadley, MA

Sample Description:

Work Order: 21J0808

Date Received: 10/14/2021

Field Sample #: 1543211012-04

Sampled: 10/12/2021 13:50

Sample ID: 21J0808-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	57.5		% Wt	1		SM 2540G	10/15/21	10/18/21 14:05	BMB
Total Organic Carbon	17000	100	mg/Kg	1		SW 846 9060A	10/19/21	10/19/21 22:07	DJM

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Sample Extraction Data
Prep Method: SW-846 3546 Analytical Method: MADEP EPH rev 2.1

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292780	20.0	2.00	10/19/21

Prep Method: % Solids Analytical Method: SM 2540G

Lab Number [Field ID]	Batch	Date
21J0808-01 [1543211012-04]	B292573	10/15/21

SW 846 9060A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292564	1.00	1.00	10/19/21

Prep Method: SW-846 3050B Analytical Method: SW-846 6010D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292553	1.59	50.0	10/15/21

Prep Method: SW-846 7471 Analytical Method: SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292557	0.611	50.0	10/15/21

Prep Method: SW-846 3546 Analytical Method: SW-846 8081B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292766	10.0	10.0	10/19/21

Prep Method: SW-846 3546 Analytical Method: SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292768	10.0	10.0	10/19/21

Prep Method: SW-846 8151 Analytical Method: SW-846 8151A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292484	20.0	5.00	10/14/21

Prep Method: SW-846 5035 Analytical Method: SW-846 8260D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292542	8.71	10.0	10/15/21

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Sample Extraction Data

Prep Method: SW-846 3546 Analytical Method: SW-846 8270E

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
21J0808-01 [1543211012-04]	B292689	30.0	1.00	10/18/21

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292542 - SW-846 5035										
Blank (B292542-BLK1)										
Prepared & Analyzed: 10/15/21										
Acetone	ND	0.10	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							L-04, V-05
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0020	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							V-05
Carbon Disulfide	ND	0.010	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.020	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.020	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							V-05
Methylene Chloride	ND	0.020	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.0040	mg/Kg wet							V-05

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292542 - SW-846 5035										
Blank (B292542-BLK1)										
Prepared & Analyzed: 10/15/21										
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0457		mg/Kg wet	0.0500		91.3	70-130			
Surrogate: Toluene-d8	0.0495		mg/Kg wet	0.0500		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.0486		mg/Kg wet	0.0500		97.3	70-130			
LCS (B292542-BS1)										
Prepared & Analyzed: 10/15/21										
Acetone	0.175	0.10	mg/Kg wet	0.200		87.4	40-160			†
tert-Amyl Methyl Ether (TAME)	0.0133	0.0010	mg/Kg wet	0.0200		66.3 *	70-130			L-04, V-05
Benzene	0.0161	0.0020	mg/Kg wet	0.0200		80.4	70-130			
Bromobenzene	0.0183	0.0020	mg/Kg wet	0.0200		91.6	70-130			
Bromochloromethane	0.0173	0.0020	mg/Kg wet	0.0200		86.3	70-130			
Bromodichloromethane	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130			
Bromoform	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130			
Bromomethane	0.0209	0.010	mg/Kg wet	0.0200		105	40-160			V-34 †
2-Butanone (MEK)	0.160	0.040	mg/Kg wet	0.200		80.1	40-160			†
n-Butylbenzene	0.0174	0.0020	mg/Kg wet	0.0200		87.1	70-130			
sec-Butylbenzene	0.0176	0.0020	mg/Kg wet	0.0200		87.8	70-130			
tert-Butylbenzene	0.0186	0.0020	mg/Kg wet	0.0200		92.8	70-130			
tert-Butyl Ethyl Ether (TBEE)	0.0146	0.0010	mg/Kg wet	0.0200		73.2	70-130			V-05
Carbon Disulfide	0.187	0.010	mg/Kg wet	0.200		93.7	70-130			
Carbon Tetrachloride	0.0181	0.0020	mg/Kg wet	0.0200		90.6	70-130			
Chlorobenzene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130			
Chlorodibromomethane	0.0194	0.0010	mg/Kg wet	0.0200		96.8	70-130			
Chloroethane	0.0196	0.020	mg/Kg wet	0.0200		97.9	70-130			
Chloroform	0.0159	0.0040	mg/Kg wet	0.0200		79.3	70-130			
Chloromethane	0.0224	0.010	mg/Kg wet	0.0200		112	40-160			†
2-Chlorotoluene	0.0199	0.0020	mg/Kg wet	0.0200		99.4	70-130			
4-Chlorotoluene	0.0198	0.0020	mg/Kg wet	0.0200		99.1	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.0158	0.0020	mg/Kg wet	0.0200		78.9	70-130			
1,2-Dibromoethane (EDB)	0.0183	0.0010	mg/Kg wet	0.0200		91.5	70-130			
Dibromomethane	0.0191	0.0020	mg/Kg wet	0.0200		95.3	70-130			
1,2-Dichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130			
1,3-Dichlorobenzene	0.0187	0.0020	mg/Kg wet	0.0200		93.7	70-130			
1,4-Dichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130			

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292542 - SW-846 5035										
LCS (B292542-BS1)										
Prepared & Analyzed: 10/15/21										
Dichlorodifluoromethane (Freon 12)	0.0247	0.020	mg/Kg wet	0.0200		124	40-160			V-20 †
1,1-Dichloroethane	0.0169	0.0020	mg/Kg wet	0.0200		84.6	70-130			
1,2-Dichloroethane	0.0196	0.0020	mg/Kg wet	0.0200		97.8	70-130			
1,1-Dichloroethylene	0.0197	0.0040	mg/Kg wet	0.0200		98.3	70-130			
cis-1,2-Dichloroethylene	0.0173	0.0020	mg/Kg wet	0.0200		86.5	70-130			
trans-1,2-Dichloroethylene	0.0175	0.0020	mg/Kg wet	0.0200		87.5	70-130			
1,2-Dichloropropane	0.0180	0.0020	mg/Kg wet	0.0200		90.1	70-130			
1,3-Dichloropropane	0.0182	0.0010	mg/Kg wet	0.0200		90.9	70-130			
2,2-Dichloropropane	0.0173	0.0020	mg/Kg wet	0.0200		86.6	70-130			
1,1-Dichloropropene	0.0162	0.0020	mg/Kg wet	0.0200		81.0	70-130			
cis-1,3-Dichloropropene	0.0172	0.0010	mg/Kg wet	0.0200		86.0	70-130			
trans-1,3-Dichloropropene	0.0168	0.0010	mg/Kg wet	0.0200		84.1	70-130			
Diethyl Ether	0.0170	0.020	mg/Kg wet	0.0200		85.2	70-130			
Diisopropyl Ether (DIPE)	0.0164	0.0010	mg/Kg wet	0.0200		82.0	70-130			
1,4-Dioxane	0.176	0.10	mg/Kg wet	0.200		88.0	40-160			†
Ethylbenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130			
Hexachlorobutadiene	0.0197	0.0020	mg/Kg wet	0.0200		98.5	70-130			
2-Hexanone (MBK)	0.176	0.020	mg/Kg wet	0.200		88.0	40-160			†
Isopropylbenzene (Cumene)	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130			
p-Isopropyltoluene (p-Cymene)	0.0184	0.0020	mg/Kg wet	0.0200		92.2	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0141	0.0040	mg/Kg wet	0.0200		70.5	70-130			V-05
Methylene Chloride	0.0177	0.020	mg/Kg wet	0.0200		88.4	70-130			
4-Methyl-2-pentanone (MIBK)	0.183	0.020	mg/Kg wet	0.200		91.7	40-160			†
Naphthalene	0.0157	0.0040	mg/Kg wet	0.0200		78.4	70-130			V-05
n-Propylbenzene	0.0200	0.0020	mg/Kg wet	0.0200		99.9	70-130			
Styrene	0.0193	0.0020	mg/Kg wet	0.0200		96.6	70-130			
1,1,1,2-Tetrachloroethane	0.0200	0.0020	mg/Kg wet	0.0200		100	70-130			
1,1,1,2,2-Tetrachloroethane	0.0183	0.0010	mg/Kg wet	0.0200		91.4	70-130			
Tetrachloroethylene	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130			
Tetrahydrofuran	0.0141	0.010	mg/Kg wet	0.0200		70.6	70-130			
Toluene	0.0192	0.0020	mg/Kg wet	0.0200		96.0	70-130			
1,2,3-Trichlorobenzene	0.0186	0.0020	mg/Kg wet	0.0200		92.8	70-130			
1,2,4-Trichlorobenzene	0.0188	0.0020	mg/Kg wet	0.0200		94.1	70-130			
1,1,1-Trichloroethane	0.0162	0.0020	mg/Kg wet	0.0200		80.8	70-130			
1,1,2-Trichloroethane	0.0176	0.0020	mg/Kg wet	0.0200		87.8	70-130			
Trichloroethylene	0.0183	0.0020	mg/Kg wet	0.0200		91.4	70-130			
Trichlorofluoromethane (Freon 11)	0.0219	0.010	mg/Kg wet	0.0200		109	70-130			
1,2,3-Trichloropropane	0.0183	0.0020	mg/Kg wet	0.0200		91.5	70-130			
1,2,4-Trimethylbenzene	0.0176	0.0020	mg/Kg wet	0.0200		88.2	70-130			
1,3,5-Trimethylbenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.5	70-130			
Vinyl Chloride	0.0231	0.010	mg/Kg wet	0.0200		116	70-130			
m+p Xylene	0.0360	0.0040	mg/Kg wet	0.0400		90.1	70-130			
o-Xylene	0.0190	0.0020	mg/Kg wet	0.0200		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0436		mg/Kg wet	0.0500		87.1	70-130			
Surrogate: Toluene-d8	0.0511		mg/Kg wet	0.0500		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0497		mg/Kg wet	0.0500		99.3	70-130			

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292542 - SW-846 5035										
LCS Dup (B292542-BSD1)										
Prepared & Analyzed: 10/15/21										
Acetone	0.177	0.10	mg/Kg wet	0.200		88.5	40-160	1.28	20	†
tert-Amyl Methyl Ether (TAME)	0.0139	0.0010	mg/Kg wet	0.0200		69.4 *	70-130	4.58	20	L-04, V-05
Benzene	0.0165	0.0020	mg/Kg wet	0.0200		82.3	70-130	2.32	20	
Bromobenzene	0.0191	0.0020	mg/Kg wet	0.0200		95.4	70-130	4.15	20	
Bromochloromethane	0.0182	0.0020	mg/Kg wet	0.0200		90.8	70-130	5.00	20	
Bromodichloromethane	0.0183	0.0020	mg/Kg wet	0.0200		91.3	70-130	2.06	20	
Bromoform	0.0207	0.0020	mg/Kg wet	0.0200		103	70-130	2.79	20	
Bromomethane	0.0221	0.010	mg/Kg wet	0.0200		110	40-160	5.29	20	V-34 †
2-Butanone (MEK)	0.169	0.040	mg/Kg wet	0.200		84.5	40-160	5.33	20	†
n-Butylbenzene	0.0178	0.0020	mg/Kg wet	0.0200		89.0	70-130	2.15	20	
sec-Butylbenzene	0.0181	0.0020	mg/Kg wet	0.0200		90.3	70-130	2.72	20	
tert-Butylbenzene	0.0188	0.0020	mg/Kg wet	0.0200		93.8	70-130	1.14	20	
tert-Butyl Ethyl Ether (TBEE)	0.0148	0.0010	mg/Kg wet	0.0200		74.2	70-130	1.37	20	V-05
Carbon Disulfide	0.189	0.010	mg/Kg wet	0.200		94.5	70-130	0.846	20	
Carbon Tetrachloride	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130	0.605	20	
Chlorobenzene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	3.12	20	
Chlorodibromomethane	0.0208	0.0010	mg/Kg wet	0.0200		104	70-130	7.24	20	
Chloroethane	0.0197	0.020	mg/Kg wet	0.0200		98.7	70-130	0.854	20	
Chloroform	0.0164	0.0040	mg/Kg wet	0.0200		82.1	70-130	3.44	20	
Chloromethane	0.0224	0.010	mg/Kg wet	0.0200		112	40-160	0.330	20	†
2-Chlorotoluene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	1.59	20	
4-Chlorotoluene	0.0200	0.0020	mg/Kg wet	0.0200		99.9	70-130	0.814	20	
1,2-Dibromo-3-chloropropane (DBCP)	0.0153	0.0020	mg/Kg wet	0.0200		76.4	70-130	3.13	20	
1,2-Dibromoethane (EDB)	0.0185	0.0010	mg/Kg wet	0.0200		92.3	70-130	0.903	20	
Dibromomethane	0.0195	0.0020	mg/Kg wet	0.0200		97.6	70-130	2.46	20	
1,2-Dichlorobenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.6	70-130	3.69	20	
1,3-Dichlorobenzene	0.0190	0.0020	mg/Kg wet	0.0200		95.1	70-130	1.45	20	
1,4-Dichlorobenzene	0.0190	0.0020	mg/Kg wet	0.0200		95.0	70-130	4.03	20	
Dichlorodifluoromethane (Freon 12)	0.0247	0.020	mg/Kg wet	0.0200		123	40-160	0.356	20	V-20 †
1,1-Dichloroethane	0.0175	0.0020	mg/Kg wet	0.0200		87.7	70-130	3.64	20	
1,2-Dichloroethane	0.0194	0.0020	mg/Kg wet	0.0200		97.2	70-130	0.677	20	
1,1-Dichloroethylene	0.0202	0.0040	mg/Kg wet	0.0200		101	70-130	2.68	20	
cis-1,2-Dichloroethylene	0.0177	0.0020	mg/Kg wet	0.0200		88.7	70-130	2.50	20	
trans-1,2-Dichloroethylene	0.0176	0.0020	mg/Kg wet	0.0200		88.1	70-130	0.706	20	
1,2-Dichloropropane	0.0187	0.0020	mg/Kg wet	0.0200		93.5	70-130	3.68	20	
1,3-Dichloropropane	0.0185	0.0010	mg/Kg wet	0.0200		92.5	70-130	1.79	20	
2,2-Dichloropropane	0.0175	0.0020	mg/Kg wet	0.0200		87.5	70-130	0.977	20	
1,1-Dichloropropene	0.0160	0.0020	mg/Kg wet	0.0200		79.8	70-130	1.48	20	
cis-1,3-Dichloropropene	0.0177	0.0010	mg/Kg wet	0.0200		88.7	70-130	2.99	20	
trans-1,3-Dichloropropene	0.0169	0.0010	mg/Kg wet	0.0200		84.7	70-130	0.794	20	
Diethyl Ether	0.0178	0.020	mg/Kg wet	0.0200		89.1	70-130	4.56	20	
Diisopropyl Ether (DIPE)	0.0166	0.0010	mg/Kg wet	0.0200		82.9	70-130	1.09	20	
1,4-Dioxane	0.192	0.10	mg/Kg wet	0.200		96.2	40-160	8.96	20	†
Ethylbenzene	0.0199	0.0020	mg/Kg wet	0.0200		99.4	70-130	0.716	20	
Hexachlorobutadiene	0.0198	0.0020	mg/Kg wet	0.0200		99.2	70-130	0.708	20	
2-Hexanone (MBK)	0.186	0.020	mg/Kg wet	0.200		93.0	40-160	5.58	20	†
Isopropylbenzene (Cumene)	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	3.15	20	
p-Isopropyltoluene (p-Cymene)	0.0188	0.0020	mg/Kg wet	0.0200		94.1	70-130	2.09	20	
Methyl tert-Butyl Ether (MTBE)	0.0146	0.0040	mg/Kg wet	0.0200		73.2	70-130	3.65	20	V-05
Methylene Chloride	0.0179	0.020	mg/Kg wet	0.0200		89.4	70-130	1.01	20	
4-Methyl-2-pentanone (MIBK)	0.187	0.020	mg/Kg wet	0.200		93.7	40-160	2.06	20	†
Naphthalene	0.0165	0.0040	mg/Kg wet	0.0200		82.3	70-130	4.88	20	V-05

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292542 - SW-846 5035										
LCS Dup (B292542-BSD1)										
Prepared & Analyzed: 10/15/21										
n-Propylbenzene	0.0204	0.0020	mg/Kg wet	0.0200		102	70-130	1.90	20	
Styrene	0.0200	0.0020	mg/Kg wet	0.0200		99.8	70-130	3.32	20	
1,1,1,2-Tetrachloroethane	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130	2.41	20	
1,1,2,2-Tetrachloroethane	0.0191	0.0010	mg/Kg wet	0.0200		95.7	70-130	4.65	20	
Tetrachloroethylene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	1.16	20	
Tetrahydrofuran	0.0156	0.010	mg/Kg wet	0.0200		78.2	70-130	10.2	20	
Toluene	0.0190	0.0020	mg/Kg wet	0.0200		95.2	70-130	0.805	20	
1,2,3-Trichlorobenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.7	70-130	1.97	20	
1,2,4-Trichlorobenzene	0.0194	0.0020	mg/Kg wet	0.0200		96.9	70-130	2.89	20	
1,1,1-Trichloroethane	0.0165	0.0020	mg/Kg wet	0.0200		82.5	70-130	2.11	20	
1,1,2-Trichloroethane	0.0185	0.0020	mg/Kg wet	0.0200		92.3	70-130	5.00	20	
Trichloroethylene	0.0185	0.0020	mg/Kg wet	0.0200		92.5	70-130	1.19	20	
Trichlorofluoromethane (Freon 11)	0.0219	0.010	mg/Kg wet	0.0200		110	70-130	0.320	20	
1,2,3-Trichloropropane	0.0180	0.0020	mg/Kg wet	0.0200		89.8	70-130	1.83	20	
1,2,4-Trimethylbenzene	0.0173	0.0020	mg/Kg wet	0.0200		86.3	70-130	2.14	20	
1,3,5-Trimethylbenzene	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130	1.06	20	
Vinyl Chloride	0.0230	0.010	mg/Kg wet	0.0200		115	70-130	0.564	20	
m+p Xylene	0.0361	0.0040	mg/Kg wet	0.0400		90.2	70-130	0.0832	20	
o-Xylene	0.0194	0.0020	mg/Kg wet	0.0200		97.2	70-130	2.22	20	
Surrogate: 1,2-Dichloroethane-d4	0.0448		mg/Kg wet	0.0500		89.6	70-130			
Surrogate: Toluene-d8	0.0508		mg/Kg wet	0.0500		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0495		mg/Kg wet	0.0500		99.0	70-130			

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QUALITY CONTROL
Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292689 - SW-846 3546										
Blank (B292689-BLK1)										
Prepared: 10/18/21 Analyzed: 10/19/21										
Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Anthracene	ND	0.17	mg/Kg wet							
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Surrogate: Nitrobenzene-d5	2.01		mg/Kg wet	3.33		60.2	30-130			
Surrogate: 2-Fluorobiphenyl	2.46		mg/Kg wet	3.33		73.7	30-130			
Surrogate: p-Terphenyl-d14	2.96		mg/Kg wet	3.33		88.8	30-130			
LCS (B292689-BS1)										
Prepared: 10/18/21 Analyzed: 10/19/21										
Acenaphthene	1.17	0.17	mg/Kg wet	1.67		70.1	40-140			
Acenaphthylene	1.34	0.17	mg/Kg wet	1.67		80.5	40-140			
Anthracene	1.35	0.17	mg/Kg wet	1.67		81.1	40-140			
Benzo(a)anthracene	1.30	0.17	mg/Kg wet	1.67		78.2	40-140			
Benzo(a)pyrene	1.42	0.17	mg/Kg wet	1.67		85.5	40-140			
Benzo(b)fluoranthene	1.34	0.17	mg/Kg wet	1.67		80.1	40-140			
Benzo(g,h,i)perylene	1.37	0.17	mg/Kg wet	1.67		82.3	40-140			
Benzo(k)fluoranthene	1.48	0.17	mg/Kg wet	1.67		88.5	40-140			
Chrysene	1.36	0.17	mg/Kg wet	1.67		81.4	40-140			
Dibenz(a,h)anthracene	1.33	0.17	mg/Kg wet	1.67		80.1	40-140			
Fluoranthene	1.22	0.17	mg/Kg wet	1.67		73.4	40-140			
Fluorene	1.30	0.17	mg/Kg wet	1.67		78.0	40-140			
Indeno(1,2,3-cd)pyrene	1.39	0.17	mg/Kg wet	1.67		83.5	40-140			
2-Methylnaphthalene	1.31	0.17	mg/Kg wet	1.67		78.8	40-140			
Naphthalene	1.15	0.17	mg/Kg wet	1.67		69.2	40-140			
Phenanthrene	1.36	0.17	mg/Kg wet	1.67		81.6	40-140			
Pyrene	1.33	0.17	mg/Kg wet	1.67		79.9	40-140			
Surrogate: Nitrobenzene-d5	2.18		mg/Kg wet	3.33		65.5	30-130			
Surrogate: 2-Fluorobiphenyl	2.70		mg/Kg wet	3.33		80.9	30-130			
Surrogate: p-Terphenyl-d14	2.97		mg/Kg wet	3.33		89.2	30-130			

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QUALITY CONTROL
Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch B292689 - SW-846 3546									
LCS Dup (B292689-BSD1)					Prepared: 10/18/21 Analyzed: 10/19/21				
Acenaphthene	1.02	0.17	mg/Kg wet	1.67		61.1 40-140	13.6	30	
Acenaphthylene	1.16	0.17	mg/Kg wet	1.67		69.7 40-140	14.3	30	
Anthracene	1.17	0.17	mg/Kg wet	1.67		70.1 40-140	14.6	30	
Benzo(a)anthracene	1.16	0.17	mg/Kg wet	1.67		69.5 40-140	11.8	30	
Benzo(a)pyrene	1.26	0.17	mg/Kg wet	1.67		75.7 40-140	12.1	30	
Benzo(b)fluoranthene	1.20	0.17	mg/Kg wet	1.67		72.0 40-140	10.6	30	
Benzo(g,h,i)perylene	1.24	0.17	mg/Kg wet	1.67		74.3 40-140	10.1	30	
Benzo(k)fluoranthene	1.30	0.17	mg/Kg wet	1.67		77.8 40-140	12.9	30	
Chrysene	1.20	0.17	mg/Kg wet	1.67		72.3 40-140	11.8	30	
Dibenz(a,h)anthracene	1.19	0.17	mg/Kg wet	1.67		71.2 40-140	11.7	30	
Fluoranthene	1.07	0.17	mg/Kg wet	1.67		64.0 40-140	13.8	30	
Fluorene	1.13	0.17	mg/Kg wet	1.67		67.7 40-140	14.2	30	
Indeno(1,2,3-cd)pyrene	1.22	0.17	mg/Kg wet	1.67		73.4 40-140	12.9	30	
2-Methylnaphthalene	1.15	0.17	mg/Kg wet	1.67		68.9 40-140	13.3	30	
Naphthalene	1.00	0.17	mg/Kg wet	1.67		60.0 40-140	14.2	30	
Phenanthrene	1.19	0.17	mg/Kg wet	1.67		71.4 40-140	13.3	30	
Pyrene	1.18	0.17	mg/Kg wet	1.67		70.5 40-140	12.4	30	
Surrogate: Nitrobenzene-d5	1.91		mg/Kg wet	3.33		57.3 30-130			
Surrogate: 2-Fluorobiphenyl	2.34		mg/Kg wet	3.33		70.1 30-130			
Surrogate: p-Terphenyl-d14	2.68		mg/Kg wet	3.33		80.5 30-130			

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B292766 - SW-846 3546									
Blank (B292766-BLK1)					Prepared: 10/19/21 Analyzed: 10/20/21				
Aldrin	ND	0.0050	mg/Kg wet						
Aldrin [2C]	ND	0.0050	mg/Kg wet						
alpha-BHC	ND	0.0050	mg/Kg wet						
alpha-BHC [2C]	ND	0.0050	mg/Kg wet						
beta-BHC	ND	0.0050	mg/Kg wet						
beta-BHC [2C]	ND	0.0050	mg/Kg wet						
delta-BHC	ND	0.0050	mg/Kg wet						
delta-BHC [2C]	ND	0.0050	mg/Kg wet						
gamma-BHC (Lindane)	ND	0.0020	mg/Kg wet						
gamma-BHC (Lindane) [2C]	ND	0.0020	mg/Kg wet						
Chlordane	ND	0.020	mg/Kg wet						
Chlordane [2C]	ND	0.020	mg/Kg wet						
4,4'-DDD	ND	0.0040	mg/Kg wet						
4,4'-DDD [2C]	ND	0.0040	mg/Kg wet						
4,4'-DDE	ND	0.0040	mg/Kg wet						
4,4'-DDE [2C]	ND	0.0040	mg/Kg wet						
4,4'-DDT	ND	0.0040	mg/Kg wet						
4,4'-DDT [2C]	ND	0.0040	mg/Kg wet						
Dieldrin	ND	0.0040	mg/Kg wet						
Dieldrin [2C]	ND	0.0040	mg/Kg wet						
Endosulfan I	ND	0.0050	mg/Kg wet						
Endosulfan I [2C]	ND	0.0050	mg/Kg wet						
Endosulfan II	ND	0.0080	mg/Kg wet						
Endosulfan II [2C]	ND	0.0080	mg/Kg wet						
Endosulfan Sulfate	ND	0.0080	mg/Kg wet						
Endosulfan Sulfate [2C]	ND	0.0080	mg/Kg wet						
Endrin	ND	0.0080	mg/Kg wet						
Endrin [2C]	ND	0.0080	mg/Kg wet						
Endrin Aldehyde	ND	0.0080	mg/Kg wet						
Endrin Aldehyde [2C]	ND	0.0080	mg/Kg wet						
Endrin Ketone	ND	0.0080	mg/Kg wet						
Endrin Ketone [2C]	ND	0.0080	mg/Kg wet						
Heptachlor	ND	0.0050	mg/Kg wet						
Heptachlor [2C]	ND	0.0050	mg/Kg wet						
Heptachlor Epoxide	ND	0.0050	mg/Kg wet						
Heptachlor Epoxide [2C]	ND	0.0050	mg/Kg wet						
Hexachlorobenzene	ND	0.0060	mg/Kg wet						
Hexachlorobenzene [2C]	ND	0.0060	mg/Kg wet						
Methoxychlor	ND	0.050	mg/Kg wet						
Methoxychlor [2C]	ND	0.050	mg/Kg wet						
Toxaphene	ND	0.10	mg/Kg wet						
Toxaphene [2C]	ND	0.10	mg/Kg wet						
Surrogate: Decachlorobiphenyl	0.174		mg/Kg wet	0.200		86.9	30-150		
Surrogate: Decachlorobiphenyl [2C]	0.177		mg/Kg wet	0.200		88.7	30-150		
Surrogate: Tetrachloro-m-xylene	0.157		mg/Kg wet	0.200		78.6	30-150		
Surrogate: Tetrachloro-m-xylene [2C]	0.169		mg/Kg wet	0.200		84.4	30-150		

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QUALITY CONTROL
Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292766 - SW-846 3546										
LCS (B292766-BS1)										
					Prepared: 10/19/21 Analyzed: 10/20/21					
Aldrin	0.092	0.0050	mg/Kg wet	0.100		91.8	40-140			
Aldrin [2C]	0.095	0.0050	mg/Kg wet	0.100		95.2	40-140			
alpha-BHC	0.084	0.0050	mg/Kg wet	0.100		83.7	40-140			
alpha-BHC [2C]	0.093	0.0050	mg/Kg wet	0.100		92.8	40-140			
beta-BHC	0.085	0.0050	mg/Kg wet	0.100		85.5	40-140			
beta-BHC [2C]	0.089	0.0050	mg/Kg wet	0.100		88.8	40-140			
delta-BHC	0.085	0.0050	mg/Kg wet	0.100		84.7	40-140			
delta-BHC [2C]	0.091	0.0050	mg/Kg wet	0.100		91.0	40-140			
gamma-BHC (Lindane)	0.085	0.0020	mg/Kg wet	0.100		85.0	40-140			
gamma-BHC (Lindane) [2C]	0.093	0.0020	mg/Kg wet	0.100		93.1	40-140			
4,4'-DDD	0.10	0.0040	mg/Kg wet	0.100		102	40-140			
4,4'-DDD [2C]	0.10	0.0040	mg/Kg wet	0.100		103	40-140			
4,4'-DDE	0.098	0.0040	mg/Kg wet	0.100		98.4	40-140			
4,4'-DDE [2C]	0.097	0.0040	mg/Kg wet	0.100		96.9	40-140			
4,4'-DDT	0.10	0.0040	mg/Kg wet	0.100		101	40-140			
4,4'-DDT [2C]	0.10	0.0040	mg/Kg wet	0.100		104	40-140			
Dieldrin	0.097	0.0040	mg/Kg wet	0.100		97.2	40-140			
Dieldrin [2C]	0.097	0.0040	mg/Kg wet	0.100		96.5	40-140			
Endosulfan I	0.092	0.0050	mg/Kg wet	0.100		91.9	40-140			
Endosulfan I [2C]	0.091	0.0050	mg/Kg wet	0.100		90.6	40-140			
Endosulfan II	0.092	0.0080	mg/Kg wet	0.100		91.8	40-140			
Endosulfan II [2C]	0.093	0.0080	mg/Kg wet	0.100		93.5	40-140			
Endosulfan Sulfate	0.091	0.0080	mg/Kg wet	0.100		91.5	40-140			
Endosulfan Sulfate [2C]	0.097	0.0080	mg/Kg wet	0.100		96.7	40-140			
Endrin	0.097	0.0080	mg/Kg wet	0.100		96.8	40-140			
Endrin [2C]	0.10	0.0080	mg/Kg wet	0.100		99.6	40-140			
Endrin Ketone	0.099	0.0080	mg/Kg wet	0.100		98.8	40-140			
Endrin Ketone [2C]	0.099	0.0080	mg/Kg wet	0.100		98.6	40-140			
Heptachlor	0.091	0.0050	mg/Kg wet	0.100		90.7	40-140			
Heptachlor [2C]	0.098	0.0050	mg/Kg wet	0.100		98.1	40-140			
Heptachlor Epoxide	0.090	0.0050	mg/Kg wet	0.100		90.2	40-140			
Heptachlor Epoxide [2C]	0.093	0.0050	mg/Kg wet	0.100		92.9	40-140			
Hexachlorobenzene	0.081	0.0060	mg/Kg wet	0.100		81.1	40-140			
Hexachlorobenzene [2C]	0.086	0.0060	mg/Kg wet	0.100		85.8	40-140			
Methoxychlor	0.098	0.050	mg/Kg wet	0.100		98.2	40-140			
Methoxychlor [2C]	0.10	0.050	mg/Kg wet	0.100		104	40-140			
Surrogate: Decachlorobiphenyl	0.171		mg/Kg wet	0.200		85.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.174		mg/Kg wet	0.200		86.9	30-150			
Surrogate: Tetrachloro-m-xylene	0.151		mg/Kg wet	0.200		75.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.167		mg/Kg wet	0.200		83.6	30-150			
LCS Dup (B292766-BSD1)										
					Prepared: 10/19/21 Analyzed: 10/20/21					
Aldrin	0.095	0.0050	mg/Kg wet	0.100		94.6	40-140	2.94	30	
Aldrin [2C]	0.097	0.0050	mg/Kg wet	0.100		97.4	40-140	2.29	30	
alpha-BHC	0.082	0.0050	mg/Kg wet	0.100		82.2	40-140	1.79	30	
alpha-BHC [2C]	0.090	0.0050	mg/Kg wet	0.100		90.2	40-140	2.85	30	
beta-BHC	0.085	0.0050	mg/Kg wet	0.100		84.7	40-140	0.871	30	
beta-BHC [2C]	0.087	0.0050	mg/Kg wet	0.100		87.2	40-140	1.85	30	
delta-BHC	0.085	0.0050	mg/Kg wet	0.100		85.1	40-140	0.385	30	
delta-BHC [2C]	0.091	0.0050	mg/Kg wet	0.100		90.5	40-140	0.520	30	
gamma-BHC (Lindane)	0.084	0.0020	mg/Kg wet	0.100		84.3	40-140	0.852	30	
gamma-BHC (Lindane) [2C]	0.091	0.0020	mg/Kg wet	0.100		90.8	40-140	2.56	30	

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QUALITY CONTROL
Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292766 - SW-846 3546										
LCS Dup (B292766-BSD1)										
					Prepared: 10/19/21 Analyzed: 10/20/21					
4,4'-DDD	0.11	0.0040	mg/Kg wet	0.100		106	40-140	4.07	30	
4,4'-DDD [2C]	0.11	0.0040	mg/Kg wet	0.100		107	40-140	4.11	30	
4,4'-DDE	0.10	0.0040	mg/Kg wet	0.100		103	40-140	4.69	30	
4,4'-DDE [2C]	0.10	0.0040	mg/Kg wet	0.100		102	40-140	4.91	30	
4,4'-DDT	0.11	0.0040	mg/Kg wet	0.100		105	40-140	4.05	30	
4,4'-DDT [2C]	0.11	0.0040	mg/Kg wet	0.100		109	40-140	4.15	30	
Dieldrin	0.10	0.0040	mg/Kg wet	0.100		101	40-140	3.94	30	
Dieldrin [2C]	0.10	0.0040	mg/Kg wet	0.100		100	40-140	3.58	30	
Endosulfan I	0.096	0.0050	mg/Kg wet	0.100		95.5	40-140	3.82	30	
Endosulfan I [2C]	0.094	0.0050	mg/Kg wet	0.100		93.9	40-140	3.55	30	
Endosulfan II	0.095	0.0080	mg/Kg wet	0.100		95.1	40-140	3.52	30	
Endosulfan II [2C]	0.097	0.0080	mg/Kg wet	0.100		96.6	40-140	3.33	30	
Endosulfan Sulfate	0.094	0.0080	mg/Kg wet	0.100		94.4	40-140	3.14	30	
Endosulfan Sulfate [2C]	0.10	0.0080	mg/Kg wet	0.100		100	40-140	3.60	30	
Endrin	0.10	0.0080	mg/Kg wet	0.100		101	40-140	4.03	30	
Endrin [2C]	0.10	0.0080	mg/Kg wet	0.100		104	40-140	4.16	30	
Endrin Ketone	0.10	0.0080	mg/Kg wet	0.100		103	40-140	3.88	30	
Endrin Ketone [2C]	0.10	0.0080	mg/Kg wet	0.100		103	40-140	4.13	30	
Heptachlor	0.092	0.0050	mg/Kg wet	0.100		92.2	40-140	1.67	30	
Heptachlor [2C]	0.099	0.0050	mg/Kg wet	0.100		98.6	40-140	0.548	30	
Heptachlor Epoxide	0.093	0.0050	mg/Kg wet	0.100		93.2	40-140	3.28	30	
Heptachlor Epoxide [2C]	0.096	0.0050	mg/Kg wet	0.100		95.6	40-140	2.94	30	
Hexachlorobenzene	0.085	0.0060	mg/Kg wet	0.100		85.0	40-140	4.70	30	
Hexachlorobenzene [2C]	0.089	0.0060	mg/Kg wet	0.100		89.1	40-140	3.75	30	
Methoxychlor	0.10	0.050	mg/Kg wet	0.100		102	40-140	4.07	30	
Methoxychlor [2C]	0.11	0.050	mg/Kg wet	0.100		109	40-140	5.14	30	
Surrogate: Decachlorobiphenyl	0.180		mg/Kg wet	0.200		90.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.186		mg/Kg wet	0.200		93.0	30-150			
Surrogate: Tetrachloro-m-xylene	0.161		mg/Kg wet	0.200		80.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.175		mg/Kg wet	0.200		87.4	30-150			
Matrix Spike (B292766-MS1)										
		Source: 21J0808-01			Prepared: 10/19/21 Analyzed: 10/21/21					
Aldrin	0.15	0.17	mg/Kg dry	0.174	ND	83.7	30-150			
Aldrin [2C]	0.15	0.17	mg/Kg dry	0.174	ND	86.4	30-150			
alpha-BHC	0.13	0.17	mg/Kg dry	0.174	ND	73.1	30-150			
alpha-BHC [2C]	0.14	0.17	mg/Kg dry	0.174	ND	79.9	30-150			
beta-BHC	0.15	0.17	mg/Kg dry	0.174	ND	83.6	30-150			
beta-BHC [2C]	0.15	0.17	mg/Kg dry	0.174	ND	87.0	30-150			
delta-BHC	0.12	0.17	mg/Kg dry	0.174	ND	71.8	30-150			
delta-BHC [2C]	0.13	0.17	mg/Kg dry	0.174	ND	75.9	30-150			
gamma-BHC (Lindane)	0.13	0.070	mg/Kg dry	0.174	ND	75.2	30-150			
gamma-BHC (Lindane) [2C]	0.14	0.070	mg/Kg dry	0.174	ND	80.3	30-150			
4,4'-DDD	0.17	0.14	mg/Kg dry	0.174	ND	95.0	30-150			
4,4'-DDD [2C]	0.17	0.14	mg/Kg dry	0.174	ND	95.6	30-150			
4,4'-DDE	0.15	0.14	mg/Kg dry	0.174	ND	88.7	30-150			
4,4'-DDE [2C]	0.15	0.14	mg/Kg dry	0.174	ND	86.6	30-150			
4,4'-DDT	0.14	0.14	mg/Kg dry	0.174	ND	81.1	30-150			
4,4'-DDT [2C]	0.15	0.14	mg/Kg dry	0.174	ND	84.2	30-150			
Dieldrin	0.15	0.14	mg/Kg dry	0.174	ND	87.7	30-150			
Dieldrin [2C]	0.15	0.14	mg/Kg dry	0.174	ND	87.1	30-150			
Endosulfan I	0.15	0.17	mg/Kg dry	0.174	ND	86.8	30-150			
Endosulfan I [2C]	0.15	0.17	mg/Kg dry	0.174	ND	88.4	30-150			

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QUALITY CONTROL
Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292766 - SW-846 3546										
Matrix Spike (B292766-MS1)	Source: 21J0808-01			Prepared: 10/19/21 Analyzed: 10/21/21						
Endosulfan II	0.15	0.28	mg/Kg dry	0.174	ND	84.4	30-150			
Endosulfan II [2C]	0.15	0.28	mg/Kg dry	0.174	ND	86.9	30-150			
Endosulfan Sulfate	0.15	0.28	mg/Kg dry	0.174	ND	87.8	30-150			
Endosulfan Sulfate [2C]	0.15	0.28	mg/Kg dry	0.174	ND	87.5	30-150			
Endrin	0.15	0.28	mg/Kg dry	0.174	ND	86.7	30-150			
Endrin [2C]	0.16	0.28	mg/Kg dry	0.174	ND	89.5	30-150			
Endrin Ketone	0.16	0.28	mg/Kg dry	0.174	ND	92.7	30-150			
Endrin Ketone [2C]	0.16	0.28	mg/Kg dry	0.174	ND	90.8	30-150			
Heptachlor	0.15	0.17	mg/Kg dry	0.174	ND	84.4	30-150			
Heptachlor [2C]	0.15	0.17	mg/Kg dry	0.174	ND	88.5	30-150			
Heptachlor Epoxide	0.15	0.17	mg/Kg dry	0.174	ND	86.4	30-150			
Heptachlor Epoxide [2C]	0.15	0.17	mg/Kg dry	0.174	ND	87.0	30-150			
Hexachlorobenzene	0.15	0.21	mg/Kg dry	0.174	ND	85.4	30-150			
Hexachlorobenzene [2C]	0.15	0.21	mg/Kg dry	0.174	ND	86.2	30-150			
Methoxychlor	0.16	1.7	mg/Kg dry	0.174	ND	92.8	30-150			
Methoxychlor [2C]	0.17	1.7	mg/Kg dry	0.174	ND	97.0	30-150			
Surrogate: Decachlorobiphenyl	0.320		mg/Kg dry	0.348		91.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.305		mg/Kg dry	0.348		87.8	30-150			
Surrogate: Tetrachloro-m-xylene	0.259		mg/Kg dry	0.348		74.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.275		mg/Kg dry	0.348		79.1	30-150			
Matrix Spike Dup (B292766-MSD1)	Source: 21J0808-01			Prepared: 10/19/21 Analyzed: 10/21/21						
Aldrin	0.14	0.17	mg/Kg dry	0.174	ND	81.8	30-150	2.32	30	
Aldrin [2C]	0.15	0.17	mg/Kg dry	0.174	ND	84.2	30-150	2.53	30	
alpha-BHC	0.13	0.17	mg/Kg dry	0.174	ND	72.6	30-150	0.686	30	
alpha-BHC [2C]	0.14	0.17	mg/Kg dry	0.174	ND	78.8	30-150	1.36	30	
beta-BHC	0.14	0.17	mg/Kg dry	0.174	ND	78.5	30-150	6.32	30	
beta-BHC [2C]	0.15	0.17	mg/Kg dry	0.174	ND	85.8	30-150	1.34	30	
delta-BHC	0.12	0.17	mg/Kg dry	0.174	ND	69.7	30-150		30	
delta-BHC [2C]	0.13	0.17	mg/Kg dry	0.174	ND	74.1	30-150		30	
gamma-BHC (Lindane)	0.13	0.070	mg/Kg dry	0.174	ND	73.5	30-150	2.37	30	
gamma-BHC (Lindane) [2C]	0.14	0.070	mg/Kg dry	0.174	ND	79.2	30-150	1.38	30	
4,4'-DDD	0.16	0.14	mg/Kg dry	0.174	ND	92.9	30-150	2.21	30	
4,4'-DDD [2C]	0.16	0.14	mg/Kg dry	0.174	ND	92.2	30-150	3.68	30	
4,4'-DDE	0.15	0.14	mg/Kg dry	0.174	ND	87.0	30-150	1.87	30	
4,4'-DDE [2C]	0.15	0.14	mg/Kg dry	0.174	ND	86.7	30-150	0.0923	30	
4,4'-DDT	0.14	0.14	mg/Kg dry	0.174	ND	79.4	30-150	2.09	30	
4,4'-DDT [2C]	0.14	0.14	mg/Kg dry	0.174	ND	82.3	30-150	2.33	30	
Dieldrin	0.15	0.14	mg/Kg dry	0.174	ND	85.2	30-150	2.87	30	
Dieldrin [2C]	0.15	0.14	mg/Kg dry	0.174	ND	85.3	30-150	2.14	30	
Endosulfan I	0.15	0.17	mg/Kg dry	0.174	ND	85.3	30-150	1.77	30	
Endosulfan I [2C]	0.15	0.17	mg/Kg dry	0.174	ND	87.0	30-150	1.64	30	
Endosulfan II	0.14	0.28	mg/Kg dry	0.174	ND	82.7	30-150	2.04	30	
Endosulfan II [2C]	0.15	0.28	mg/Kg dry	0.174	ND	83.9	30-150	3.49	30	
Endosulfan Sulfate	0.15	0.28	mg/Kg dry	0.174	ND	86.6	30-150	1.47	30	
Endosulfan Sulfate [2C]	0.15	0.28	mg/Kg dry	0.174	ND	86.4	30-150	1.29	30	
Endrin	0.15	0.28	mg/Kg dry	0.174	ND	83.8	30-150	3.40	30	
Endrin [2C]	0.15	0.28	mg/Kg dry	0.174	ND	86.2	30-150	3.73	30	
Endrin Ketone	0.16	0.28	mg/Kg dry	0.174	ND	91.8	30-150	0.975	30	
Endrin Ketone [2C]	0.16	0.28	mg/Kg dry	0.174	ND	89.7	30-150	1.20	30	
Heptachlor	0.14	0.17	mg/Kg dry	0.174	ND	82.2	30-150	2.64	30	
Heptachlor [2C]	0.15	0.17	mg/Kg dry	0.174	ND	86.5	30-150	2.28	30	

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QUALITY CONTROL
Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292766 - SW-846 3546
Matrix Spike Dup (B292766-MSD1)
Source: 21J0808-01

Prepared: 10/19/21 Analyzed: 10/21/21

Heptachlor Epoxide	0.15	0.17	mg/Kg dry	0.174	ND	84.4	30-150	2.37	30	
Heptachlor Epoxide [2C]	0.15	0.17	mg/Kg dry	0.174	ND	85.3	30-150	1.88	30	
Hexachlorobenzene	0.14	0.21	mg/Kg dry	0.174	ND	81.7	30-150	4.52	30	
Hexachlorobenzene [2C]	0.15	0.21	mg/Kg dry	0.174	ND	83.6	30-150	3.11	30	
Methoxychlor	0.15	1.7	mg/Kg dry	0.174	ND	88.5	30-150		30	
Methoxychlor [2C]	0.16	1.7	mg/Kg dry	0.174	ND	94.3	30-150		30	
Surrogate: Decachlorobiphenyl	0.311		mg/Kg dry	0.348		89.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.299		mg/Kg dry	0.348		86.0	30-150			
Surrogate: Tetrachloro-m-xylene	0.254		mg/Kg dry	0.348		73.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.273		mg/Kg dry	0.348		78.6	30-150			

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QUALITY CONTROL
Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292768 - SW-846 3546										
Blank (B292768-BLK1)										
Prepared: 10/19/21 Analyzed: 10/21/21										
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	0.219		mg/Kg wet	0.200		109	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.225		mg/Kg wet	0.200		112	30-150			
Surrogate: Tetrachloro-m-xylene	0.188		mg/Kg wet	0.200		94.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.145		mg/Kg wet	0.200		72.4	30-150			
LCS (B292768-BS1)										
Prepared: 10/19/21 Analyzed: 10/21/21										
Aroclor-1016	0.16	0.020	mg/Kg wet	0.200		80.2	40-140			
Aroclor-1016 [2C]	0.14	0.020	mg/Kg wet	0.200		72.1	40-140			
Aroclor-1260	0.18	0.020	mg/Kg wet	0.200		90.2	40-140			
Aroclor-1260 [2C]	0.19	0.020	mg/Kg wet	0.200		94.8	40-140			
Surrogate: Decachlorobiphenyl	0.227		mg/Kg wet	0.200		114	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.228		mg/Kg wet	0.200		114	30-150			
Surrogate: Tetrachloro-m-xylene	0.198		mg/Kg wet	0.200		99.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.152		mg/Kg wet	0.200		76.0	30-150			
LCS Dup (B292768-BSD1)										
Prepared: 10/19/21 Analyzed: 10/21/21										
Aroclor-1016	0.16	0.020	mg/Kg wet	0.200		81.6	40-140	1.73	30	
Aroclor-1016 [2C]	0.15	0.020	mg/Kg wet	0.200		74.2	40-140	2.93	30	
Aroclor-1260	0.18	0.020	mg/Kg wet	0.200		89.3	40-140	1.05	30	
Aroclor-1260 [2C]	0.18	0.020	mg/Kg wet	0.200		90.5	40-140	4.62	30	
Surrogate: Decachlorobiphenyl	0.214		mg/Kg wet	0.200		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.221		mg/Kg wet	0.200		110	30-150			
Surrogate: Tetrachloro-m-xylene	0.193		mg/Kg wet	0.200		96.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.151		mg/Kg wet	0.200		75.3	30-150			

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QUALITY CONTROL
Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292768 - SW-846 3546										
Matrix Spike (B292768-MS1)		Source: 21J0808-01		Prepared: 10/19/21 Analyzed: 10/21/21						
Aroclor-1016	0.30	0.14	mg/Kg dry	0.348	ND	85.4	40-140			
Aroclor-1016 [2C]	0.26	0.14	mg/Kg dry	0.348	ND	74.8	40-140			
Aroclor-1260	0.29	0.14	mg/Kg dry	0.348	ND	82.4	40-140			
Aroclor-1260 [2C]	0.27	0.14	mg/Kg dry	0.348	ND	78.2	40-140			
Surrogate: Decachlorobiphenyl	0.317		mg/Kg dry	0.348		91.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.320		mg/Kg dry	0.348		92.0	30-150			
Surrogate: Tetrachloro-m-xylene	0.309		mg/Kg dry	0.348		88.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.270		mg/Kg dry	0.348		77.7	30-150			
Matrix Spike Dup (B292768-MSD1)		Source: 21J0808-01		Prepared: 10/19/21 Analyzed: 10/21/21						
Aroclor-1016	0.28	0.14	mg/Kg dry	0.348	ND	80.5	40-140	5.90	30	
Aroclor-1016 [2C]	0.26	0.14	mg/Kg dry	0.348	ND	75.4	40-140	0.860	30	
Aroclor-1260	0.29	0.14	mg/Kg dry	0.348	ND	84.1	40-140	2.05	30	
Aroclor-1260 [2C]	0.27	0.14	mg/Kg dry	0.348	ND	77.1	40-140	1.48	30	
Surrogate: Decachlorobiphenyl	0.296		mg/Kg dry	0.348		85.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.302		mg/Kg dry	0.348		87.0	30-150			
Surrogate: Tetrachloro-m-xylene	0.286		mg/Kg dry	0.348		82.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.254		mg/Kg dry	0.348		73.2	30-150			

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QUALITY CONTROL
Herbicides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292484 - SW-846 8151										
Blank (B292484-BLK1)										
Prepared: 10/14/21 Analyzed: 10/16/21										
2,4-D	ND	24	µg/kg wet							
2,4-D [2C]	ND	24	µg/kg wet							
2,4-DB	ND	24	µg/kg wet							R-05
2,4-DB [2C]	ND	24	µg/kg wet							R-05
2,4,5-TP (Silvex)	ND	2.4	µg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	2.4	µg/kg wet							
2,4,5-T	ND	2.4	µg/kg wet							
2,4,5-T [2C]	ND	2.4	µg/kg wet							
Dalapon	ND	60	µg/kg wet							L-04
Dalapon [2C]	ND	60	µg/kg wet							L-04
Dicamba	ND	2.4	µg/kg wet							
Dicamba [2C]	ND	2.4	µg/kg wet							
Dichloroprop	ND	24	µg/kg wet							
Dichloroprop [2C]	ND	24	µg/kg wet							
Dinoseb	ND	12	µg/kg wet							R-05
Dinoseb [2C]	ND	12	µg/kg wet							R-05
MCPA	ND	2400	µg/kg wet							
MCPA [2C]	ND	2400	µg/kg wet							
MCPP	ND	2400	µg/kg wet							R-05
MCPP [2C]	ND	2400	µg/kg wet							R-05
Surrogate: 2,4-Dichlorophenylacetic acid	50.5		µg/kg wet	95.2		53.0	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	50.0		µg/kg wet	95.2		52.5	30-150			
LCS (B292484-BS1)										
Prepared: 10/14/21 Analyzed: 10/16/21										
2,4-D	81.8	25	µg/kg wet	125		65.5	40-140			
2,4-D [2C]	89.1	25	µg/kg wet	125		71.3	40-140			
2,4-DB	66.6	25	µg/kg wet	125		53.3	40-140			R-05
2,4-DB [2C]	62.8	25	µg/kg wet	125		50.3	40-140			R-05
2,4,5-TP (Silvex)	8.79	2.5	µg/kg wet	12.5		70.3	40-140			
2,4,5-TP (Silvex) [2C]	9.15	2.5	µg/kg wet	12.5		73.2	40-140			
2,4,5-T	8.23	2.5	µg/kg wet	12.5		65.8	40-140			
2,4,5-T [2C]	8.12	2.5	µg/kg wet	12.5		64.9	40-140			
Dalapon	109	62	µg/kg wet	312		35.0 *	40-140			L-04
Dalapon [2C]	100	62	µg/kg wet	312		32.0 *	40-140			L-04
Dicamba	8.22	2.5	µg/kg wet	12.5		65.7	40-140			
Dicamba [2C]	8.62	2.5	µg/kg wet	12.5		69.0	40-140			
Dichloroprop	87.3	25	µg/kg wet	125		69.8	40-140			
Dichloroprop [2C]	89.7	25	µg/kg wet	125		71.7	40-140			
Dinoseb	8.98	12	µg/kg wet	62.5		14.4	2.28-30.2			R-05
Dinoseb [2C]	10.2	12	µg/kg wet	62.5		16.3	2.56-33.2			R-05
MCPA	8460	2500	µg/kg wet	12500		67.6	40-140			
MCPA [2C]	8390	2500	µg/kg wet	12500		67.1	40-140			
MCPP	9550	2500	µg/kg wet	12500		76.4	40-140			R-05
MCPP [2C]	9060	2500	µg/kg wet	12500		72.5	40-140			R-05
Surrogate: 2,4-Dichlorophenylacetic acid	61.5		µg/kg wet	100		61.5	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	62.4		µg/kg wet	100		62.4	30-150			

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QUALITY CONTROL
Herbicides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292484 - SW-846 8151										
LCS Dup (B292484-BSD1)										
					Prepared: 10/14/21 Analyzed: 10/16/21					
2,4-D	63.7	25	µg/kg wet	125		51.0	40-140	24.9	30	
2,4-D [2C]	67.0	25	µg/kg wet	125		53.6	40-140	28.3	30	
2,4-DB	38.8	25	µg/kg wet	125		31.0	* 40-140	52.9	* 30	L-07A
2,4-DB [2C]	38.7	25	µg/kg wet	125		31.0	* 40-140	47.5	* 30	L-07A
2,4,5-TP (Silvex)	6.81	2.5	µg/kg wet	12.5		54.4	40-140	25.5	30	
2,4,5-TP (Silvex) [2C]	7.01	2.5	µg/kg wet	12.5		56.1	40-140	26.5	30	
2,4,5-T	6.29	2.5	µg/kg wet	12.5		50.3	40-140	26.7	30	
2,4,5-T [2C]	6.81	2.5	µg/kg wet	12.5		54.5	40-140	17.5	30	
Dalapon	66.2	62	µg/kg wet	312		21.2	* 40-140	49.2	* 30	L-04
Dalapon [2C]	60.9	62	µg/kg wet	312		19.5	* 40-140	48.6	* 30	L-04
Dicamba	6.64	2.5	µg/kg wet	12.5		53.2	40-140	21.2	30	
Dicamba [2C]	6.71	2.5	µg/kg wet	12.5		53.7	40-140	24.9	30	
Dichloroprop	69.3	25	µg/kg wet	125		55.5	40-140	22.9	30	
Dichloroprop [2C]	70.1	25	µg/kg wet	125		56.1	40-140	24.5	30	
Dinoseb	5.98	12	µg/kg wet	62.5		9.57	2.28-30.2	40.1	* 30	R-05
Dinoseb [2C]	7.03	12	µg/kg wet	62.5		11.2	2.56-33.2	36.8	* 30	R-05
MCPA	6360	2500	µg/kg wet	12500		50.9	40-140	28.3	30	
MCPA [2C]	6310	2500	µg/kg wet	12500		50.5	40-140	28.3	30	
MCPP	6900	2500	µg/kg wet	12500		55.2	40-140	32.2	* 30	R-05
MCPP [2C]	6490	2500	µg/kg wet	12500		51.9	40-140	33.0	* 30	R-05
Surrogate: 2,4-Dichlorophenylacetic acid	43.4		µg/kg wet	100		43.4	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	43.5		µg/kg wet	100		43.5	30-150			

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QUALITY CONTROL
Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B292780 - SW-846 3546
Blank (B292780-BLK1)

Prepared: 10/19/21 Analyzed: 10/21/21

C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	3.43		mg/Kg wet	5.00		68.6	40-140			
Surrogate: o-Terphenyl (OTP)	3.75		mg/Kg wet	5.00		75.1	40-140			
Surrogate: 2-Bromonaphthalene	4.98		mg/Kg wet	5.00		99.6	40-140			
Surrogate: 2-Fluorobiphenyl	4.89		mg/Kg wet	5.00		97.7	40-140			

LCS (B292780-BS1)

Prepared: 10/19/21 Analyzed: 10/21/21

C9-C18 Aliphatics	24.5	10	mg/Kg wet	30.0		81.7	40-140			
C19-C36 Aliphatics	39.7	10	mg/Kg wet	40.0		99.2	40-140			
Unadjusted C11-C22 Aromatics	83.0	10	mg/Kg wet	85.0		97.6	40-140			
Acenaphthene	4.30	0.10	mg/Kg wet	5.00		86.0	40-140			
Acenaphthylene	4.06	0.10	mg/Kg wet	5.00		81.2	40-140			
Anthracene	4.64	0.10	mg/Kg wet	5.00		92.7	40-140			
Benzo(a)anthracene	4.78	0.10	mg/Kg wet	5.00		95.6	40-140			
Benzo(a)pyrene	4.63	0.10	mg/Kg wet	5.00		92.5	40-140			
Benzo(b)fluoranthene	5.03	0.10	mg/Kg wet	5.00		101	40-140			
Benzo(g,h,i)perylene	4.23	0.10	mg/Kg wet	5.00		84.5	40-140			
Benzo(k)fluoranthene	3.78	0.10	mg/Kg wet	5.00		75.6	40-140			
Chrysene	4.47	0.10	mg/Kg wet	5.00		89.4	40-140			
Dibenz(a,h)anthracene	4.50	0.10	mg/Kg wet	5.00		89.9	40-140			
Fluoranthene	4.54	0.10	mg/Kg wet	5.00		90.8	40-140			
Fluorene	4.41	0.10	mg/Kg wet	5.00		88.2	40-140			
Indeno(1,2,3-cd)pyrene	4.21	0.10	mg/Kg wet	5.00		84.2	40-140			
2-Methylnaphthalene	4.04	0.10	mg/Kg wet	5.00		80.8	40-140			
Naphthalene	3.82	0.10	mg/Kg wet	5.00		76.5	40-140			
Phenanthrene	4.65	0.10	mg/Kg wet	5.00		93.0	40-140			
Pyrene	4.63	0.10	mg/Kg wet	5.00		92.5	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	3.98		mg/Kg wet	5.00		79.6	40-140			

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QUALITY CONTROL
Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292780 - SW-846 3546										
LCS (B292780-BS1)					Prepared: 10/19/21 Analyzed: 10/21/21					
Surrogate: o-Terphenyl (OTP)	4.25		mg/Kg wet	5.00		84.9	40-140			
Surrogate: 2-Bromonaphthalene	5.80		mg/Kg wet	5.00		116	40-140			
Surrogate: 2-Fluorobiphenyl	5.78		mg/Kg wet	5.00		116	40-140			
LCS Dup (B292780-BSD1)					Prepared: 10/19/21 Analyzed: 10/21/21					
C9-C18 Aliphatics	23.8	10	mg/Kg wet	30.0		79.2	40-140	3.13	25	
C19-C36 Aliphatics	37.4	10	mg/Kg wet	40.0		93.4	40-140	6.01	25	
Unadjusted C11-C22 Aromatics	78.3	10	mg/Kg wet	85.0		92.1	40-140	5.79	25	
Acenaphthene	4.03	0.10	mg/Kg wet	5.00		80.6	40-140	6.52	25	
Acenaphthylene	3.83	0.10	mg/Kg wet	5.00		76.7	40-140	5.71	25	
Anthracene	4.26	0.10	mg/Kg wet	5.00		85.3	40-140	8.38	25	
Benzo(a)anthracene	4.43	0.10	mg/Kg wet	5.00		88.5	40-140	7.72	25	
Benzo(a)pyrene	4.31	0.10	mg/Kg wet	5.00		86.2	40-140	7.05	25	
Benzo(b)fluoranthene	4.67	0.10	mg/Kg wet	5.00		93.5	40-140	7.39	25	
Benzo(g,h,i)perylene	3.92	0.10	mg/Kg wet	5.00		78.4	40-140	7.52	25	
Benzo(k)fluoranthene	3.51	0.10	mg/Kg wet	5.00		70.2	40-140	7.29	25	
Chrysene	4.15	0.10	mg/Kg wet	5.00		83.0	40-140	7.51	25	
Dibenz(a,h)anthracene	4.19	0.10	mg/Kg wet	5.00		83.8	40-140	7.01	25	
Fluoranthene	4.16	0.10	mg/Kg wet	5.00		83.1	40-140	8.85	25	
Fluorene	4.09	0.10	mg/Kg wet	5.00		81.8	40-140	7.45	25	
Indeno(1,2,3-cd)pyrene	3.92	0.10	mg/Kg wet	5.00		78.3	40-140	7.26	25	
2-Methylnaphthalene	3.89	0.10	mg/Kg wet	5.00		77.9	40-140	3.63	25	
Naphthalene	3.76	0.10	mg/Kg wet	5.00		75.3	40-140	1.58	25	
Phenanthrene	4.27	0.10	mg/Kg wet	5.00		85.4	40-140	8.57	25	
Pyrene	4.25	0.10	mg/Kg wet	5.00		85.0	40-140	8.53	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	3.74		mg/Kg wet	5.00		74.8	40-140			
Surrogate: o-Terphenyl (OTP)	3.85		mg/Kg wet	5.00		77.0	40-140			
Surrogate: 2-Bromonaphthalene	5.37		mg/Kg wet	5.00		107	40-140			
Surrogate: 2-Fluorobiphenyl	5.35		mg/Kg wet	5.00		107	40-140			

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QUALITY CONTROL
Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch B292553 - SW-846 3050B									
Blank (B292553-BLK1)					Prepared: 10/15/21 Analyzed: 10/16/21				
Arsenic	ND	3.3	mg/Kg wet						
Cadmium	ND	0.33	mg/Kg wet						
Chromium	ND	0.65	mg/Kg wet						
Copper	ND	0.65	mg/Kg wet						
Lead	ND	0.49	mg/Kg wet						
Zinc	ND	0.65	mg/Kg wet						
LCS (B292553-BS1)					Prepared: 10/15/21 Analyzed: 10/16/21				
Arsenic	156	9.8	mg/Kg wet	170		91.7	82.9-117.6		
Cadmium	90.2	0.98	mg/Kg wet	89.5		101	82.8-117.3		
Chromium	98.1	2.0	mg/Kg wet	101		97.1	82.1-117.8		
Copper	151	2.0	mg/Kg wet	149		101	83.9-116.1		
Lead	133	1.5	mg/Kg wet	140		95.0	82.9-117.1		
Zinc	216	2.0	mg/Kg wet	228		94.7	80.7-118.9		
LCS Dup (B292553-BSD1)					Prepared: 10/15/21 Analyzed: 10/16/21				
Arsenic	167	9.8	mg/Kg wet	170		98.2	82.9-117.6	6.78	30
Cadmium	91.6	0.98	mg/Kg wet	89.5		102	82.8-117.3	1.55	20
Chromium	107	2.0	mg/Kg wet	101		106	82.1-117.8	8.96	30
Copper	163	2.0	mg/Kg wet	149		109	83.9-116.1	7.48	30
Lead	141	1.5	mg/Kg wet	140		101	82.9-117.1	5.76	30
Zinc	233	2.0	mg/Kg wet	228		102	80.7-118.9	7.73	30
Reference (B292553-SRM1) MRL CHECK					Prepared: 10/15/21 Analyzed: 10/16/21				
Lead	0.498	0.49	mg/Kg wet	0.493		101	80-120		
Batch B292557 - SW-846 7471									
Blank (B292557-BLK1)					Prepared: 10/15/21 Analyzed: 10/19/21				
Mercury	ND	0.026	mg/Kg wet						
LCS (B292557-BS1)					Prepared: 10/15/21 Analyzed: 10/19/21				
Mercury	18.9	0.75	mg/Kg wet	15.6		121	59.3-140.4		
LCS Dup (B292557-BSD1)					Prepared: 10/15/21 Analyzed: 10/19/21				
Mercury	20.6	0.75	mg/Kg wet	15.6		132	59.3-140.4	8.60	20

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QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B292564 - SW 846 9060A										
Blank (B292564-BLK1)				Prepared & Analyzed: 10/19/21						
Total Organic Carbon	ND	100	mg/Kg							
LCS (B292564-BS1)				Prepared & Analyzed: 10/19/21						
Total Organic Carbon	784	100	mg/Kg	750		105	64.9-118			
LCS Dup (B292564-BSD1)				Prepared & Analyzed: 10/19/21						
Total Organic Carbon	726	100	mg/Kg	750		96.8	64.9-118	7.64	16.9	

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BREAKDOWN REPORT

Lab Sample ID: S064496-PEM1 **Analyzed:** 10/20/2021

Column Number: 1
Analyte **% Breakdown**
4,4'-DDT [1] 1.42
Endrin [1] 3.07

Column Number: 2
Analyte **% Breakdown**
4,4'-DDT [2] 1.39
Endrin [2] 3.38

BREAKDOWN REPORT

Lab Sample ID: S064496-PEM2 **Analyzed:** 10/21/2021

Column Number: 1
Analyte **% Breakdown**
4,4'-DDT [1] 1.80
Endrin [1] 2.53

Column Number: 2
Analyte **% Breakdown**
4,4'-DDT [2] 1.70
Endrin [2] 2.91

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS

SW-846 8151A

Lab Sample ID: B292484-BS1 Date(s) Analyzed: 10/16/2021 10/16/2021
 Instrument ID (1): ECD 8 Instrument ID (2): ECD 8
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
2,4,5-T	1	16.757	0.000	0.000	8.23	
	2	16.738	0.000	0.000	8.12	1.0
2,4,5-TP (Silvex)	1	16.242	0.000	0.000	8.79	
	2	15.978	0.000	0.000	9.15	3.9
2,4-D	1	14.359	0.000	0.000	81.8	
	2	14.196	0.000	0.000	89.1	8.3
2,4-DB	1	17.232	0.000	0.000	66.6	
	2	17.184	0.000	0.000	62.8	6.5
Dalapon	1	4.937	0.000	0.000	109	
	2	4.561	0.000	0.000	100	9.5
Dicamba	1	12.187	0.000	0.000	8.22	
	2	11.928	0.000	0.000	8.62	5.0
Dichloroprop	1	13.843	0.000	0.000	87.3	
	2	13.500	0.000	0.000	89.7	3.1
Dinoseb	1	17.813	0.000	0.000	8.98	
	2	17.374	0.000	0.000	10.2	12.5
MCPA	1	13.030	0.000	0.000	8460	
	2	12.782	0.000	0.000	8390	1.3
MCPD	1	12.689	0.000	0.000	9550	
	2	12.267	0.000	0.000	9060	5.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS Dup

SW-846 8151A

Lab Sample ID: B292484-BSD1 Date(s) Analyzed: 10/16/2021 10/16/2021
 Instrument ID (1): ECD 8 Instrument ID (2): ECD 8
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
2,4,5-T	1	16.759	0.000	0.000	6.29	
	2	16.739	0.000	0.000	6.81	7.8
2,4,5-TP (Silvex)	1	16.245	0.000	0.000	6.81	
	2	15.979	0.000	0.000	7.01	3.0
2,4-D	1	14.364	0.000	0.000	63.7	
	2	14.197	0.000	0.000	67.0	4.6
2,4-DB	1	17.232	0.000	0.000	38.8	
	2	17.185	0.000	0.000	38.7	0.8
Dalapon	1	4.936	0.000	0.000	66.2	
	2	4.559	0.000	0.000	60.9	8.0
Dicamba	1	12.191	0.000	0.000	6.64	
	2	11.928	0.000	0.000	6.71	1.7
Dichloroprop	1	13.845	0.000	0.000	69.3	
	2	13.501	0.000	0.000	70.1	1.6
Dinoseb	1	17.813	0.000	0.000	5.98	
	2	17.374	0.000	0.000	7.03	15.8
MCPA	1	13.027	0.000	0.000	6360	
	2	12.777	0.000	0.000	6310	1.4
MCPD	1	12.687	0.000	0.000	6900	
	2	12.263	0.000	0.000	6490	6.1

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS

SW-846 8081B

Lab Sample ID: B292766-BS1 Date(s) Analyzed: 10/20/2021 10/20/2021

Instrument ID (1): ECD2 Instrument ID (2): ECD2

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.739	0.000	0.000	0.10	
	2	7.709	0.000	0.000	0.10	0.0
4,4'-DDE	1	7.274	0.000	0.000	0.098	
	2	7.260	0.000	0.000	0.097	1.0
4,4'-DDT	1	7.955	0.000	0.000	0.10	
	2	7.955	0.000	0.000	0.10	0.0
Aldrin	1	6.584	0.000	0.000	0.092	
	2	6.471	0.000	0.000	0.095	3.2
alpha-BHC	1	5.806	0.000	0.000	0.084	
	2	5.702	0.000	0.000	0.093	10.2
beta-BHC	1	6.083	0.000	0.000	0.085	
	2	5.991	0.000	0.000	0.089	3.4
delta-BHC	1	6.212	0.000	0.000	0.085	
	2	6.194	0.000	0.000	0.091	6.8
Dieldrin	1	7.519	0.000	0.000	0.097	
	2	7.388	0.000	0.000	0.097	0.0
Endosulfan I	1	7.336	0.000	0.000	0.092	
	2	7.179	0.000	0.000	0.091	1.1
Endosulfan II	1	7.878	0.000	0.000	0.092	
	2	7.790	0.000	0.000	0.093	1.1
Endosulfan Sulfate	1	8.474	0.000	0.000	0.091	
	2	8.241	0.000	0.000	0.097	5.3
Endrin	1	7.702	0.000	0.000	0.097	
	2	7.625	0.000	0.000	0.10	3.1
Endrin Ketone	1	8.649	0.000	0.000	0.099	
	2	8.583	0.000	0.000	0.099	0.0
gamma-BHC (Lindane)	1	6.026	0.000	0.000	0.085	
	2	5.938	0.000	0.000	0.093	9.0
Heptachlor	1	6.363	0.000	0.000	0.091	
	2	6.242	0.000	0.000	0.098	7.4
Heptachlor Epoxide	1	7.033	0.000	0.000	0.090	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS

SW-846 8081B

Lab Sample ID: B292766-BS1 Date(s) Analyzed: 10/20/2021 10/20/2021
 Instrument ID (1): ECD2 Instrument ID (2): ECD2
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	6.885	0.000	0.000	0.093	3.3
Hexachlorobenzene	1	5.690	0.000	0.000	0.081	
	2	5.611	0.000	0.000	0.086	6.0
Methoxychlor	1	8.291	0.000	0.000	0.098	
	2	8.430	0.000	0.000	0.10	2.0

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS Dup

SW-846 8081B

Lab Sample ID: B292766-BSD1 Date(s) Analyzed: 10/20/2021 10/20/2021
 Instrument ID (1): ECD2 Instrument ID (2): ECD2
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.738	0.000	0.000	0.11	
	2	7.709	0.000	0.000	0.11	0.0
4,4'-DDE	1	7.273	0.000	0.000	0.10	
	2	7.261	0.000	0.000	0.10	0.0
4,4'-DDT	1	7.955	0.000	0.000	0.11	
	2	7.954	0.000	0.000	0.11	0.0
Aldrin	1	6.584	0.000	0.000	0.095	
	2	6.472	0.000	0.000	0.097	2.1
alpha-BHC	1	5.806	0.000	0.000	0.082	
	2	5.703	0.000	0.000	0.090	9.3
beta-BHC	1	6.083	0.000	0.000	0.085	
	2	5.992	0.000	0.000	0.087	2.3
delta-BHC	1	6.212	0.000	0.000	0.085	
	2	6.195	0.000	0.000	0.091	6.8
Dieldrin	1	7.519	0.000	0.000	0.10	
	2	7.389	0.000	0.000	0.10	0.0
Endosulfan I	1	7.335	0.000	0.000	0.096	
	2	7.180	0.000	0.000	0.094	2.1
Endosulfan II	1	7.876	0.000	0.000	0.095	
	2	7.790	0.000	0.000	0.097	2.1
Endosulfan Sulfate	1	8.473	0.000	0.000	0.094	
	2	8.240	0.000	0.000	0.10	6.2
Endrin	1	7.701	0.000	0.000	0.10	
	2	7.625	0.000	0.000	0.10	0.0
Endrin Ketone	1	8.648	0.000	0.000	0.10	
	2	8.583	0.000	0.000	0.10	0.0
gamma-BHC (Lindane)	1	6.026	0.000	0.000	0.084	
	2	5.939	0.000	0.000	0.091	8.0
Heptachlor	1	6.363	0.000	0.000	0.092	
	2	6.243	0.000	0.000	0.099	7.3
Heptachlor Epoxide	1	7.032	0.000	0.000	0.093	

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS Dup

SW-846 8081B

Lab Sample ID: B292766-BSD1 Date(s) Analyzed: 10/20/2021 10/20/2021

Instrument ID (1): ECD2 Instrument ID (2): ECD2

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	6.886	0.000	0.000	0.096	3.2
Hexachlorobenzene	1	5.689	0.000	0.000	0.085	
	2	5.611	0.000	0.000	0.089	4.6
Methoxychlor	1	8.291	0.000	0.000	0.10	
	2	8.429	0.000	0.000	0.11	9.5

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

Matrix Spike

SW-846 8081B

Lab Sample ID: B292766-MS1 Date(s) Analyzed: 10/21/2021 10/21/2021
 Instrument ID (1): ECD2 Instrument ID (2): ECD2
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.737	0.000	0.000	0.17	
	2	7.708	0.000	0.000	0.17	0.0
4,4'-DDE	1	7.273	0.000	0.000	0.15	
	2	7.259	0.000	0.000	0.15	0.0
4,4'-DDT	1	7.953	0.000	0.000	0.14	
	2	7.953	0.000	0.000	0.15	6.9
Aldrin	1	6.582	0.000	0.000	0.15	
	2	6.470	0.000	0.000	0.15	0.0
alpha-BHC	1	5.805	0.000	0.000	0.13	
	2	5.702	0.000	0.000	0.14	7.4
beta-BHC	1	6.082	0.000	0.000	0.15	
	2	5.991	0.000	0.000	0.15	0.0
delta-BHC	1	6.210	0.000	0.000	0.12	
	2	6.194	0.000	0.000	0.13	0.0
Dieldrin	1	7.517	0.000	0.000	0.15	
	2	7.387	0.000	0.000	0.15	0.0
Endosulfan I	1	7.334	0.000	0.000	0.15	
	2	7.179	0.000	0.000	0.15	0.0
Endosulfan II	1	7.875	0.000	0.000	0.15	
	2	7.788	0.000	0.000	0.15	0.0
Endosulfan Sulfate	1	8.472	0.000	0.000	0.15	
	2	8.239	0.000	0.000	0.15	0.0
Endrin	1	7.701	0.000	0.000	0.15	
	2	7.624	0.000	0.000	0.16	6.5
Endrin Ketone	1	8.646	0.000	0.000	0.16	
	2	8.581	0.000	0.000	0.16	0.0
gamma-BHC (Lindane)	1	6.025	0.000	0.000	0.13	
	2	5.938	0.000	0.000	0.14	7.4
Heptachlor	1	6.361	0.000	0.000	0.15	
	2	6.241	0.000	0.000	0.15	0.0
Heptachlor Epoxide	1	7.032	0.000	0.000	0.15	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

Matrix Spike

SW-846 8081B

Lab Sample ID: B292766-MS1 Date(s) Analyzed: 10/21/2021 10/21/2021
 Instrument ID (1): ECD2 Instrument ID (2): ECD2
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	6.885	0.000	0.000	0.15	0.0
Hexachlorobenzene	1	5.688	0.000	0.000	0.15	
	2	5.610	0.000	0.000	0.15	0.0
Methoxychlor	1	8.290	0.000	0.000	0.16	
	2	8.427	0.000	0.000	0.17	6.1

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

Matrix Spike Dup

SW-846 8081B

Lab Sample ID: B292766-MSD1 Date(s) Analyzed: 10/21/2021 10/21/2021
 Instrument ID (1): ECD2 Instrument ID (2): ECD2
 GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.736	0.000	0.000	0.16	
	2	7.708	0.000	0.000	0.16	0.0
4,4'-DDE	1	7.271	0.000	0.000	0.15	
	2	7.259	0.000	0.000	0.15	0.0
4,4'-DDT	1	7.954	0.000	0.000	0.14	
	2	7.952	0.000	0.000	0.14	0.0
Aldrin	1	6.582	0.000	0.000	0.14	
	2	6.471	0.000	0.000	0.15	6.9
alpha-BHC	1	5.805	0.000	0.000	0.13	
	2	5.702	0.000	0.000	0.14	7.4
beta-BHC	1	6.082	0.000	0.000	0.14	
	2	5.991	0.000	0.000	0.15	6.9
delta-BHC	1	6.211	0.000	0.000	0.12	
	2	6.194	0.000	0.000	0.13	8.0
Dieldrin	1	7.517	0.000	0.000	0.15	
	2	7.387	0.000	0.000	0.15	0.0
Endosulfan I	1	7.333	0.000	0.000	0.15	
	2	7.179	0.000	0.000	0.15	0.0
Endosulfan II	1	7.875	0.000	0.000	0.14	
	2	7.788	0.000	0.000	0.15	6.9
Endosulfan Sulfate	1	8.472	0.000	0.000	0.15	
	2	8.239	0.000	0.000	0.15	0.0
Endrin	1	7.700	0.000	0.000	0.15	
	2	7.624	0.000	0.000	0.15	0.0
Endrin Ketone	1	8.647	0.000	0.000	0.16	
	2	8.582	0.000	0.000	0.16	0.0
gamma-BHC (Lindane)	1	6.025	0.000	0.000	0.13	
	2	5.938	0.000	0.000	0.14	7.4
Heptachlor	1	6.362	0.000	0.000	0.14	
	2	6.242	0.000	0.000	0.15	6.9
Heptachlor Epoxide	1	7.031	0.000	0.000	0.15	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

Matrix Spike

SW-846 8082A

 Lab Sample ID: B292768-MS1 Date(s) Analyzed: 10/21/2021 10/21/2021

 Instrument ID (1): ECD 9 Instrument ID (2): ECD 9

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.30	
	2	0.000	0.000	0.000	0.26	14.3
Aroclor-1260	1	0.000	0.000	0.000	0.29	
	2	0.000	0.000	0.000	0.27	7.1

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-03	Elevated reporting limit due to matrix interference.
L-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-07A	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
O-32	A dilution was performed as part of the standard analytical procedure.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
MADEP EPH rev 2.1 in Soil	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(a)anthracene	CT,NC,ME,NH-P
Benzo(a)pyrene	CT,NC,ME,NH-P
Benzo(b)fluoranthene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Benzo(k)fluoranthene	CT,NC,ME,NH-P
Chrysene	CT,NC,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
Indeno(1,2,3-cd)pyrene	CT,NC,ME,NH-P
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
MADEP EPH rev 2.1 in Water	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(a)anthracene	CT,NC,ME,NH-P
Benzo(a)pyrene	CT,NC,ME,NH-P
Benzo(b)fluoranthene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Benzo(k)fluoranthene	CT,NC,ME,NH-P
Chrysene	CT,NC,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
Indeno(1,2,3-cd)pyrene	CT,NC,ME,NH-P
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
SW 846 9060A in Soil	
Total Organic Carbon	NY,CT,ME,VA,NH
SW-846 6010D in Soil	

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 6010D in Soil	
Arsenic	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,AIHA,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 8081B in Soil	
Aldrin	CT,NC,NH,NY,ME,VA
Aldrin [2C]	CT,NC,NH,NY,ME,VA
alpha-BHC	CT,NC,NH,NY,ME,VA
alpha-BHC [2C]	CT,NC,NH,NY,ME,VA
beta-BHC	CT,NC,NH,NY,ME,VA
beta-BHC [2C]	CT,NC,NH,NY,ME,VA
delta-BHC	CT,NC,NH,NY,ME,VA
delta-BHC [2C]	CT,NC,NH,NY,ME,VA
gamma-BHC (Lindane)	CT,NC,NH,NY,ME,VA
gamma-BHC (Lindane) [2C]	CT,NC,NH,NY,ME,VA
Chlordane	CT,NC,NH,NY,ME,VA
Chlordane [2C]	CT,NC,NH,NY,ME,VA
4,4'-DDD	CT,NC,NH,NY,ME,VA
4,4'-DDD [2C]	CT,NC,NH,NY,ME,VA
4,4'-DDE	CT,NC,NH,NY,ME,VA
4,4'-DDE [2C]	CT,NC,NH,NY,ME,VA
4,4'-DDT	CT,NC,NH,NY,ME,VA
4,4'-DDT [2C]	CT,NC,NH,NY,ME,VA
Dieldrin	CT,NC,NH,NY,ME,VA
Dieldrin [2C]	CT,NC,NH,NY,ME,VA
Endosulfan I	CT,NC,NH,NY,ME,VA
Endosulfan I [2C]	CT,NC,NH,NY,ME,VA
Endosulfan II	CT,NC,NH,NY,ME,VA
Endosulfan II [2C]	CT,NC,NH,NY,ME,VA
Endosulfan Sulfate	CT,NC,NH,NY,ME,VA
Endosulfan Sulfate [2C]	CT,NC,NH,NY,ME,VA
Endrin	CT,NC,NH,NY,ME,VA
Endrin [2C]	CT,NC,NH,NY,ME,VA
Endrin Ketone	NC
Endrin Ketone [2C]	NC
Heptachlor	CT,NC,NH,NY,ME,VA
Heptachlor [2C]	CT,NC,NH,NY,ME,VA
Heptachlor Epoxide	CT,NC,NH,NY,ME,VA
Heptachlor Epoxide [2C]	CT,NC,NH,NY,ME,VA
Hexachlorobenzene	NC
Hexachlorobenzene [2C]	NC
Methoxychlor	CT,NC,NH,NY,ME,VA

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
SW-846 8081B in Soil	
Methoxychlor [2C]	CT,NC,NH,NY,ME,VA
SW-846 8081B in Water	
Aldrin	CT,NC,NH,NY,ME,VA
Aldrin [2C]	CT,NC,NH,NY,ME,VA
alpha-BHC	CT,NC,NH,NY,ME,VA
alpha-BHC [2C]	CT,NC,NH,NY,ME,VA
beta-BHC	CT,NC,NH,NY,ME,VA
beta-BHC [2C]	CT,NC,NH,NY,ME,VA
delta-BHC	CT,NC,NH,NY,ME,VA
delta-BHC [2C]	CT,NC,NH,NY,ME,VA
gamma-BHC (Lindane)	CT,NC,NH,NY,ME,VA
gamma-BHC (Lindane) [2C]	CT,NC,NH,NY,ME,VA
Chlordane	CT,NC,NH,NY,ME,VA
Chlordane [2C]	CT,NC,NH,NY,ME,VA
4,4'-DDD	CT,NC,NH,NY,ME,VA
4,4'-DDD [2C]	CT,NC,NH,NY,ME,VA
4,4'-DDE	CT,NC,NH,NY,ME,VA
4,4'-DDE [2C]	CT,NC,NH,NY,ME,VA
4,4'-DDT	CT,NC,NH,NY,ME,VA
4,4'-DDT [2C]	CT,NC,NH,NY,ME,VA
Dieldrin	CT,NC,NH,NY,ME,VA
Dieldrin [2C]	CT,NC,NH,NY,ME,VA
Endosulfan I	CT,NC,NH,NY,ME,VA
Endosulfan I [2C]	CT,NC,NH,NY,ME,VA
Endosulfan II	CT,NC,NH,NY,ME,VA
Endosulfan II [2C]	CT,NC,NH,NY,ME,VA
Endosulfan Sulfate	CT,NC,NH,NY,ME,VA
Endosulfan Sulfate [2C]	CT,NC,NH,NY,ME,VA
Endrin	CT,NC,NH,NY,ME,VA
Endrin [2C]	CT,NC,NH,NY,ME,VA
Endrin Ketone	NC
Endrin Ketone [2C]	NC
Heptachlor	CT,NC,NH,NY,ME,VA
Heptachlor [2C]	CT,NC,NH,NY,ME,VA
Heptachlor Epoxide	CT,NC,NH,NY,ME,VA
Heptachlor Epoxide [2C]	CT,NC,NH,NY,ME,VA
Hexachlorobenzene	NC
Hexachlorobenzene [2C]	NC
Methoxychlor	CT,NC,NH,NY,ME,VA
Methoxychlor [2C]	CT,NC,NH,NY,ME,VA
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,NC,ME,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232	CT,NH,NY,NC,ME,VA,PA

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8082A in Soil</i>	
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1262	NH,NY,NC,ME,VA,PA
Aroclor-1262 [2C]	NH,NY,NC,ME,VA,PA
Aroclor-1268	NH,NY,NC,ME,VA,PA
Aroclor-1268 [2C]	NH,NY,NC,ME,VA,PA
<i>SW-846 8082A in Water</i>	
Aroclor-1016	CT,NH,NY,NC,ME,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1262	NH,NY,NC,ME,VA,PA
Aroclor-1262 [2C]	NH,NY,NC,ME,VA,PA
Aroclor-1268	NH,NY,NC,ME,VA,PA
Aroclor-1268 [2C]	NH,NY,NC,ME,VA,PA
<i>SW-846 8151A in Soil</i>	
2,4-D	NY,ME,NC,NH,VA,CT
2,4-D [2C]	NY,ME,NC,NH,VA,CT
2,4-DB	NY,ME,NC,NH,VA,CT
2,4-DB [2C]	NY,ME,NC,NH,VA,CT
2,4,5-TP (Silvex)	NY,ME,NC,NH,VA,CT
2,4,5-TP (Silvex) [2C]	NY,ME,NC,NH,VA,CT
2,4,5-T	NY,ME,NC,NH,VA,CT
2,4,5-T [2C]	NY,ME,NC,NH,VA,CT
Dalapon	NY,ME,NC,NH,VA,CT
Dalapon [2C]	NY,ME,NC,NH,VA,CT
Dicamba	NY,ME,NC,NH,VA,CT
Dicamba [2C]	NY,ME,NC,NH,VA,CT
Dichloroprop	NY,ME,NC,NH,VA,CT

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8151A in Soil</i>	
Dichloroprop [2C]	NY,ME,NC,NH,VA,CT
Dinoseb	NY,ME,NC,NH,VA,CT
Dinoseb [2C]	NY,ME,NC,NH,VA,CT
MCPA	NY,ME,NC,NH,VA,CT
MCPA [2C]	NY,ME,NC,NH,VA,CT
MCPP	NY,ME,NC,NH,VA,CT
MCPP [2C]	NY,ME,NC,NH,VA,CT
<i>SW-846 8151A in Water</i>	
2,4-D	ME,NC,NH,CT,NY,VA
2,4-D [2C]	ME,NC,NH,CT,NY,VA
2,4-DB	ME,NC,NH,CT,NY,VA
2,4-DB [2C]	ME,NC,NH,CT,NY,VA
2,4,5-TP (Silvex)	ME,NC,NH,CT,NY,VA
2,4,5-TP (Silvex) [2C]	ME,NC,NH,CT,NY,VA
2,4,5-T	ME,NC,NH,CT,NY,VA
2,4,5-T [2C]	ME,NC,NH,CT,NY,VA
Dalapon	ME,NC,NH,CT,NY,VA
Dalapon [2C]	ME,NC,NH,CT,NY,VA
Dicamba	ME,NC,NH,CT,NY,VA
Dicamba [2C]	ME,NC,NH,CT,NY,VA
Dichloroprop	ME,NC,NH,CT,NY,VA
Dichloroprop [2C]	ME,NC,NH,CT,NY,VA
Dinoseb	ME,NC,NH,CT,NY,VA
Dinoseb [2C]	ME,NC,NH,CT,NY,VA
MCPA	NC,CT
MCPA [2C]	NC,CT
MCPP	NC,CT
MCPP [2C]	NC,CT
<i>SW-846 8260D in Soil</i>	
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260D in Soil</i>	
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NY
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
1,4-Dioxane	NY
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NH,NY
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NY
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260D in Soil</i>	
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME
<i>SW-846 8270E in Soil</i>	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA
<i>SW-846 8270E in Water</i>	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



FUSS & O'NEILL
 (860) 646-2469 • www.FandO.com

- 146 Hartford Road, Manchester, CT 06040
- 56 Quarry Road, Trumbull, CT 06611
- 1419 Richland Street, Columbia, SC 29201

- 78 Interstate Drive, West Springfield, MA 01089
- 98 Myrtle Street, #502, North Quincy, MA 02171
- 317 Iron Horse Way, Suite 204, Providence, RI 02908

80 Washington Street, Suite 301, Poughkeepsie, NY

CHAIN-OF-CUSTODY RECORD

41960

2150808

Turnaround

- 24-Hour* 72-Hour* Other _____ (days)
- 48-Hour* Standard (____ days) *Surcharge Applies

PROJECT NAME

PROJECT LOCATION

PROJECT NUMBER

LABORATORY

MVP Grant
 20170390, V30

20170390, V30

LABORATORY

REPORT TO: Matt Hissone (mkh@scannedbeds.com) Analysis Request

INVOICE TO:

P.O. No.: 20170390, V30

Sampler's Signature: *[Signature]* Date: 10/14/12

Source Codes:
 MW=Monitoring Well
 SW=Surface Water

PT=Potable Water
 ST=Stormwater

T=Treatment Facility
 W=Waste A=Air

S=Soil B=Sediment
 C=Concrete

X=Other _____

Item No.	Transfer Check				Sample Number	Source Code	Date Sampled	Time Sampled
	1	2	3	4				
1	X				1543211012-04 B	10/14/12	13:20	
2								
3								
4								

Containers
 Plastic - H₂O, 250 ml 500 ml 1000 ml
 Plastic - HNO₃, 250 ml 500 ml 1000 ml
 Plastic - NaOH, 250 ml 500 ml 1000 ml
 Glass Amber () ml As₂S₃ HCl
 Water VOA Val, As₂S₃ HCl
 Other: 6/1/02
 Glass Soil Container () or (Na₂SO₃)
 Soil VOA Val, water
 Soil VOA Val, methanol
 Other: 6/1/02
 Water VOA Val, As₂S₃ HCl
 Plastic - As₂S₃, 250 ml 500 ml 1000 ml
 Plastic - H₂SO₄, 250 ml 500 ml 1000 ml
 Plastic - HNO₃, 250 ml 500 ml 1000 ml
 Plastic - NaOH, 250 ml 500 ml 1000 ml

Transfer number	Relinquished By	Accepted By	Date	Time
1	<i>[Signature]</i>		10/14/12	13:20
2	A. Fraser		10/14/12	13:20
3	A. Fraser		10/14/12	16:40
4			10/14/12	16:40

Charge Exceptions: CT Tax Exempt QA/QC Other _____
 _____ Duplicates _____ Blanks (Item Nos: _____)

Reporting and Detection Limit Requirements: RCP Deliverables MCP CAM Cert.
 Additional Comments: *[Handwritten notes]*

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Fuss + O'Neill

Received By UR Date 10-14-21 Time 1640

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 2.4
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? F

Is there enough Volume? T

Is there Headspace where applicable? NA

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? NA

Who was notified? _____

Who was notified? _____

Who was notified? _____

MS/MSD? F

Is splitting samples required? F

On COC? F

Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-	1	250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-	2	Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test, a Pace Analytical Laboratory	Project #: 21J0808
Project Location: Hadley, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

21J0808-01

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ()	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A ()	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ()	6860 Perchlorate CAM VIII B ()
8270 SVOC CAM II B ()	7010 Metals CAM III C ()	MassDEP VPH CAM IV C ()	8081 Pesticides CAM V B (X)	7196 Hex Cr CAM VI B ()	MassDEP APH CAM IX A ()
6010 Metals CAM III A (X)	6020 Metals CAM III D ()	MassDEP EPH CAM IV B (X)	8151 Herbicides CAM V C (X)	8330 Explosives CAM VIII A ()	TO-15 VOC CAM IX B ()

Affirmative response to Questions A through F is 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No ¹
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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
----------	---	--

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹

¹All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Lisa Worthington Position: Technical Representative
 Printed Name: Lisa A. Worthington Date: 10/21/21



195 Frances Avenue
 Cranston RI, 02910
 Phone: (401)-467-6454
 Fax: (401)-467-2398
thielsch.com
Let's Build a Solid Foundation

Client Information:
 Fuss & O'Neill
 North Quincy, MA
 PM: Matt Kissane
 Assigned By: Matt Kissane
 Collected By: Client

Project Information:
South Hadley
South Hadley, MA
 F&O Project Number: 20170390.V30
 Summary Page: 1 of 1
 Report Date: 10.21.2021

LABORATORY TESTING DATA SHEET, Report No.: 7421-K-B014

Material Source	Sample No.	Depth (Ft)	Laboratory No.	Identification Tests								Proctor / CBR / Permeability Tests							Laboratory Log and Soil Description		
				As Received Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	G _s	Dry unit wt. pcf	Test Water Content %	γ_d MAX (pcf) W _{opt} (%)	γ_d MAX (pcf) W _{opt} (%) (Corr.)	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"		Permeability cm/sec	
				D2216	D4318		D6913			D2974	D854			D1557							
Sediment	1543211012-04	N/A	21-S-B308	64.2			0.0	80.0	20.0											Dark Brown silty sand (SM)	

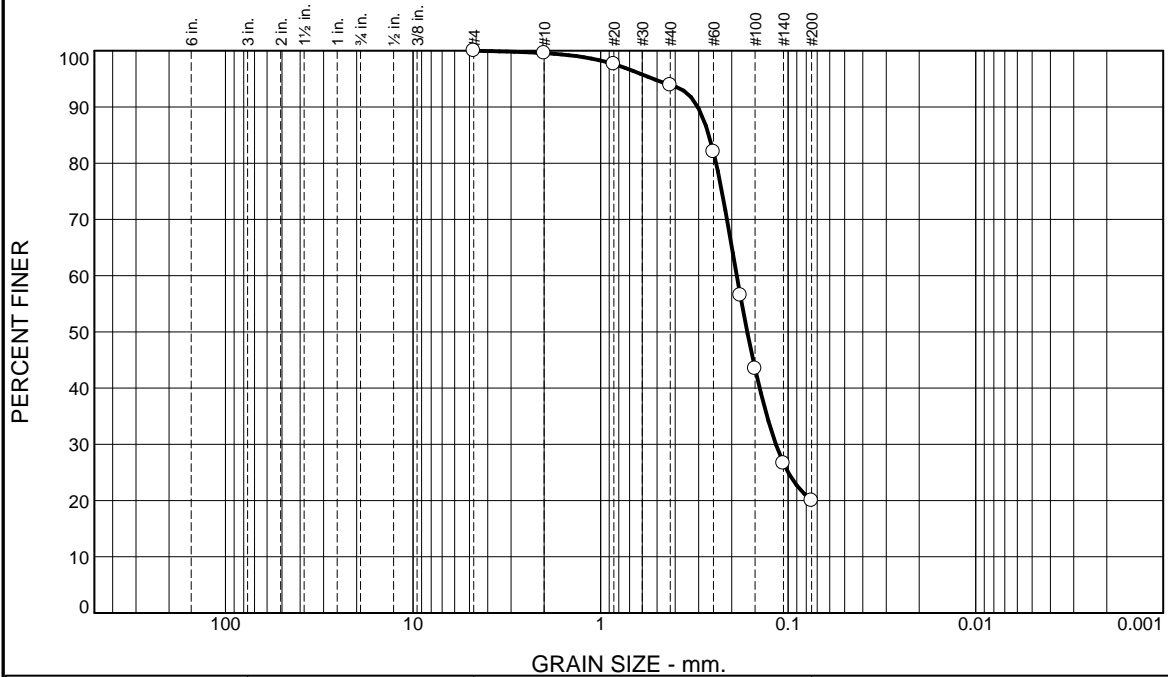
Date Received: 10.13.21

Reviewed By: *Christopher M. Cohen*

Date Reviewed: 10.21.21

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	5.7	73.9	20.0	

Test Results (D6913 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.6		
#20	97.6		
#40	93.9		
#60	82.0		
#80	56.5		
#100	43.5		
#140	26.7		
#200	20.0		

* (no specification provided)

Material Description

Dark Brown silty sand (SM)

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D₉₀= 0.3030 D₈₅= 0.2643 D₆₀= 0.1879
D₅₀= 0.1651 D₃₀= 0.1162 D₁₅=
D₁₀= C_u= C_c=

Remarks

Sample received with standing water.

Date Received: 10/13/21 Date Tested: 10/20/21

Tested By: DN

Checked By: Christina Colman

Title: Laboratory Coordinator

Source of Sample: Sediment
Sample Number: 1543211012-04

Date Sampled:

Thielsch Engineering Inc. Cranston, RI	Client: Fuss & O'Neill Project: South Hadley, MA Project No: 20170390.V30
Figure 21-S-B308	