

TECHNICAL MEMORANDUM

DATE December 15, 2021

Project No. 20449741

TO Mr. Tim Merritt, PE
Stantec

CC Cameron Stuart (Golder)

FROM Cody Johnson, PE (Golder)

EMAIL cody_johnson@golder.com

**RE: MACHIAS DYKE BRIDGE PRELIMINARY BENEFICIAL USE SCREENING
POTENTIAL DREDGE MATERIAL SAMPLE RESULTS**

Dear Mr. Merritt:

Golder Associates USA Inc. (Golder), a member of WSP, is pleased to provide this summary of analytical data for potential dredge material samples (samples) collected from the Machias Dyke Bridge site for potential beneficial use of dredge material in compliance with Maine Administrative Code (MAC) Chapter 418 - Beneficial Use of Solid Wastes.

Background

On August 2 and 3, 2021, Golder collected five samples from the Middle River and one sample from the Machias river in the locations shown on the attached Figure 1. The purpose of the sampling was to provide preliminary screening data to evaluate dredge materials that may be removed during construction for potential beneficial use.

Sample Results

The samples were collected by Golder while aboard a Stantec-provided and operated boat. Samples TR2-SS-01(0-1.2), TR3-SS-01(0-1.45), TR4-SS-01(0-1.3), TR5-SS-01(0-1.3), and SW-SS-01(0-1.45) were collected using a Universal Corer made by Aquatic Research Instruments.

The samples were submitted under standard chain-of-custody procedures to Eastern Analytical of Concord, New Hampshire for analysis of the following parameters, which are specified as required under Maine Administrative Code (MAC) Chapter 418 Section 06-096-418-7 – Reduced Procedures for Select Beneficial Use Activities:

- Polynuclear aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Method 8270D
- Polychlorinated biphenyls (PCBs) by EPA Method 8082A (samples TR2-SS-01(0-1.2) and SW-SS-01(0-1.45) only)
- Total Resource Conservation and Recovery Act (RCRA) 5 Metals (arsenic, cadmium, chromium, lead, and mercury) by EPA Method 6020
- Polychlorinated dibenzodioxins and polychlorinated dibenzofurans by EPA Method 8290 (samples TR3-SS-01(0-1.45) and SW-SS-01(0-1.45) only)

And the following additional parameters:

- Hexavalent chromium (CrVI) by EPA Method SW7196A
- Particle Size Distribution by American Society for Testing and Materials (ASTM) D 422 and D 1140

The analytical laboratory results are summarized in Table 1 and the full analytical laboratory report is included as an attachment. The results were compared against the screening levels for beneficial use under the MAC Chapter Section 096-418-7(A)(3) and (4), and 096-418-7(B)(3) and (4), for beneficial use of dewatered dredge materials construction fill and beach nourishment fill, respectively.

The analytical laboratory results indicated that PAHs, PCBs, CrVI, cadmium, and mercury were not detected above the laboratory reporting limit in any of the samples analyzed. The reporting limit for each of these parameters was lower than their respective screening and beneficial fill use criteria. The following analytes were detected in one or more of the samples analyzed:

- Arsenic was detected in every sample at concentrations ranging from 8.3 milligrams per kilogram (mg/kg) to 13 mg/kg. These concentrations are below the beneficial fill use level of 16 mg/kg.
- Chromium was detected in every sample at concentrations ranging from 25 mg/kg to 34 mg/kg. These concentrations are all below the screening level of 10,000 mg/kg and the hazardous waste screening level of 100 mg/kg specified under 096-418-7(A)(4)
- Lead was detected in every sample at concentrations ranging from 11 mg/kg to 22 mg/kg. These concentrations are all below the screening level of 200 mg/kg and the hazardous waste screening level of 100 mg/kg specified under 096-418-7(A)(4)
- Various polychlorinated dibenzodioxins and polychlorinated dibenzofurans were detected above reporting levels in the two samples analyzed. The laboratory reported both the total individual congener concentrations and the toxicity equivalents (TEQ)-adjusted concentrations for the samples of 2.25 nanograms per kilogram (ng/kg) for TR3-SS-01(0-1.45) and 6.08 ng/kg for SW-SS-01(0-1.45). These concentrations are below the screening level of 55.8 ng/kg and the beneficial fill use level of 55.8 picograms per kilogram (55,800 ng/kg).
- Percent fines (i.e. grain sizes passing the #200 sieve) for the samples ranged from a minimum of 94.8% to a maximum of 100%.

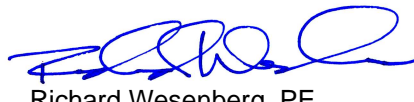
Conclusions

Based on these results, the potential dredge material characterized by these samples could be considered for beneficial use under 096-418-7(A) as dewatered dredged materials construction fill as long as it is not used in residential settings, playgrounds, or school yards, and is completely and permanently covered by a concrete or asphalt paved surface, or by 6 inches of a compacted soil material (per 096-418-7(A)(1)). The high percent fines levels would preclude its use as beach nourishment fill under 096-418-7(B)(3).

Golder Associates Inc.



Cody Johnson, PE
Senior Project Engineer



Richard Wesenberg, PE
Principal and Practice Leader

CMJ/RAW/bjb

Attachments: Figure 1 Sample Locations
 Table 1 Analytical Sample Results
 Attachment: Analytical Laboratory Report

[https://golderassociates.sharepoint.com/sites/106321/project files/6 deliverables/2021 deliverables/final dredge material tech memo/machias sediment tm \(12-10-21\).docx](https://golderassociates.sharepoint.com/sites/106321/project%20files/6%20deliverables/2021%20deliverables/final%20dredge%20material%20tech%20memo/machias%20sediment%20tm%20(12-10-21).docx)



LEGEND

- Sediment Sampling Location

NOTE(S)

REFERENCE(S)

- COORDINATE SYSTEM: NAD 1983 STATEPLANE MAINE WEST FIPS 1802 FEET
- IMAGERY © 2021 MICROSOFT CORPORATION © 2021 MAXAR © CNES (2021) DISTRIBUTION AIRBUS DS

CLIENT

STANTEC
482 PAYNE ROAD, SCARBOROUGH COURT
SCARBOROUGH, MAINE 04074-8929

PROJECT

MACHIAS DYKE BRIDGE CULVERT REPLACEMENT
MACHIAS, MAINE
MAINEDOT WIN 16714.00

TITLE

SAMPLE LOCATIONS

CONSULTANT	YYYY-MM-DD	12/10/2021
GOLDER MEMBER OF WSP	DESIGNED	CJS
	PREPARED	TBH
	REVIEWED	CJS
	APPROVED	-

PROJECT NO. 20449741 **CONTROL** - **REV.** - **FIGURE** 1

B:\MEDOT\Machias09_PROD\20449741_A4_Machias09_PROD\20449741-0004-16-0002.mxd

1in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS I B

Table 1: Analytical Sample Results

Sample Location	Beneficial Use of De-watered Dredge Material Standards ¹	TR2-SS-01 (0-1.2)	TR3-SS-01 (0-1.45)	TR4-SS-01 (0-1.3)	TR5-SS-01 (0-1.3)	SW-SS-01 (0-1.45)
Polynuclear Aromatic Hydrocarbons (mg/kg)²						
Benz[a]anthracene	13	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Benzo[b]fluoranthene	13	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Benzo[k]fluoranthene	134	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Benzo[a]pyrene	1.3	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Chrysene	1,340	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Dibenz[a,h]anthracene	1.3	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Indeno[1,2,3-c,d]pyrene	13	< 0.5	< 0.5	< 0.7	< 0.6	< 0.6
Total Metals (mg/kg)						
Arsenic, Total	16	9.0	8.3	13	12	11
Cadmium, Total	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium, Total	NE	27	25	34	32	31
Chromium, Hexvalent	3.6	< 0.62	< 0.64	< 0.82	< 0.76	< 0.72
Lead, Total	200	11	13	22	20	20
Mercury, Total	27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Polychlorinated Biphenyls (mg/kg)						
PCB-1016	2.7	< 0.03	NA	NA	NA	< 0.03
PCB-1221		< 0.03				< 0.03
PCB-1232		< 0.03				< 0.03
PCB-1242		< 0.03				< 0.03
PCB-1248		< 0.03				< 0.03
PCB-1254		< 0.03				< 0.03
PCB-1260		< 0.03				< 0.03
PCB-1262		< 0.03				< 0.03
PCB-1268		< 0.03				< 0.03
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans (ng/kg)²						
Total TEQ Dioxins	55,800	NA	2.25	NA	NA	6.08
Grain Size Analysis						
Percent Gravel	NE	0.3	0.0	3.4	0.0	0.0
Percent Sand	NE	4.1	1.0	14.5	0.0	1.3
Percent Fines	NE	95.6	99.0	82.1	100.0	98.7

Notes:

¹ MAC Chapter 418 Sections 096-418-7(A)(3) and 096-418-7(B)(3)² Only results for parameters with standards under Section 096-418-7(A)(3) are shown. See Attached laboratory analytical report for complete set of results.Results with "<" indicate the analyte was not detected above the laboratory reporting limit provided following the less than sig **Bold** values indicate the parameter was detected at a concentration exceeding the laboratory reporting limit.

mg/kg = milligrams per kilogram

ng/kg = nanogram per kilogram

NE = standard not established

NA = not analyzed for this parameter

TEQ = Toxicity Equivalents

Cameron Stuart
Golder Associates, Inc.
670 N. Commercial St., Suite 103
Manchester, NH 03101



Laboratory Report for:

Eastern Analytical, Inc. ID: 230238
Client Identification: Stantec Machias | 20449741
Date Received: 8/5/2021

Enclosed are the analytical results per the Chain of Custody for sample(s) in the referenced project. All analyses were performed in accordance with our QA/QC Program, NELAP and other applicable state requirements. All quality control criteria was within acceptance criteria unless noted on the report pages. Results are for the exclusive use of the client named on this report and will not be released to a third party without consent.

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the written approval of the laboratory.

The following standard abbreviations and conventions apply to all EAI reports:

- < : "less than" followed by the reporting limit
- > : "greater than" followed by the reporting limit
- %R : % Recovery

Certifications:

Eastern Analytical, Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012), New York (12072), West Virginia (9910C) and Alabama (41620). Please refer to our website at www.easternanalytical.com for a copy of our certificates and accredited parameters.


References:

- EPA 600/4-79-020, 1983
- Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd edition or noted revision year.
- Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- Hach Water Analysis Handbook, 4th edition, 1992

If you have any questions regarding the results contained within, please feel free to contact customer service. Unless otherwise requested, we will dispose of the sample(s) 6 weeks from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,


Lorraine Olashaw, Lab Director

9.22.21
Date



SAMPLE CONDITIONS PAGE

EAI ID#: 230238

Client: **Golder Associates, Inc.**

Client Designation: **Stantec Machias | 20449741**

Temperature upon receipt (°C): 0.9

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date/Time Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
230238.01	SH-SS-01	8/5/21	8/2/21 17:00	soil		Adheres to Sample Acceptance Policy
230238.02	TR2-SS-01 (0-1.2)	8/5/21	8/3/21 12:50	soil	59.8	Adheres to Sample Acceptance Policy
230238.03	TR3-SS-01 (0-1.45)	8/5/21	8/3/21 08:25	soil	59.1	Adheres to Sample Acceptance Policy
230238.04	TR4-SS-01 (0-1.3)	8/5/21	8/2/21 15:40	soil	45.7	Adheres to Sample Acceptance Policy
230238.05	TR5-SS-01 (0-1.3)	8/5/21	8/2/21 13:10	soil	50.5	Adheres to Sample Acceptance Policy
230238.06	SW-SS-01 (0-1.45)	8/5/21	8/3/21 14:00	soil	52.6	Adheres to Sample Acceptance Policy

All results contained in this report relate only to the above listed samples.

Unless otherwise noted:

- Hold times, preservation, container types, and sample conditions adhered to EPA Protocol.
- Solid samples are reported on a dry weight basis, unless otherwise noted. pH/Corrosivity, Flashpoint, Ignitability, Paint Filter, Conductivity and Specific Gravity are always reported on an "as received" basis.
- Analysis of pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite were performed at the laboratory outside of the recommended 15 minute hold time.
- Samples collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures.



LABORATORY REPORT

EAI ID#: **230238**

Client: **Golder Associates, Inc.**

Client Designation: **Stantec Machias | 20449741**

Sample ID:	TR2-SS-01 (0-1.2)	TR3-SS-01 (0-1.45)	TR4-SS-01 (0-1.3)	TR5-SS-01 (0-1.3)
Lab Sample ID:	230238.02	230238.03	230238.04	230238.05
Matrix:	soil	soil	soil	soil
Date Sampled:	8/3/21	8/3/21	8/2/21	8/2/21
Date Received:	8/5/21	8/5/21	8/5/21	8/5/21
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/6/21	8/6/21	8/6/21	8/6/21
Date of Analysis:	8/6/21	8/6/21	8/6/21	8/6/21
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	8	7	10	9
Naphthalene	< 0.5	< 0.5	< 0.7	< 0.6
2-Methylnaphthalene	< 0.5	< 0.5	< 0.7	< 0.6
1-Methylnaphthalene	< 0.5	< 0.5	< 0.7	< 0.6
Acenaphthylene	< 0.5	< 0.5	< 0.7	< 0.6
Acenaphthene	< 0.5	< 0.5	< 0.7	< 0.6
Fluorene	< 0.5	< 0.5	< 0.7	< 0.6
Phenanthrene	< 0.5	< 0.5	< 0.7	< 0.6
Anthracene	< 0.5	< 0.5	< 0.7	< 0.6
Fluoranthene	< 0.5	< 0.5	< 0.7	< 0.6
Pyrene	< 0.5	< 0.5	< 0.7	< 0.6
Benzo[a]anthracene	< 0.5	< 0.5	< 0.7	< 0.6
Chrysene	< 0.5	< 0.5	< 0.7	< 0.6
Benzo[b]fluoranthene	< 0.5	< 0.5	< 0.7	< 0.6
Benzo[k]fluoranthene	< 0.5	< 0.5	< 0.7	< 0.6
Benzo[a]pyrene	< 0.5	< 0.5	< 0.7	< 0.6
Indeno[1,2,3-cd]pyrene	< 0.5	< 0.5	< 0.7	< 0.6
Dibenz[a,h]anthracene	< 0.5	< 0.5	< 0.7	< 0.6
Benzo[g,h,i]perylene	< 0.5	< 0.5	< 0.7	< 0.6
p-Terphenyl-D14 (surr)	68 %R	73 %R	68 %R	66 %R

Detection limits elevated due to low solids content and in response to the lower initial mass used for analysis.



LABORATORY REPORT

EAI ID#: 230238

Client: **Golder Associates, Inc.**

Client Designation: **Stantec Machias | 20449741**

Sample ID: SW-SS-01 (0-1.45)

Lab Sample ID: 230238.06
Matrix: soil
Date Sampled: 8/3/21
Date Received: 8/5/21
Units: mg/kg
Date of Extraction/Prep: 8/6/21
Date of Analysis: 8/6/21
Analyst: JMR
Method: 8270D
Dilution Factor: 8

Naphthalene	< 0.6
2-Methylnaphthalene	< 0.6
1-Methylnaphthalene	< 0.6
Acenaphthylene	< 0.6
Acenaphthene	< 0.6
Fluorene	< 0.6
Phenanthrene	< 0.6
Anthracene	< 0.6
Fluoranthene	< 0.6
Pyrene	< 0.6
Benzo[a]anthracene	< 0.6
Chrysene	< 0.6
Benzo[b]fluoranthene	< 0.6
Benzo[k]fluoranthene	< 0.6
Benzo[a]pyrene	< 0.6
Indeno[1,2,3-cd]pyrene	< 0.6
Dibenz[a,h]anthracene	< 0.6
Benzo[g,h,i]perylene	< 0.6
p-Terphenyl-D14 (surr)	70 %R

Detection limits elevated due to low solids content and in response to the lower initial mass used for analysis.



QC REPORT

EAI ID#: **230238**

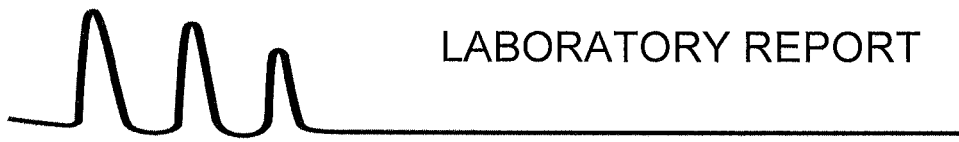
Client: **Golder Associates, Inc.**

Batch ID: 637638-40166/S080521PAH1

Client Designation: **Stantec Machias | 20449741**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Naphthalene	< 0.07	1.1 (66 %R)	1.0 (62 %R) (5 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
2-Methylnaphthalene	< 0.07	1.1 (68 %R)	1.1 (65 %R) (4 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
1-Methylnaphthalene	< 0.07	1.1 (68 %R)	1.1 (65 %R) (4 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Acenaphthylene	< 0.07	1.1 (69 %R)	1.1 (65 %R) (6 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Acenaphthene	< 0.07	1.2 (70 %R)	1.1 (66 %R) (6 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Fluorene	< 0.07	1.3 (80 %R)	1.2 (74 %R) (7 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Phenanthrene	< 0.07	1.3 (78 %R)	1.2 (72 %R) (8 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Anthracene	< 0.07	1.3 (77 %R)	1.2 (71 %R) (8 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Fluoranthene	< 0.07	1.3 (78 %R)	1.2 (71 %R) (9 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Pyrene	< 0.07	1.3 (78 %R)	1.2 (71 %R) (9 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Benzo[a]anthracene	< 0.07	1.3 (80 %R)	1.2 (73 %R) (9 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Chrysene	< 0.07	1.3 (80 %R)	1.2 (73 %R) (9 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Benzo[b]fluoranthene	< 0.07	1.4 (82 %R)	1.2 (73 %R) (11 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Benzo[k]fluoranthene	< 0.07	1.4 (81 %R)	1.2 (75 %R) (8 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Benzo[a]pyrene	< 0.07	1.3 (76 %R)	1.1 (69 %R) (10 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Indeno[1,2,3-cd]pyrene	< 0.07	1.3 (81 %R)	1.2 (73 %R) (10 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Dibenz[a,h]anthracene	< 0.07	1.3 (78 %R)	1.2 (71 %R) (10 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
Benzo[g,h,i]perylene	< 0.07	1.3 (77 %R)	1.2 (70 %R) (10 RPD)	8/6/2021	mg/kg	40 - 140	30	8270D
p-Terphenyl-D14 (surr)	65 %R	79 %R	72 %R	8/6/2021	mg/kg	30 - 130		8270D

*! Flagged analyte recoveries deviated from the QA/QC limits. Data that impacts sample results are noted on the sample report.



LABORATORY REPORT

EAI ID#: **230238**

Client: **Golder Associates, Inc.**

Client Designation: **Stantec Machias | 20449741**

Sample ID:	TR3-SS-01 (0-1.45)	SW-SS-01 (0-1.45)
Lab Sample ID:	230238.03	230238.06
Matrix:	soil	soil
Date Sampled:	8/3/21	8/3/21
Date Received:	8/5/21	8/5/21
% Solid:	59.1	52.6
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	8/10/21	8/10/21
Date of Analysis:	8/11/21	8/11/21
Analyst:	MB	MB
Extraction Method:	3540C	3540C
Analysis Method:	8082A	8082A
Dilution Factor:	2	2
PCB-1016	< 0.03	< 0.03
PCB-1221	< 0.03	< 0.03
PCB-1232	< 0.03	< 0.03
PCB-1242	< 0.03	< 0.03
PCB-1248	< 0.03	< 0.03
PCB-1254	< 0.03	< 0.03
PCB-1260	< 0.03	< 0.03
PCB-1262	< 0.03	< 0.03
PCB-1268	< 0.03	< 0.03
TMX (surr)	87 %R	93 %R
DCB (surr)	84 %R	102 %R

Acid clean-up was performed on the samples and associated batch QC.
 Detection limits elevated due to low solids content.



QC REPORT

EAI ID#: **230238**

Client: **Golder Associates, Inc.**

Batch ID: 637641-86957/S081021PCB1

Client Designation: **Stantec Machias | 20449741**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
PCB-1016	< 0.02	0.15 (109 %R)	0.14 (108 %R) (0 RPD)	8/11/2021	mg/kg	40 - 140	30	8082A
PCB-1221	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
PCB-1232	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
PCB-1242	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
PCB-1248	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
PCB-1254	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
PCB-1260	< 0.02	0.14 (105 %R)	0.14 (106 %R) (1 RPD)	8/11/2021	mg/kg	40 - 140	30	8082A
PCB-1262	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
PCB-1268	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	8/11/2021	mg/kg			8082A
TMX (surr)	101 %R	98 %R	93 %R	8/11/2021	% Rec	30 - 150	30	8082A
DCB (surr)	109 %R	110 %R	111 %R	8/11/2021	% Rec	30 - 150	30	8082A

*! Flagged analyte recoveries deviated from the QA/QC limits. Data that impacts sample results are noted on the sample report.



LABORATORY REPORT

EAI ID#: 230238

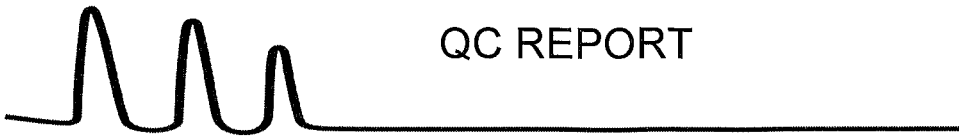
Client: **Golder Associates, Inc.**

Client Designation: **Stantec Machias | 20449741**

Sample ID:	TR2-SS-01 (0-1.2)	TR3-SS-01 (0-1.45)	TR4-SS-01 (0-1.3)	TR5-SS-01 (0-1.3)					
Lab Sample ID:	230238.02	230238.03	230238.04	230238.05					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/3/21	8/3/21	8/2/21	8/2/21	Analytical Matrix	Units	Date of Analysis	Method	Analyst
Date Received:	8/5/21	8/5/21	8/5/21	8/5/21					
Arsenic	9.0	8.3	13	12	SolTotDry	mg/kg	8/10/21	6020	DS
Cadmium	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	8/10/21	6020	DS
Chromium	27	25	34	32	SolTotDry	mg/kg	8/10/21	6020	DS
Lead	11	13	22	20	SolTotDry	mg/kg	8/10/21	6020	DS
Mercury	< 0.1	< 0.1	< 0.1	< 0.1	SolTotDry	mg/kg	8/10/21	6020	DS

Sample ID: SW-SS-01 (0-1.45)

Lab Sample ID:	230238.06								
Matrix:	soil								
Date Sampled:	8/3/21				Analytical Matrix	Units	Date of Analysis	Method	Analyst
Date Received:	8/5/21								
Arsenic	11				SolTotDry	mg/kg	8/10/21	6020	DS
Cadmium	< 0.5				SolTotDry	mg/kg	8/10/21	6020	DS
Chromium	31				SolTotDry	mg/kg	8/10/21	6020	DS
Lead	20				SolTotDry	mg/kg	8/10/21	6020	DS
Mercury	< 0.1				SolTotDry	mg/kg	8/10/21	6020	DS



QC REPORT

EAI ID#: 230238

Client: **Golder Associates, Inc.**

Client Designation: **Stantec Machias | 20449741**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Arsenic	< 0.5	40 (99 %R)	NA	mg/kg	8/10/21	80 - 120	20	6020
Cadmium	< 0.5	39 (97 %R)	NA	mg/kg	8/10/21	80 - 120	20	6020
Chromium	< 0.5	39 (98 %R)	NA	mg/kg	8/10/21	80 - 120	20	6020
Lead	< 0.5	40 (100 %R)	NA	mg/kg	8/10/21	80 - 120	20	6020
Mercury	< 0.1	0.39 (96 %R)	NA	mg/kg	8/10/21	80 - 120	20	6020

*! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted, flagged data does not impact the sample data.



September 20, 2021

Service Request No:E2100913

Alison Blay
Eastern Analytical, Inc.
51 Antrim Avenue
Concord, NH 03301

Laboratory Results for: 230238

Dear Alison,

Enclosed are the results of the sample(s) submitted to our laboratory August 18, 2021
For your reference, these analyses have been assigned our service request number **E2100913**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: Waypoint
Project: 21-230-0011
Sample Matrix: S

Service Request No.: E2100922
Date Received: 08/19/21

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 08/19/21.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2100528: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS OCDD/OCDF recoveries were above the upper QC limits; associated compounds should be considered potentially bias high for the samples in this batch.

Y flags – Labeled Standards

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'
- The 1:1 and associated dilution have been combined into one TEQ Summary report

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Eastern Analytical, Inc.
Project: 230238

Service Request:E2100913

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2100913-001	TR3-SS-01 (0-1.45)	8/3/2021	0825
E2100913-002	SW-SS-01 (0-1.45)	8/3/2021	1400

Service Request Summary

Folder #: E2100913

Client Name: Eastern Analytical, Inc.

Project Name: 230238

Project Number:

Report To: Alison Blay

Eastern Analytical, Inc.

51 Antrim Avenue

Concord, NH 03301

USA

Phone Number: 800-287-0525

Cell Number:

Fax Number: 603-228-4591

E-mail: alisonb@ealabs.com

Project Chemist: House Account

Originating Lab: HOUSTON

Logged By: CGRANDITS

Date Received: 08/18/21

Internal Due Date: 9/8/2021

QAP: LAB QAP

Qualifier Set: HRMS Qualifier Set

Formset: Lab Standard

Merged?: N

Report to MDL?: Y

P.O. Number: 55530

EDD: No EDD Specified

2 4 oz-Glass Jar VM CLEAR Teflon Liner Unpreserved

Location: EHRMS-W/C 8A

Pressure Gas:

NPDES

		HOUSTON	
		PCDD PCDF/8290	
		Total Solids/ALS SOP	
Lab Samp No.	Client Samp No	Matrix	Collected
E2100913-001	TR3-SS-01 (0-1.45)	Soil	08/03/21 0825
E2100913-002	SW-SS-01 (0-1.45)	Soil	08/03/21 1400
		II	II
		II	II

Service Request Summary

Folder #: E2100913
Client Name: Eastern Analytical, Inc.
Project Name: 230238
Project Number:

Report To: Alison Blay
Eastern Analytical, Inc.
51 Antrim Avenue
Concord, NH 03301
USA
Phone Number: 800-287-0525
Cell Number:
Fax Number: 603-228-4591
E-mail: alisonb@eailabs.com

Project Chemist: House Account
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/18/21
Internal Due Date: 9/8/2021

QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P. O. Number: 55530
EDD: No EDD Specified

2 4 oz-Glass Jar VM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 8A
Pressure Gas:
NPDES

Data Qualifiers

HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
- i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	19-028-0	6/30/2022
Arkansas Department of Environmental Quality	21-022-0	3/26/2022
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-33	6/30/2022
Hawaii Department of Health	2021-2022	4/30/2022
Kansas Department of Health and Environment	E-10352 2022	7/31/2022
Louisiana Department of Environmental Quality	03087-2021	6/30/2022
Louisiana Department of Health and Hospitals	LA028-2021	12/31/2021
Maine Department of Health and Human Services	2020016	6/5/2022
Minnesota Department of Health	2021671	12/31/2021
Nevada Department of Concervation and Natural Resources	TX026932022-1	7/31/2022
New Hampshire Environmental Laboratory Accreditation Program	209421	4/24/2022
Pennsylvania Department of Environmental Protection	68-03441-015	6/30/2022
Tennessee Department of Environment and Concervation	04016-2021	4/30/2022
Texas Commision on Environmental Quality	T104704231-21-27	4/30/2022
Texas Commision on Environmental Quality	T104704231-21-28	5/1/2022
United States Department of Agriculture	P330-19-00299	10/10/2022

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E2100913

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date: 09/17/21 Analyst: [Signature] Samples: 001

Second Level - Data Review – to be filled by person doing peer review

Date: 09/17/21 Analyst: LKL Samples: 001

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E2100913

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date: 09/17/21 Analyst: [Signature] Samples: 002

Second Level - Data Review – to be filled by person doing peer review

Date: 09/17/21 Analyst: LKI Samples: 002



Chain of Custody

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RIGHT SOLUTIONS . RIGHT PARTNER

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CHAIN-OF-CUSTODY RECORD



Sample ID _____ Date Sampled Matrix _____

aParameters

EAI ID# 230238

Page 1

Sample Notes

TR3-SS-01 (0-1.45) | 8/3/2021 | soil | Subcontract - Dioxin Furans Method 8290 17 Congeners
08:25

SW-SS-01 (0-1.45) | 8/3/2021 | soil | Subcontract - Dioxin Furans Method 8290 17 Congeners
14:00

EAI ID# 230238 Project State: ME

Project ID: _____

Results Needed: Preferred Date: Standard

RUSH Due Date: _____

PO #: 55530

EAI ID# 230238

Company ALS Environmental - Houston

Address 10450 Stancliff Road, Suite

Address Houston, TX 77099

Account # _____

Phone # 1 281-530-5656

QC Deliverables A A+ B B+ C MA MCP

Notes about project: _____

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

Excel EDD

Data Deliverable (circle) Excel NH EMD EQUIS ME EGAD

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by: _____

Relinquished by: Cherell Starnes Date/Time: 8/17/21 15:00hrs Received by: _____

Relinquished by: _____ Date/Time: _____ Received by: _____

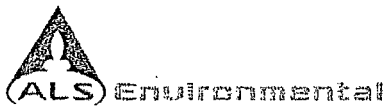
Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603) 228-0525

1-800-287-0525

customerservice@easternanalytical.com

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees



Cooler Receipt Form

Project Chemist CC

Client/Project EAI Thermometer ID 1231

Date/Time Received: 8/18/21 Initials: CC Date/Time Logged in: 8/18/21 Initials CC

1. Method of delivery: US Mail Fed Ex UPS DHL Courier Client

2. Samples received in: Cooler Box Envelope Other

3. Were custody seals on coolers? Yes No
Were they intact? Yes No N/A
Were they signed and dated? Yes No N/A
If yes, how many and where?

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
12 246 999 01 9226 0487		8/18/21	0914	CC	3.6	<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:



10450 Stancliff Rd., Suite 210
Houston, TX 77099
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F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

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Phone (713)266-1599 Fax (713)266-0130
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Preparation Information Benchsheet

Prep Run#: 385854
 Team: Semivoa GCMS/TWOODS

Prep Workflow: OrgExtDioxS(30)
 Prep Method: Method

Status: Prepped
 Prep Date/Time: 8/23/21 13:44

#	Lab Code	Client ID	B#	Method /Test	pH	CI	Matrix	Amt Ext.	Sample Description
1	E2100913-001	TR3-SS-01 (0-1.45)	.01	8290/PCDD PCDF			Soil	10.001g	
2	E2100913-002	SW-SS-01 (0-1.45)	.01	8290/PCDD PCDF			Soil	10.241g	
3	E2100922-001	SWT Filtercake	.01	8290/PCDD PCDF			Solid	10.005g	black soil
4	E2100923-001	MWPS-LTUA-001	.01	8290/PCDD PCDF			Soil	5.316g	dark soil with rocks
5	E2100923-002	MWPS-LTUA-002	.01	8290/PCDD PCDF			Soil	5.001g	dark soil with rocks
6	E2100923-003	MWPS-LTUD-001	.01	8290/PCDD PCDF			Soil	5.168g	dark soil with rocks
7	EQ2100528-01	MB		8290/PCDD PCDF			Solid	10.021g	
8	EQ2100528-02	LCS		8290/PCDD PCDF			Solid	10.114g	
9	EQ2100528-03	DLCS		8290/PCDD PCDF			Solid	10.087g	
10	K2108167-008	Composite	.08	8290/PCDD PCDF			Paperboard	10.033g	

Spiking Solutions

Name:	1613B Matrix Working Standard	Inventory ID	218492	Logbook Ref:	tw 218492 08/02/21	Expires On:	01/29/2022
E2100913-001	100.00µL	E2100913-002	100.00µL	E2100922-001	100.00µL	E2100923-002	100.00µL
EQ2100528-01	100.00µL	EQ2100528-02	100.00µL	EQ2100528-03	100.00µL	K2108167-008	100.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	218825	Logbook Ref:	tw 8/18/21 218825	Expires On:	08/28/2021
E2100913-001	100.00µL	E2100913-002	100.00µL	E2100922-001	100.00µL	E2100923-001	100.00µL
EQ2100528-01	100.00µL	EQ2100528-02	100.00µL	EQ2100528-03	100.00µL	K2108167-008	100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	218889	Logbook Ref:	SN 8/23/21 218889 2-4 ng/ml	Expires On:	11/23/2021
E2100913-001	1,000.00µL	E2100913-002	1,000.00µL	E2100922-001	1,000.00µL	E2100923-001	1,000.00µL
EQ2100528-01	1,000.00µL	EQ2100528-02	1,000.00µL	EQ2100528-03	1,000.00µL	K2108167-008	1,000.00µL

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	8/23/21 13:44	Started:	8/24/21 11:00	Started:	8/24/21 13:00	Started:	8/25/21 09:00
Finished:	8/24/21 09:00	Finished:	8/24/21 12:00	Finished:	8/24/21 16:00	Finished:	8/25/21 12:00
By:	TWOODS	By:	TWOODS	By:	TWOODS	By:	TWOODS

Comments: _____

Preparation Information Benchsheet

Prep Run#: 385854
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExDioxS(30)
Prep Method: Method

Status: Prepped
Prep Date/Time: 8/23/21 13:44

Reviewed By: TW Date: 8/25/21

Chain of Custody

Relinquished By: _____	Date: _____	Extracts Examined
Received By: _____	Date: _____	Yes No

Printed 9/16/21 15:40

Preparation Information Benchsheet



Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: TR3-SS-01 (0-1.45)
Lab Code: E2100913-001

Service Request: E2100913
Date Collected: 08/03/21 08:25
Date Received: 08/18/21 09:15
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.001g
Data File Name: P627503
ICAL Date: 12/04/20

Date Analyzed: 09/15/21 19:37
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627493

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.46	1.46			1
1,2,3,7,8-PeCDD	ND	U	0.803	4.27			1
1,2,3,4,7,8-HxCDD	0.885JK		0.747	4.27	1.00	1.000	1
1,2,3,6,7,8-HxCDD	2.53JK		0.632	4.27	0.88	1.000	1
1,2,3,7,8,9-HxCDD	0.798JK		0.652	4.27	0.90	1.007	1
1,2,3,4,6,7,8-HpCDD	67.1		0.967	4.27	1.06	1.000	1
OCDD	457		1.68	8.53	0.84	1.000	1
2,3,7,8-TCDF	ND	U	1.13	1.13			1
1,2,3,7,8-PeCDF	0.614J		0.427	4.27	1.35	1.000	1
2,3,4,7,8-PeCDF	0.774JK		0.483	4.27	1.11	1.001	1
1,2,3,4,7,8-HxCDF	2.07J		0.412	4.27	1.06	1.000	1
1,2,3,6,7,8-HxCDF	0.851J		0.440	4.27	1.27	1.000	1
1,2,3,7,8,9-HxCDF	0.900J		0.505	4.27	1.29	1.000	1
2,3,4,6,7,8-HxCDF	1.36J		0.465	4.27	1.43	1.000	1
1,2,3,4,6,7,8-HpCDF	19.4		0.265	4.27	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	1.36BJK		0.285	4.27	0.79	1.000	1
OCDF	144		1.35	8.53	0.81	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: 08/03/21 08:25
Date Received: 08/18/21 09:15

Sample Name: TR3-SS-01 (0-1.45)
Lab Code: E2100913-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.001g

Date Analyzed: 09/15/21 19:37
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI

Data File Name: P627503
ICAL Date: 12/04/20

Blank File Name: P627483
Cal Ver. File Name: P627493

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Tetra-Dioxins	ND	U	1.46	1.46			1
Total Penta-Dioxins	ND	U	0.803	4.27			1
Total Hexa-Dioxins	11.1		0.673	4.27	1.32		1
Total Hepta-Dioxins	133		0.967	4.27	1.02		1
Total Tetra-Furans	ND	U	1.13	1.13			1
Total Penta-Furans	1.63J		0.453	4.27	1.64		1
Total Hexa-Furans	15.5		0.454	4.27	1.06		1
Total Hepta-Furans	74.6		0.275	4.27	0.98		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: TR3-SS-01 (0-1.45)
Lab Code: E2100913-001

Service Request: E2100913
Date Collected: 08/03/21 08:25
Date Received: 08/18/21 09:15
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.001g
Data File Name: P627503
ICAL Date: 12/04/20

Date Analyzed: 09/15/21 19:37
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627493

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	451.915	23	Y	40-135	0.77	1.020
13C-1,2,3,7,8-PeCDD	2000	694.770	35	Y	40-135	1.55	1.184
13C-1,2,3,4,7,8-HxCDD	2000	740.623	37	Y	40-135	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	759.122	38	Y	40-135	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	677.100	34	Y	40-135	1.03	1.066
13C-OCDD	4000	1029.689	26	Y	40-135	0.89	1.140
13C-2,3,7,8-TCDF	2000	405.714	20	Y	40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	650.183	33	Y	40-135	1.60	1.142
13C-2,3,4,7,8-PeCDF	2000	578.222	29	Y	40-135	1.57	1.174
13C-1,2,3,4,7,8-HxCDF	2000	828.327	41		40-135	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	659.131	33	Y	40-135	0.51	0.974
13C-1,2,3,7,8,9-HxCDF	2000	793.505	40		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	723.562	36	Y	40-135	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	614.960	31	Y	40-135	0.43	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	837.336	42		40-135	0.43	1.079
37Cl-2,3,7,8-TCDD	800	380.520	48		40-135	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: 08/03/21 08:25
Date Received: 08/18/21 09:15

Sample Name: TR3-SS-01 (0-1.45)
Lab Code: E2100913-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.46	1.46	1	1	
1,2,3,7,8-PeCDD	ND	0.803	4.27	1	1	
1,2,3,4,7,8-HxCDD	0.885	0.747	4.27	1	0.1	0.0885
1,2,3,6,7,8-HxCDD	2.53	0.632	4.27	1	0.1	0.253
1,2,3,7,8,9-HxCDD	0.798	0.652	4.27	1	0.1	0.0798
1,2,3,4,6,7,8-HpCDD	67.1	0.967	4.27	1	0.01	0.671
OCDD	457	1.68	8.53	1	0.0003	0.137
2,3,7,8-TCDF	ND	1.13	1.13	1	0.1	
1,2,3,7,8-PeCDF	0.614	0.427	4.27	1	0.03	0.0184
2,3,4,7,8-PeCDF	0.774	0.483	4.27	1	0.3	0.232
1,2,3,4,7,8-HxCDF	2.07	0.412	4.27	1	0.1	0.207
1,2,3,6,7,8-HxCDF	0.851	0.440	4.27	1	0.1	0.0851
1,2,3,7,8,9-HxCDF	0.900	0.505	4.27	1	0.1	0.0900
2,3,4,6,7,8-HxCDF	1.36	0.465	4.27	1	0.1	0.136
1,2,3,4,6,7,8-HpCDF	19.4	0.265	4.27	1	0.01	0.194
1,2,3,4,7,8,9-HpCDF	1.36	0.285	4.27	1	0.01	0.0136
OCDF	144	1.35	8.53	1	0.0003	0.0432
Total TEQ						2.25

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: TR3-SS-01 (0-1.45)
Lab Code: E2100913-001

Service Request: E2100913
Date Collected: 08/03/21 08:25
Date Received: 08/18/21 09:15
Units: Percent
Basis: NA

Total Solids

Analysis Method: ALS SOP
 6.7189g

Date Analyzed: 09/02/21 12:04
 NA
 E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	58.6		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: 08/03/21 14:00
Date Received: 08/18/21 09:15

Sample Name: SW-SS-01 (0-1.45)
Lab Code: E2100913-002

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.241g
Data File Name: P627525
ICAL Date: 12/04/20

Date Analyzed: 09/16/21 15:33
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627522

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.32	1.32			1
1,2,3,7,8-PeCDD	2.02J		1.20	4.56	1.59	1.000	1
1,2,3,4,7,8-HxCDD	1.03JK		0.966	4.56	0.84	1.000	1
1,2,3,6,7,8-HxCDD	5.24		0.789	4.56	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1.57JK		0.826	4.56	1.58	1.007	1
1,2,3,4,6,7,8-HpCDD	170		2.29	4.56	1.06	1.000	1
OCDD	1440		9.90	9.90	0.84	1.000	1
2,3,7,8-TCDF	ND	U	1.50	1.50			1
1,2,3,7,8-PeCDF	ND	U	1.61	4.56			1
2,3,4,7,8-PeCDF	ND	U	1.47	4.56			1
1,2,3,4,7,8-HxCDF	1.24JK		1.04	4.56	2.14	1.000	1
1,2,3,6,7,8-HxCDF	1.86J		1.12	4.56	1.34	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	2.00	4.56			1
2,3,4,6,7,8-HxCDF	2.52JK		1.35	4.56	1.02	1.000	1
1,2,3,4,6,7,8-HpCDF	44.8		1.46	4.56	1.08	1.000	1
1,2,3,4,7,8,9-HpCDF	4.10J		1.56	4.56	0.92	1.001	1
OCDF	301		6.76	9.13	0.92	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: SW-SS-01 (0-1.45)
Lab Code: E2100913-002

Service Request: E2100913
Date Collected: 08/03/21 14:00
Date Received: 08/18/21 09:15
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.241g
Data File Name: P627525
ICAL Date: 12/04/20

Date Analyzed: 09/16/21 15:33
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627522

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Tetra-Dioxins	ND	U	1.32	1.32			1
Total Penta-Dioxins	2.02J		1.20	4.56	1.59		1
Total Hexa-Dioxins	11.4		0.853	4.56	1.39		1
Total Hepta-Dioxins	293		2.29	4.56	1.09		1
Total Tetra-Furans	ND	U	1.50	1.50			1
Total Penta-Furans	3.47J		1.09	4.56	1.66		1
Total Hexa-Furans	34.5		1.30	4.56	1.17		1
Total Hepta-Furans	175		1.51	4.56	1.08		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: SW-SS-01 (0-1.45)
Lab Code: E2100913-002

Service Request: E2100913
Date Collected: 08/03/21 14:00
Date Received: 08/18/21 09:15
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.241g
Data File Name: P627525
ICAL Date: 12/04/20

Date Analyzed: 09/16/21 15:33
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627522

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	314.788	16	Y	40-135	0.78	1.021
13C-1,2,3,7,8-PeCDD	2000	448.168	22	Y	40-135	1.63	1.185
13C-1,2,3,4,7,8-HxCDD	2000	526.063	26	Y	40-135	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	571.458	29	Y	40-135	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	389.588	19	Y	40-135	1.01	1.067
13C-OCDD	4000	393.612	10	Y	40-135	0.86	1.141
13C-2,3,7,8-TCDF	2000	306.844	15	Y	40-135	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	405.161	20	Y	40-135	1.53	1.143
13C-2,3,4,7,8-PeCDF	2000	449.232	22	Y	40-135	1.60	1.175
13C-1,2,3,4,7,8-HxCDF	2000	567.137	28	Y	40-135	0.53	0.971
13C-1,2,3,6,7,8-HxCDF	2000	476.819	24	Y	40-135	0.50	0.974
13C-1,2,3,7,8,9-HxCDF	2000	362.178	18	Y	40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	442.112	22	Y	40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	369.647	18	Y	40-135	0.42	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	498.158	25	Y	40-135	0.42	1.079
37Cl-2,3,7,8-TCDD	800	247.232	31	Y	40-135	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: SW-SS-01 (0-1.45)
Lab Code: E2100913-002

Service Request: E2100913
Date Collected: 08/03/21 14:00
Date Received: 08/18/21 09:15
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.32	1.32	1	1	
1,2,3,7,8-PeCDD	2.02	1.20	4.56	1	1	2.02
1,2,3,4,7,8-HxCDD	1.03	0.966	4.56	1	0.1	0.103
1,2,3,6,7,8-HxCDD	5.24	0.789	4.56	1	0.1	0.524
1,2,3,7,8,9-HxCDD	1.57	0.826	4.56	1	0.1	0.157
1,2,3,4,6,7,8-HpCDD	170	2.29	4.56	1	0.01	1.70
OCDD	1440	9.90	9.90	1	0.0003	0.432
2,3,7,8-TCDF	ND	1.50	1.50	1	0.1	
1,2,3,7,8-PeCDF	ND	1.61	4.56	1	0.03	
2,3,4,7,8-PeCDF	ND	1.47	4.56	1	0.3	
1,2,3,4,7,8-HxCDF	1.24	1.04	4.56	1	0.1	0.124
1,2,3,6,7,8-HxCDF	1.86	1.12	4.56	1	0.1	0.186
1,2,3,7,8,9-HxCDF	ND	2.00	4.56	1	0.1	
2,3,4,6,7,8-HxCDF	2.52	1.35	4.56	1	0.1	0.252
1,2,3,4,6,7,8-HpCDF	44.8	1.46	4.56	1	0.01	0.448
1,2,3,4,7,8,9-HpCDF	4.10	1.56	4.56	1	0.01	0.0410
OCDF	301	6.76	9.13	1	0.0003	0.0903
Total TEQ						6.08

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil
Sample Name: SW-SS-01 (0-1.45)
Lab Code: E2100913-002

Service Request: E2100913
Date Collected: 08/03/21 14:00
Date Received: 08/18/21 09:15
Units: Percent
Basis: NA

Total Solids

Analysis Method: ALS SOP
8.1517g

Date Analyzed: 09/02/21 12:04
NA
E-Balance-01

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Solids	53.5		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ2100528-01

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.021g

Date Analyzed: 09/13/21 15:23
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627479

Data File Name: P627483
ICAL Date: 12/04/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.664	0.664			1
1,2,3,7,8-PeCDD	ND	U	0.432	2.49			1
1,2,3,4,7,8-HxCDD	ND	U	0.326	2.49			1
1,2,3,6,7,8-HxCDD	ND	U	0.270	2.49			1
1,2,3,7,8,9-HxCDD	ND	U	0.281	2.49			1
1,2,3,4,6,7,8-HpCDD	1.73J		0.214	2.49	1.12	1.000	1
OCDD	4.05J		0.337	4.99	0.87	1.000	1
2,3,7,8-TCDF	ND	U	0.414	0.499			1
1,2,3,7,8-PeCDF	ND	U	0.237	2.49			1
2,3,4,7,8-PeCDF	ND	U	0.227	2.49			1
1,2,3,4,7,8-HxCDF	ND	U	0.191	2.49			1
1,2,3,6,7,8-HxCDF	ND	U	0.210	2.49			1
1,2,3,7,8,9-HxCDF	ND	U	0.231	2.49			1
2,3,4,6,7,8-HxCDF	ND	U	0.204	2.49			1
1,2,3,4,6,7,8-HpCDF	0.585JK		0.125	2.49	1.30	1.000	1
1,2,3,4,7,8,9-HpCDF	0.212JK		0.150	2.49	1.80	1.000	1
OCDF	2.05JK		0.387	4.99	0.75	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ2100528-01

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.021g

Date Analyzed: 09/13/21 15:23
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627479

Data File Name: P627483
ICAL Date: 12/04/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.664	0.664			1
Total Penta-Dioxins	ND	U	0.432	2.49			1
Total Hexa-Dioxins	ND	U	0.290	2.49			1
Total Hepta-Dioxins	2.92		0.214	2.49	1.14		1
Total Tetra-Furans	ND	U	0.414	0.499			1
Total Penta-Furans	ND	U	0.232	2.49			1
Total Hexa-Furans	ND	U	0.209	2.49			1
Total Hepta-Furans	ND	U	0.137	2.49			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ2100528-01

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.021g

Date Analyzed: 09/13/21 15:23
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI

Data File Name: P627483
ICAL Date: 12/04/20

Blank File Name: P627483
Cal Ver. File Name: P627479

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	693.032	35	Y	40-135	0.75	1.021
13C-1,2,3,7,8-PeCDD	2000	947.126	47		40-135	1.61	1.184
13C-1,2,3,4,7,8-HxCDD	2000	886.107	44		40-135	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	948.228	47		40-135	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	920.749	46		40-135	1.04	1.066
13C-OCDD	4000	1693.693	42		40-135	0.89	1.141
13C-2,3,7,8-TCDF	2000	658.661	33	Y	40-135	0.79	0.993
13C-1,2,3,7,8-PeCDF	2000	911.082	46		40-135	1.59	1.142
13C-2,3,4,7,8-PeCDF	2000	910.517	46		40-135	1.54	1.174
13C-1,2,3,4,7,8-HxCDF	2000	994.439	50		40-135	0.51	0.972
13C-1,2,3,6,7,8-HxCDF	2000	789.460	39	Y	40-135	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	970.742	49		40-135	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	919.036	46		40-135	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	891.903	45		40-135	0.43	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1063.715	53		40-135	0.43	1.079
37Cl-2,3,7,8-TCDD	800	338.670	42		40-135	NA	1.022



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Analyzed: 09/12/21
Date Extracted: 08/23/21

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Units: ng/Kg
Basis: Dry
Analysis Lot: 738825

Lab Control Sample
EQ2100528-02

Duplicate Lab Control Sample
EQ2100528-03

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD	121	98.9	122	122	99.1	123	70-130	<1	25
1,2,3,4,7,8-HxCDD	126	98.9	127	123	99.1	124	70-130	3	25
1,2,3,6,7,8-HxCDD	111	98.9	112	107	99.1	108	70-130	4	25
1,2,3,7,8,9-HxCDD	120	98.9	121	120	99.1	121	70-130	<1	25
1,2,3,7,8-PeCDD	126	98.9	127	128	99.1	129	70-130	1	25
2,3,7,8-TCDD	21.7	19.8	110	25.0	19.8	126	70-130	14	25
OCDD	328	198	166 *	335	198	169 *	70-130	2	25
1,2,3,4,6,7,8-HpCDF	128	98.9	130	123	99.1	124	70-130	4	25
1,2,3,4,7,8,9-HpCDF	104	98.9	106	112	99.1	113	70-130	7	25
1,2,3,4,7,8-HxCDF	109	98.9	110	113	99.1	114	70-130	4	25
1,2,3,6,7,8-HxCDF	121	98.9	123	122	99.1	123	70-130	<1	25
1,2,3,7,8,9-HxCDF	124	98.9	126	128	99.1	129	70-130	3	25
1,2,3,7,8-PeCDF	119	98.9	120	124	99.1	125	70-130	4	25
2,3,4,6,7,8-HxCDF	116	98.9	117	118	99.1	119	70-130	2	25
2,3,4,7,8-PeCDF	126	98.9	127	126	99.1	127	70-130	<1	25
2,3,7,8-TCDF	22.1	19.8	112	22.4	19.8	113	70-130	1	25
OCDF	265	198	134 *	272	198	137 *	70-130	3	25

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ2100528-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.114g

Date Analyzed: 09/12/21 09:36
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI

Data File Name: P627450
ICAL Date: 12/04/20

Blank File Name: P627483
Cal Ver. File Name: P627440

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	21.7		1.09	1.09	0.80	1.001	1
1,2,3,7,8-PeCDD	126		0.632	2.47	1.49	1.000	1
1,2,3,4,7,8-HxCDD	126		0.289	2.47	1.20	1.000	1
1,2,3,6,7,8-HxCDD	111		0.254	2.47	1.25	1.000	1
1,2,3,7,8,9-HxCDD	120		0.258	2.47	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	121		0.353	2.47	1.02	1.000	1
OCDD	328		0.629	4.94	0.82	1.000	1
2,3,7,8-TCDF	22.1		0.617	0.617	0.86	1.001	1
1,2,3,7,8-PeCDF	119		0.379	2.47	1.53	1.000	1
2,3,4,7,8-PeCDF	126		0.383	2.47	1.59	1.001	1
1,2,3,4,7,8-HxCDF	109		0.312	2.47	1.19	1.000	1
1,2,3,6,7,8-HxCDF	121		0.342	2.47	1.19	1.000	1
1,2,3,7,8,9-HxCDF	124		0.393	2.47	1.25	1.000	1
2,3,4,6,7,8-HxCDF	116		0.337	2.47	1.14	1.000	1
1,2,3,4,6,7,8-HpCDF	128		0.279	2.47	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	104		0.316	2.47	1.03	1.000	1
OCDF	265		0.702	4.94	0.83	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ2100528-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.114g

Date Analyzed: 09/12/21 09:36
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627440

Data File Name: P627450
ICAL Date: 12/04/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	21.7		1.09	1.09	0.80		1
Total Penta-Dioxins	126		0.632	2.47	1.49		1
Total Hexa-Dioxins	357		0.266	2.47	1.20		1
Total Hepta-Dioxins	141		0.353	2.47	1.02		1
Total Tetra-Furans	23.2		0.617	0.617	0.86		1
Total Penta-Furans	245		0.381	2.47	1.53		1
Total Hexa-Furans	471		0.345	2.47	1.41		1
Total Hepta-Furans	233		0.297	2.47	1.00		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ2100528-02

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.114g

Date Analyzed: 09/12/21 09:36
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627440

Data File Name: P627450
ICAL Date: 12/04/20

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	778.218	39	Y	40-135	0.71	1.020
13C-1,2,3,7,8-PeCDD	2000	984.548	49		40-135	1.64	1.183
13C-1,2,3,4,7,8-HxCDD	2000	933.373	47		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	918.420	46		40-135	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	942.582	47		40-135	1.05	1.066
13C-OCDD	4000	1654.166	41		40-135	0.91	1.140
13C-2,3,7,8-TCDF	2000	722.829	36	Y	40-135	0.79	0.993
13C-1,2,3,7,8-PeCDF	2000	961.668	48		40-135	1.54	1.141
13C-2,3,4,7,8-PeCDF	2000	940.005	47		40-135	1.54	1.173
13C-1,2,3,4,7,8-HxCDF	2000	995.561	50		40-135	0.50	0.971
13C-1,2,3,6,7,8-HxCDF	2000	778.868	39	Y	40-135	0.47	0.974
13C-1,2,3,7,8,9-HxCDF	2000	945.467	47		40-135	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	913.787	46		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	893.197	45		40-135	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1113.626	56		40-135	0.45	1.079
37Cl-2,3,7,8-TCDD	800	378.126	47		40-135	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2100528-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.087g

Date Analyzed: 09/12/21 10:26
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI

Data File Name: P627451
ICAL Date: 12/04/20

Blank File Name: P627483
Cal Ver. File Name: P627440

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	25.0		0.874	0.874	0.77	1.001	1
1,2,3,7,8-PeCDD	128		0.439	2.48	1.55	1.000	1
1,2,3,4,7,8-HxCDD	123		0.343	2.48	1.23	1.000	1
1,2,3,6,7,8-HxCDD	107		0.290	2.48	1.28	1.000	1
1,2,3,7,8,9-HxCDD	120		0.300	2.48	1.20	1.007	1
1,2,3,4,6,7,8-HpCDD	122		0.219	2.48	1.02	1.000	1
OCDD	335		0.701	4.96	0.87	1.000	1
2,3,7,8-TCDF	22.4		0.567	0.567	0.82	1.001	1
1,2,3,7,8-PeCDF	124		0.373	2.48	1.54	1.000	1
2,3,4,7,8-PeCDF	126		0.354	2.48	1.46	1.001	1
1,2,3,4,7,8-HxCDF	113		0.201	2.48	1.27	1.000	1
1,2,3,6,7,8-HxCDF	122		0.213	2.48	1.17	1.000	1
1,2,3,7,8,9-HxCDF	128		0.248	2.48	1.22	1.000	1
2,3,4,6,7,8-HxCDF	118		0.210	2.48	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	123		0.277	2.48	0.97	1.000	1
1,2,3,4,7,8,9-HpCDF	112		0.311	2.48	1.02	1.000	1
OCDF	272		1.29	4.96	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2100528-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.087g

Date Analyzed: 09/12/21 10:26
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P627483
Cal Ver. File Name: P627440

Data File Name: P627451
ICAL Date: 12/04/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	25.0		0.874	0.874	0.77		1
Total Penta-Dioxins	128		0.439	2.48	1.55		1
Total Hexa-Dioxins	360		0.309	2.48	1.25		1
Total Hepta-Dioxins	153		0.219	2.48	1.00		1
Total Tetra-Furans	22.4		0.567	0.567	0.82		1
Total Penta-Furans	250		0.364	2.48	1.54		1
Total Hexa-Furans	483		0.217	2.48	1.09		1
Total Hepta-Furans	263		0.293	2.48	0.97		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 230238
Sample Matrix: Soil

Service Request: E2100913
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2100528-03

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.087g

Date Analyzed: 09/12/21 10:26
Date Extracted: 8/23/21
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI

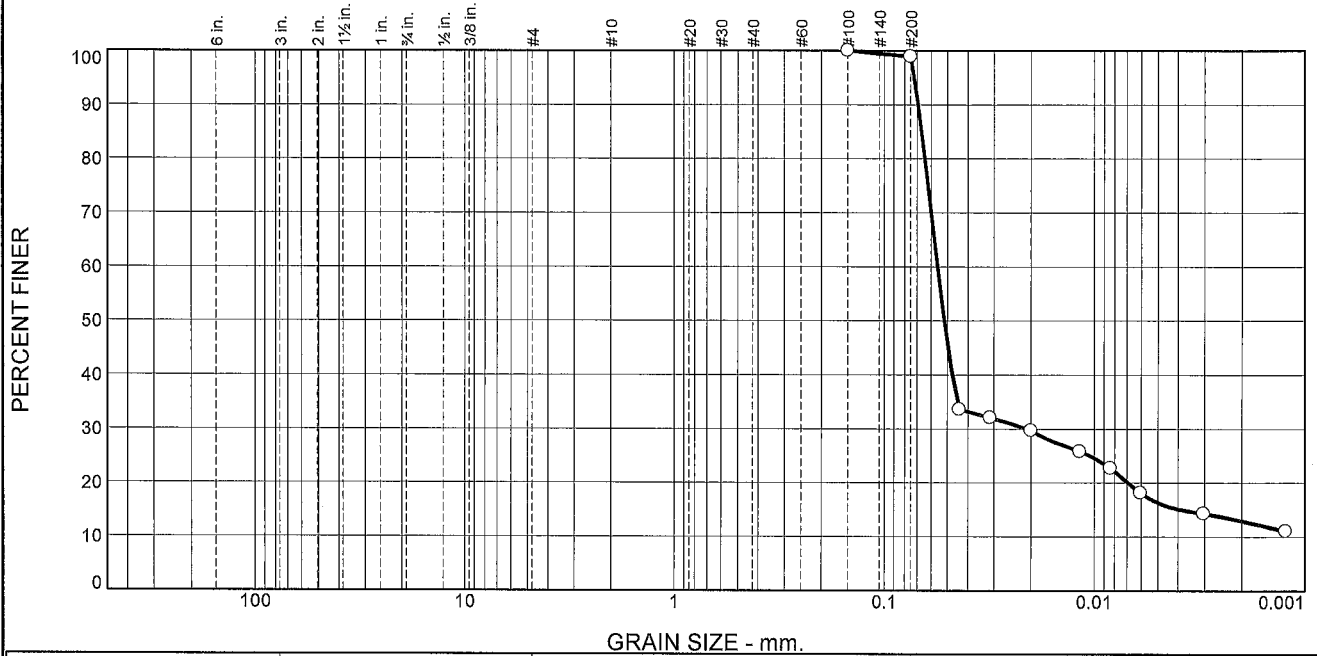
Data File Name: P627451
ICAL Date: 12/04/20

Blank File Name: P627483
Cal Ver. File Name: P627440

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	904.074	45		40-135	0.75	1.020
13C-1,2,3,7,8-PeCDD	2000	1150.625	58		40-135	1.57	1.183
13C-1,2,3,4,7,8-HxCDD	2000	1002.776	50		40-135	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1035.083	52		40-135	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1012.574	51		40-135	1.10	1.066
13C-OCDD	4000	1736.538	43		40-135	0.91	1.140
13C-2,3,7,8-TCDF	2000	887.503	44		40-135	0.81	0.993
13C-1,2,3,7,8-PeCDF	2000	1101.464	55		40-135	1.54	1.141
13C-2,3,4,7,8-PeCDF	2000	1101.554	55		40-135	1.50	1.173
13C-1,2,3,4,7,8-HxCDF	2000	1085.918	54		40-135	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	2000	864.218	43		40-135	0.50	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1025.832	51		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1022.710	51		40-135	0.49	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	979.315	49		40-135	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1181.351	59		40-135	0.44	1.079
37Cl-2,3,7,8-TCDD	800	441.784	55		40-135	NA	1.021

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	1.1	82.6	16.3

Test Results (ASTM D 422 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#100	100.0		
#200	98.9		
0.0438 mm.	33.6		
0.0312 mm.	32.0		
0.0199 mm.	29.7		
0.0117 mm.	25.8		
0.0084 mm.	22.7		
0.0060 mm.	18.1		
0.0030 mm.	14.3		
0.0012 mm.	11.0		

Material Description

Organic Silt

Atterberg Limits (ASTM D 4318)

PL= - LL= - PI= -

Classification

USCS (D 2487)= OL AASHTO (M 145)= -

Coefficients

D₉₀= 0.0692 D₈₅= 0.0666 D₆₀= 0.0558
D₅₀= 0.0518 D₃₀= 0.0209 D₁₅= 0.0039
D₁₀= C_u= C_c=

Remarks

In-Situ Moisture: 134.4%

Date Received: 8-9-21 Date Tested: 8-12-21

Tested By: Mike Bronstein

Checked By: Jeff Young

Title: Branch Manager

* (no specification provided)

Location: SH-SS-01 (EAI Project #230238)
Sample Number: 21-599 Depth: -

Date Sampled: 8-2-21

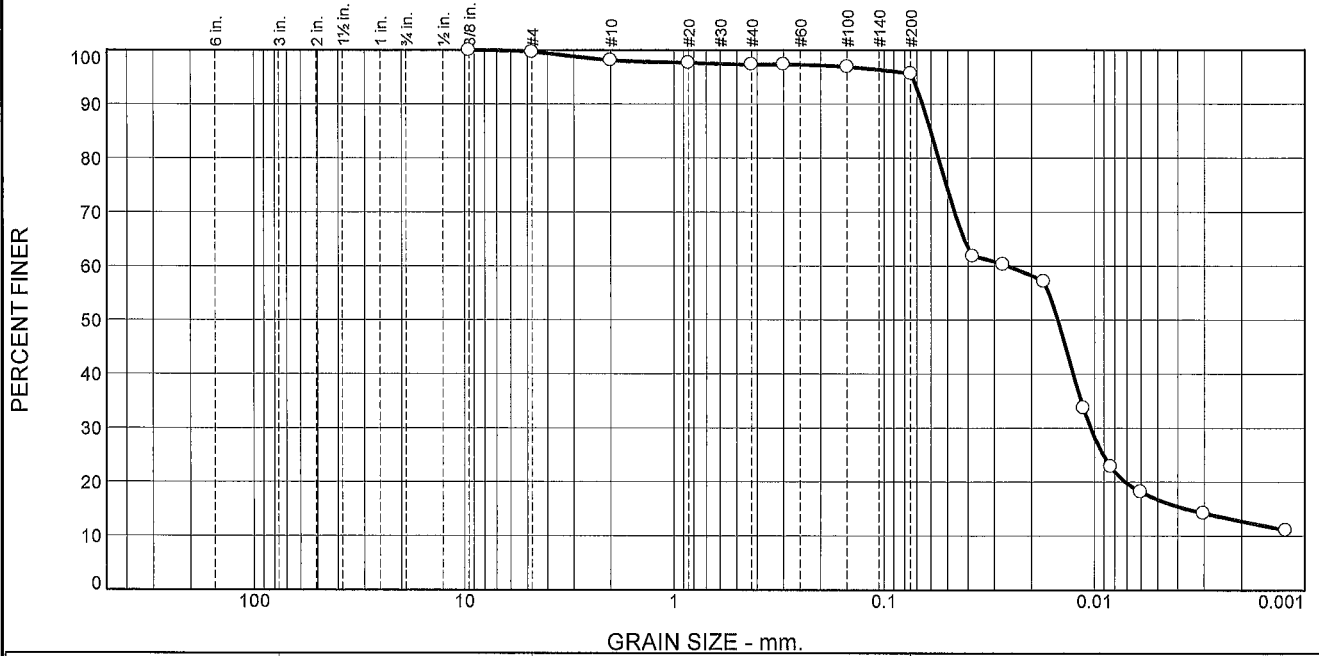


Client: Eastern Analytical, Inc.
Project: Miscellaneous Materials Testing

Project No: 20-07-089

Figure 599A

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.6	0.8	1.7	78.9	16.7

Test Results (ASTM D 422 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/8	100.0		
#4	99.7		
#10	98.1		
#20	97.6		
#40	97.3		
#50	97.3		
#100	96.9		
#200	95.6		
0.0382 mm.	61.8		
0.0272 mm.	60.3		
0.0175 mm.	57.2		
0.0113 mm.	33.7		
0.0084 mm.	22.8		
0.0060 mm.	18.1		
0.0030 mm.	14.2		
0.0012 mm.	11.1		

* (no specification provided)

Material Description

Organic Silt

Atterberg Limits (ASTM D 4318)

PL= - LL= - PI= -

Classification

USCS (D 2487)= OL AASHTO (M 145)= -

Coefficients

D₉₀= 0.0659 D₈₅= 0.0602 D₆₀= 0.0260
D₅₀= 0.0150 D₃₀= 0.0105 D₁₅= 0.0037
D₁₀= C_u= C_c=

Remarks

In-Situ Moisture: 63.3%

Date Received: 8-9-21 Date Tested: 8-12-21

Tested By: Mike Bronstein

Checked By: Jeff Young

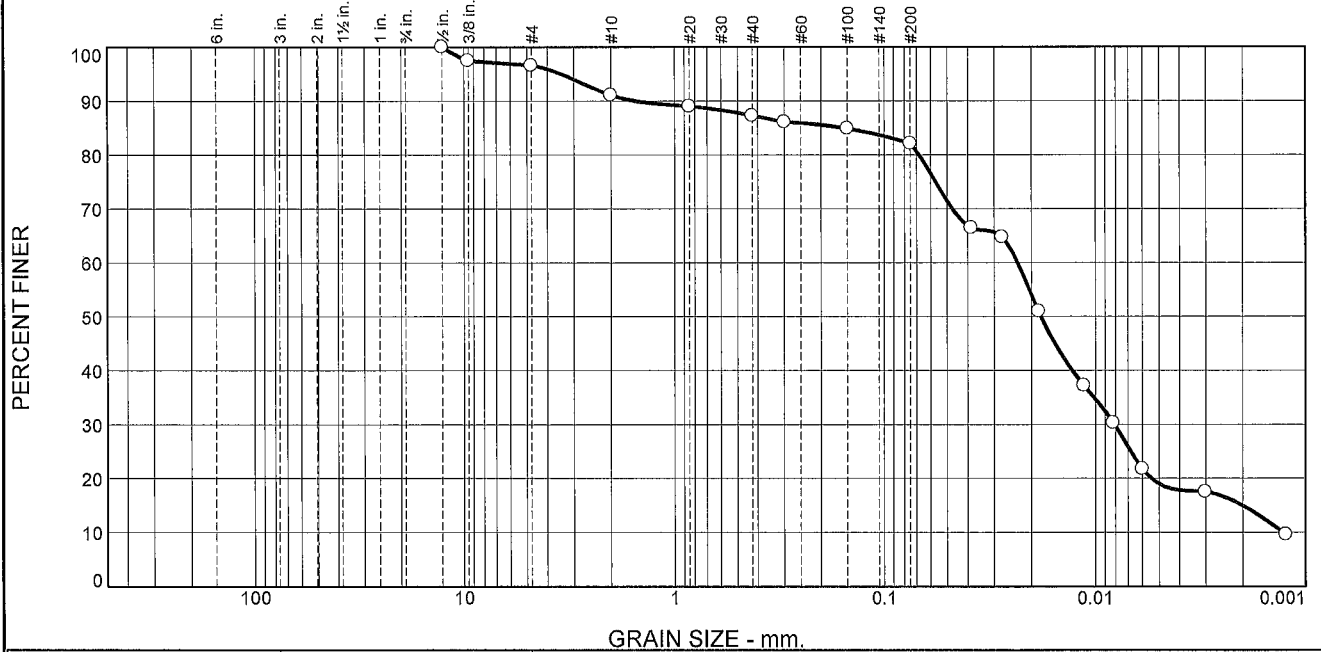
Title: Branch Manager

Location: TR2-SS-01 (EAI Project #230238)
Sample Number: 21-600 Depth: 0-1.2

Date Sampled: 8-3-21

<p>JOHN TURNER CONSULTING</p>	<p>Client: Eastern Analytical, Inc. Project: Miscellaneous Materials Testing Project No: 20-07-089</p>
<p>Figure 600A</p>	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.4	5.5	3.8	5.2	63.2	18.9

Test Results (ASTM D 422 & ASTM D 1140)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1/2	100.0		
3/8	97.5		
#4	96.6		
#10	91.1		
#20	89.0		
#40	87.3		
#50	86.1		
#100	84.9		
#200	82.1		
0.0385 mm.	66.4		
0.0274 mm.	64.7		
0.0185 mm.	50.9		
0.0113 mm.	37.2		
0.0082 mm.	30.3		
0.0060 mm.	21.7		
0.0030 mm.	17.5		
0.0012 mm.	9.6		

* (no specification provided)

Material Description

Organic Silt

Atterberg Limits (ASTM D 4318)

PL= - LL= - PI= -

Classification

USCS (D 2487)= OL AASHTO (M 145)= -

Coefficients

D₉₀= 1.5448 D₈₅= 0.1567 D₆₀= 0.0232
D₅₀= 0.0180 D₃₀= 0.0081 D₁₅= 0.0020
D₁₀= 0.0013 C_u= 18.08 C_c= 2.21

Remarks

In-Situ Moisture: 119.2%

Date Received: 8-9-21 Date Tested: 8-12-21

Tested By: Mike Bronstein

Checked By: Jeff Young

Title: Branch Manager

Location: TR4-SS-01 (EAI Project #230238)
Sample Number: 21-602 Depth: 0-1.3

Date Sampled: 8-2-21



Client: Eastern Analytical, Inc.
Project: Miscellaneous Materials Testing

Project No: 20-07-089

Figure 602A

CHAIN-OF-CUSTODY RECORD



Eastern Analytical, Inc.
professional laboratory and drilling services

EAI ID# 230238

Page 1

Sample ID _____ Date Sampled _____ Matrix _____ aParameters _____ Sample Notes _____

SH-SS-01 | 8/2/2021 17:00 | soil | Subcontract - Grain Size / Sieve ASTM D422

TR2-SS-01 (0-1.2) | 8/3/2021 12:50 | soil | Subcontract - Grain Size / Sieve ASTM D422

TR3-SS-01 (0-1.45) | 8/3/2021 08:25 | soil | Subcontract - Grain Size / Sieve ASTM D422

TR4-SS-01 (0-1.3) | 8/2/2021 15:40 | soil | Subcontract - Grain Size / Sieve ASTM D422

EAI ID# 230238 Project State: ME

Project ID: _____

Company John Turner Consulting
Address 19 Dover Street
Address Dover, NH 03820
Account # _____
Phone # 749-1841

Results Needed: Preferred Date: Standard

QC Deliverables RUSH Due Date: _____

A A+ B B+ C MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

PO #: 55458

EAI ID# 230238

Data Deliverable (circle)

Excel NH EMD EQUIS ME EGAD

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by:

Relinquished by: *John Turner* Date/Time: 8-9-21 0738

Relinquished by: *Les Car* Date/Time: 8-9-21 0915

Relinquished by: _____ Date/Time: _____ Received by: _____

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 customerservice@easternanalytical.com

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

CHAIN-OF-CUSTODY RECORD



Eastern Analytical, Inc.
professional laboratory and drilling services

EAI ID# 230238

Page 2

Sample ID TR5-SS-01 (0-1.3) Date Sampled 8/2/2021 Matrix soil aParameters Subcontract - Grain Size / Sieve ASTM D422

Sample ID TR5-SS-01 (0-1.3) Date Sampled 8/2/2021 Matrix soil aParameters Subcontract - Grain Size / Sieve ASTM D422

SW-SS-01 (0-1.45) | 8/3/2021 | 14:00 | soil | Subcontract - Grain Size / Sieve ASTM D422

EAI ID# 230238 Project State: ME

Project ID:

Company John Turner Consulting
Address 19 Dover Street
Address Dover, NH 03820
Account #
Phone # 749-1841

Results Needed: Preferred Date: Standard

QC Deliverables RUSH Due Date:

A A+ B B+ C MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

PO #: 55458

EAI ID# 230238

Data Deliverable (circle)

Excel NH EMD EQUIS ME EGAD

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by:

Relinquished by: [Signature] Date/Time 8-9-21 0730
Received by: [Signature] Date/Time 8-9-21 0915
Relinquished by: [Signature] Date/Time [Signature] Received by: [Signature]

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Wednesday, August 11, 2021

Attn: Front Office
Eastern Analytical
25 Chenell Drive
Concord, NH 03301

Project ID: 230238
SDG ID: GC191158
Sample ID#s: CI91158 - CI91162

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

A handwritten signature in cursive script that reads "Phyllis Shiller".

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

August 11, 2021

SDG I.D.: GCI91158

Project ID: 230238

Client Id	Lab Id	Matrix
TR2-SS-01 (0-1.2)	CI91158	SOIL
TR3-SS-01 (0-1.45)	CI91159	SOIL
TR4-SS-01 (0-1.3)	CI91160	SOIL
TR5-SS-01 (0-1.3)	CI91161	SOIL
SW-SS-01 (0-1.45)	CI91162	SOIL



Environmental Laboratories, Inc.
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 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report
 August 11, 2021

FOR: Attn: Front Office
 Eastern Analytical
 25 Chenell Drive
 Concord, NH 03301

Sample Information

Matrix: SOIL
 Location Code: EASTANAL-NH
 Rush Request: Standard
 P.O.#: 55457

Custody Information

Collected by:
 Received by: CP
 Analyzed by: see "By" below

Date Time
 08/03/21 12:50
 08/06/21 17:04

Laboratory Data

SDG ID: GCI91158
 Phoenix ID: CI91158

Project ID: 230238
 Client ID: TR2-SS-01 (0-1.2)

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	63		%		08/06/21	AR	SW846-%Solid
Chromium, Hex. (SW3060 digestion)	< 0.62	0.62	mg/Kg	1	08/09/21	ARG/BJA	SW7196A
pH at 25C - Soil	7.57	1.00	pH Units	1	08/07/21 12:18	KDB	SW846 9045D
Redox Potential	-86.0		mV	1	08/07/21	KDB	SM2580B-09

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
 This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.
 If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
 The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

August 11, 2021

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 11, 2021

FOR: Attn: Front Office
 Eastern Analytical
 25 Chenell Drive
 Concord, NH 03301

Sample Information

Matrix: SOIL
 Location Code: EASTANAL-NH
 Rush Request: Standard
 P.O.#: 55457

Custody Information

Collected by:
 Received by: CP
 Analyzed by: see "By" below

Date Time
 08/03/21 8:25
 08/06/21 17:04

Laboratory Data

SDG ID: GCI91158
 Phoenix ID: CI91159

Project ID: 230238
 Client ID: TR3-SS-01 (0-1.45)

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	61		%		08/06/21	AR	SW846-%Solid
Chromium, Hex. (SW3060 digestion)	< 0.64	0.64	mg/Kg	1	08/09/21	ARG/BJA	SW7196A
pH at 25C - Soil	7.39	1.00	pH Units	1	08/07/21 12:18	KDB	SW846 9045D
Redox Potential	-131		mV	1	08/07/21	KDB	SM2580B-09

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
 This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.
 If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director

August 11, 2021

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 11, 2021

FOR: Attn: Front Office
 Eastern Analytical
 25 Chenell Drive
 Concord, NH 03301

Sample Information

Matrix: SOIL
 Location Code: EASTANAL-NH
 Rush Request: Standard
 P.O.#: 55457

Custody Information

Collected by:
 Received by: CP
 Analyzed by: see "By" below

Date Time
 08/02/21 15:40
 08/06/21 17:04

Laboratory Data

SDG ID: GCI91158
 Phoenix ID: CI91160

Project ID: 230238
 Client ID: TR4-SS-01 (0-1.3)

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	47		%		08/06/21	AR	SW846-%Solid
Chromium, Hex. (SW3060 digestion)	< 0.82	0.82	mg/Kg	1	08/09/21	ARG/BJA	SW7196A
pH at 25C - Soil	7.27	1.00	pH Units	1	08/07/21 12:18	KDB	SW846 9045D
Redox Potential	-146		mV	1	08/07/21	KDB	SM2580B-09

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
 This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.
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Phyllis Shiller, Laboratory Director

August 11, 2021

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report
 August 11, 2021

FOR: Attn: Front Office
 Eastern Analytical
 25 Chenell Drive
 Concord, NH 03301

Sample Information

Matrix: SOIL
 Location Code: EASTANAL-NH
 Rush Request: Standard
 P.O.#: 55457

Custody Information

Collected by:
 Received by: CP
 Analyzed by: see "By" below

Date Time
 08/02/21 13:10
 08/06/21 17:04

Laboratory Data

SDG ID: GCI91158
 Phoenix ID: CI91161

Project ID: 230238
 Client ID: TR5-SS-01 (0-1.3)

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	50		%		08/06/21	AR	SW846-%Solid
Chromium, Hex. (SW3060 digestion)	< 0.76	0.76	mg/Kg	1	08/09/21	ARG/BJA	SW7196A
pH at 25C - Soil	7.33	1.00	pH Units	1	08/07/21 12:18	KDB	SW846 9045D
Redox Potential	-114		mV	1	08/07/21	KDB	SM2580B-09

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
 This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

August 11, 2021

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 11, 2021

FOR: Attn: Front Office
 Eastern Analytical
 25 Chenell Drive
 Concord, NH 03301

Sample Information

Matrix: SOIL
 Location Code: EASTANAL-NH
 Rush Request: Standard
 P.O.#: 55457

Custody Information

Collected by:
 Received by: CP
 Analyzed by: see "By" below

Date Time
 08/03/21 14:00
 08/06/21 17:04

Laboratory Data

SDG ID: GCI91158
 Phoenix ID: CI91162

Project ID: 230238
 Client ID: SW-SS-01 (0-1.45)

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	54		%		08/06/21	AR	SW846-%Solid
Chromium, Hex. (SW3060 digestion)	< 0.72	0.72	mg/Kg	1	08/09/21	ARG/BJA	SW7196A
pH at 25C - Soil	7.41	1.00	pH Units	1	08/07/21 12:18	KDB	SW846 9045D
Redox Potential	-153		mV	1	08/07/21	KDB	SM2580B-09

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
 This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.
 If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director

August 11, 2021

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
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 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

August 11, 2021

QA/QC Data

SDG I.D.: GCI91158

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 586942 (mg/kg), QC Sample No: CI90865 40X (CI91158, CI91159, CI91160, CI91161, CI91162)													
Chromium, Hexavalent - Soil													
Chromium, Hexavalent	BRL	0.40	<0.40	<0.39	NC	92.2						85 - 115	30
Chromium, Hexavalent (Ins)						99.1			92.2			85 - 115	30
Chromium, Hexavalent (Sol)						94.4			89.1			85 - 115	30



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QA/QC Report

August 11, 2021

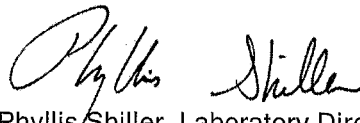
QA/QC Data

SDG I.D.: GCI91158

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 586921 (PH), QC Sample No: CI90870 (CI91158, CI91159, CI91160, CI91161, CI91162)													
pH at 25C - Soil			7.04	7.03	0.10							85 - 115	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

- RPD - Relative Percent Difference
- LCS - Laboratory Control Sample
- LCSD - Laboratory Control Sample Duplicate
- MS - Matrix Spike
- MS Dup - Matrix Spike Duplicate
- NC - No Criteria
- Intf - Interference


 Phyllis Shiller, Laboratory Director
 August 11, 2021

Wednesday, August 11, 2021

Criteria: None

State: ME

Sample No Acode Phoenix Analyte

Criteria

Result

RL

Criteria

RL

Criteria

Analysis Units

*** No Data to Display ***

Sample Criteria Exceedances Report

GCI91158 - EASTANAL-NH

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedances. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedance information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

August 11, 2021

SDG I.D.: GCI91158

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

CHAIN-OF-CUSTODY RECORD

WCFP 2.0



EAID# 230238

Page 1

Sample ID _____ Date Sampled _____ Matrix _____ aParameters _____ Sample Notes _____

TR2-SS-01 (0-1.2) | 8/3/2021 12:50 | soil | Subcontract - Hexavalent Chromium Soil 30607196 | 91158

TR3-SS-01 (0-1.45) | 8/3/2021 08:25 | soil | Subcontract - Hexavalent Chromium Soil 30607196 | 91159

TR4-SS-01 (0-1.3) | 8/2/2021 15:40 | soil | Subcontract - Hexavalent Chromium Soil 30607196 | 91160

TR5-SS-01 (0-1.3) | 8/2/2021 13:10 | soil | Subcontract - Hexavalent Chromium Soil 30607196 | 91161

EAID# 230238 Project State: ME Project ID:

Results Needed: Preferred Date: Standard RUSH Due Date: _____

PO #: 55457 EAID# 230238

Data Deliverable (circle) Excel NH EMD EQUIS ME EGAD

Company Phoenix Environmental Labs
 Address 587 East Middle Turnpike
 Address Manchester, CT 06040
 Account # _____
 Phone # (860) 645-1102

QC Deliverables A A+ B B+ C MA MCP
 Notes about project:
 Email login confirmation, pdf of results and invoice to customer.service@easternanalytical.com

Call prior to analyzing, if RUSH charges will be applied.
 Samples Collected by: [Signature] 8-6-21
 Relinquished by: [Signature] 8-6-21
 Date/Time 8-6-21 13:25
 Received by: [Signature]

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 customer.service@easternanalytical.com
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CHAIN-OF-CUSTODY RECORD

WCIIP 2.0



EAI ID# 230238

Page 2

Sample ID _____ Date Sampled _____ Matrix _____ aParameters _____

SW-SS-01 (0-1.45) | 8/3/2021 | soil | Subcontract - Hexavalent Chromium Soil 3060/7196
14:00

9/11/02

Sample Notes

EAI ID# 230238 Project State: ME

Project ID:

Company Phoenix Environmental Labs
Address 587 East Middle Turnpike
Manchester, CT 06040
Account #
Phone # (860) 645-1102

Results Needed: Preferred Date: Standard

RUSH Due Date: _____

QC Deliverables
 A A+ B B+ C MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

PO #: 55457

EAI ID# 230238

Data Deliverable (circle)

Excel NH EMD EQUIS ME EGAD

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by: S&C

Retiquished by: S&C Date/Time: 8/21/02 11:00

Relinquished by: [Signature] Date/Time: 8/21/02 13:00 Received by: [Signature]

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603)228-0525

1-800-287-0525

customerservice@easternanalytical.com

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[Signature] STUANI 1707

