TECHNICAL MEMORANDUM

DATE June 10, 2019 **Project No.** 923-1000-005.5000

TO Jerome Cruz, PhD
Washington State Department of Ecology

CC Landsburg PLP Group

FROM Gary Zimmerman **EMAIL gary_zimmerman@golder.com**

LANDSBURG MINE SITE TRENCH BACKFILL ADDITIONAL SOILS CHARACTERIZATION

This technical memorandum presents the analytical results associated with two additional soil samples collected from the Microsoft excavation site. The two additional soil samples were collected on May 31, 2019 and were collected in accordance with the Trench Backfill Soils Characterization Workplan[1] (Workplan). The samples were collected from test pits dug in accessible portions of Cell 2 at the Microsoft excavation as depicted on the attached Figure 1. Soils sampled from the test pits were generally consistent in composition and were described as silty-fine to medium sand with trace to little sub-rounded fine gravels.

The soil samples were delivered to OnSite Environmental Inc. (OnSite) in Redmond, WA and analyzed for the full list of analytes presented in Table 3-1 of the Workplan. There were no organic compounds detected in any of the soil samples. Chromium was the only metal detected in any of the samples. Chromium has been detected in all the samples collected from the Microsoft site at concentrations ranging from 27 to 45 milligrams per kilogram (mg/kg), which are concentrations typical of natural background soil concentrations (90th percentile concentration of 48 mg/kg) for the Puget Sound Area[2] and below the Model Toxics Control Act (MTCA) Method A Level of 2,000 mg/kg for unrestricted land use.

A copy of the laboratory analytical report is provided in Appendix A.

GOLDER ASSOCIATES INC.

Joseph Xi, PE
Senior Project Engineer

Gary Zimmerman
Principal

JX/GLZ/kt

[1] Golder Associates Inc. (Golder) 2019. Trench Backfill Soils Characterization Workplan, Landsburg Mine Site. Prepared by Golder Associates Inc. April 17, 2019.

[2] Washington State Department of Ecology (Ecology) 1994. Natural Background Soil Metals Concentrations in Washington State. Prepared by Charles San Juan, October 1994.

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200, Redmond, Washington, USA 98052 T: +1 425 883-0777 F: +1 425 882-5498

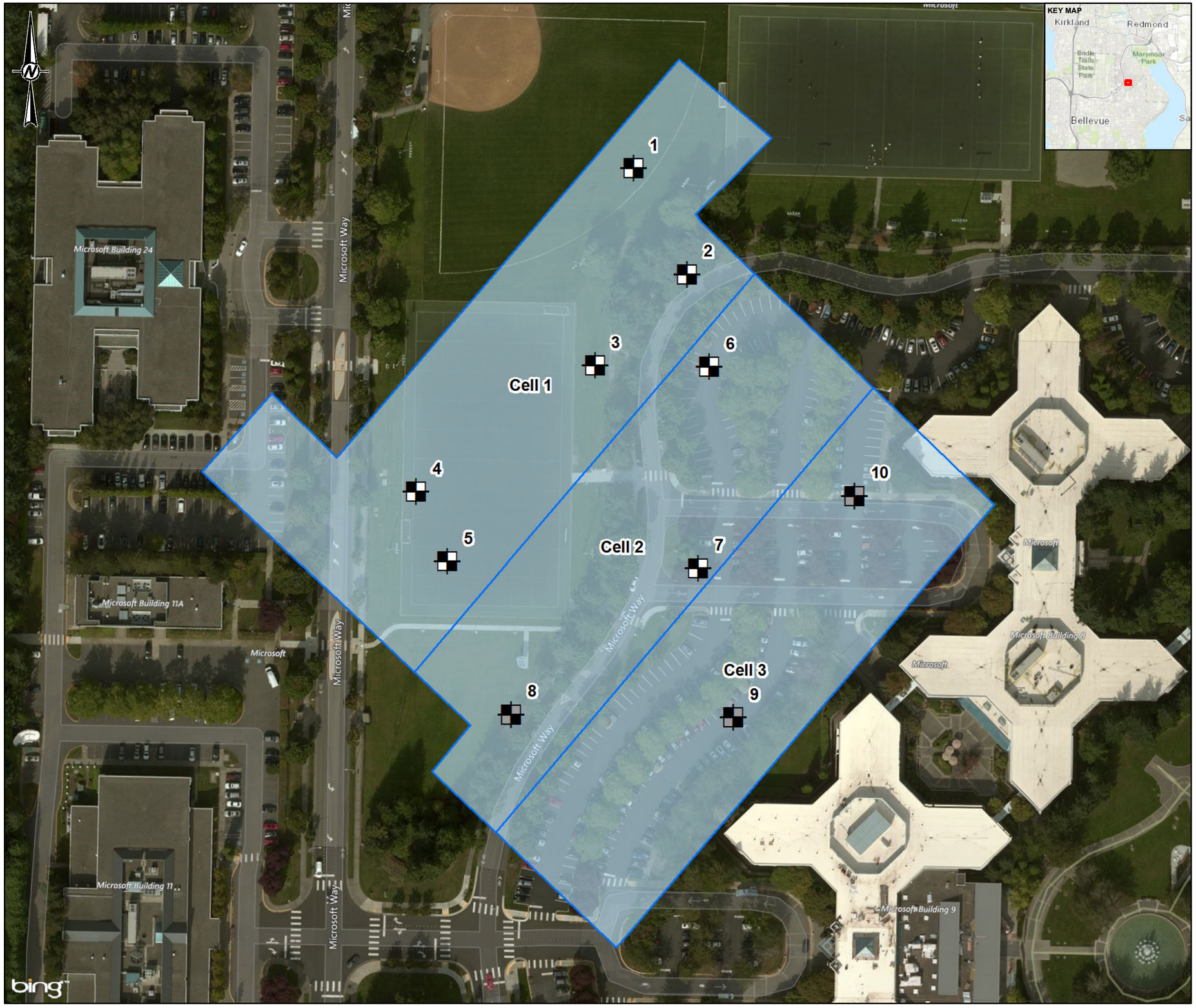
Attachments:

Figure 1: Soil Characterization Locations

Appendix A: Laboratory Analytical Report

v:\projects_1992 projects\923-1000\2019-construction-activities\fill source sampling\tech-memo-second-round\923-1000-005.5000-tm-rev1-fill source sampling-061019.docx

Figure



LEGEND

- TEST PIT
- PROPOSED SUBSEQUENT TEST PIT
- FILL SOURCE AREA

0 100 200

1 IN = 100 FT FEET

NOTE(S)

1. THE FILL SOURCE AREA MEASURES APPROXIMATELY 7.6 ACRES.

REFERENCE(S)

1. GOODFELLOW BROS INC. (EXCAVATION AREA, 2019)
2. GOLDER ASSOCIATES INC. (TEST PITS, 2019)
3 COORDINATE SYSTEM: NAD 1983 STATE PLANE WASHINGTON NORTH (FT)
4. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, DELORME, TOMTOM, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
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CLIENT
LANDSBURG PLP GROUP

PROJECT
LANDSBURG 2019 REMEDIAL ACTIONS

TITLE
SOIL CHARACTERIZATION LOCATIONS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-06-10
DESIGNED	JX
PREPARED	BVJ
REVIEWED	JX
APPROVED	GZ

PROJECT NO.	PHASE	REV.	FIGURE
9231000005	5000	C	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

1 in

PATH: G:\Palmer\Coking\Coal\Landsburg\Mine\WA\9\9_PROJECTS\9231000005_Remedial\Action\5000\02_PRODUCTION\MXD\FIGURES\Rev\C\9231000005_5000_002_F1_RevC_Soil_Character_Locs.mxd PRINTED ON: 2019-06-10 AT: 2:04:03 PM

APPENDIX A

Laboratory Analytical Report

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 7, 2019

Gary Zimmerman
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 923-1000-005 Ph. 5000
Laboratory Reference No. 1905-395

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on May 31, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

Case Narrative

Samples were collected on May 31, 2019 and received by the laboratory on May 31, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

GASOLINE RANGE ORGANICS
NWTPH-Gx

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
Gasoline	**ND**	5.2	NWTPH-Gx	6-3-19	6-3-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*82*	*58-129*				
Client ID:	**7**					
Laboratory ID:	05-395-02					
Gasoline	**ND**	5.3	NWTPH-Gx	6-3-19	6-3-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*79*	*58-129*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

GASOLINE RANGE ORGANICS
NWTPH-Gx
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0603S2					
Gasoline	**ND**	5.0	NWTPH-Gx	6-3-19	6-3-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*77*	*58-129*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-001-02										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*84*	*84*	*58-129*			

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
Diesel Range Organics	**ND**	27	NWTPH-Dx	6-3-19	6-3-19	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	6-3-19	6-3-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**7**					
Laboratory ID:	05-395-02					
Diesel Range Organics	**ND**	27	NWTPH-Dx	6-3-19	6-3-19	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	6-3-19	6-3-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0603S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-3-19	6-3-19	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-3-19	6-3-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-394-01										
	ORIG	DUP									
Diesel Range Organics	**11100**	**9200**	NA	NA		NA		NA	19	NA	
Lube Oil Range Organics	**2930**	**2610**	NA	NA		NA		NA	12	NA	N1
Surrogate:											
o-Terphenyl						---	---	*50-150*			S,S

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

VOLATILE ORGANICS EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
Dichlorodifluoromethane	ND	0.0014	EPA 8260C	6-2-19	6-2-19	
Chloromethane	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Vinyl Chloride	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Bromomethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Chloroethane	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Trichlorofluoromethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloroethene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Acetone	ND	0.0093	EPA 8260C	6-2-19	6-2-19	
Iodomethane	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Carbon Disulfide	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Methylene Chloride	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
(trans) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Methyl t-Butyl Ether	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloroethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Vinyl Acetate	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
2,2-Dichloropropane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
(cis) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
2-Butanone	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Bromochloromethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Chloroform	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,1,1-Trichloroethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Carbon Tetrachloride	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloropropene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Benzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2-Dichloroethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Trichloroethene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2-Dichloropropane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Dibromomethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Bromodichloromethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
2-Chloroethyl Vinyl Ether	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
(cis) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Methyl Isobutyl Ketone	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Toluene	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
(trans) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

VOLATILE ORGANICS EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
1,1,2-Trichloroethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Tetrachloroethene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,3-Dichloropropane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
2-Hexanone	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Dibromochloromethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2-Dibromoethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Chlorobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,1,1,2-Tetrachloroethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Ethylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
m,p-Xylene	ND	0.0019	EPA 8260C	6-2-19	6-2-19	
o-Xylene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Styrene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Bromoform	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Isopropylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Bromobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,1,2,2-Tetrachloroethane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2,3-Trichloropropane	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
n-Propylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
2-Chlorotoluene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
4-Chlorotoluene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,3,5-Trimethylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
tert-Butylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2,4-Trimethylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
sec-Butylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,3-Dichlorobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
p-Isopropyltoluene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,4-Dichlorobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2-Dichlorobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
n-Butylbenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
1,2-Dibromo-3-chloropropane	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
1,2,4-Trichlorobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Hexachlorobutadiene	ND	0.0046	EPA 8260C	6-2-19	6-2-19	
Naphthalene	ND	0.0012	EPA 8260C	6-2-19	6-2-19	
1,2,3-Trichlorobenzene	ND	0.00093	EPA 8260C	6-2-19	6-2-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*76-131*				
Toluene-d8	*94*	*78-128*				
4-Bromofluorobenzene	*113*	*71-130*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

VOLATILE ORGANICS EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**7**					
Laboratory ID:	05-395-02					
Dichlorodifluoromethane	ND	0.0015	EPA 8260C	6-2-19	6-2-19	
Chloromethane	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Vinyl Chloride	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Bromomethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Chloroethane	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Trichlorofluoromethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloroethene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Acetone	ND	0.0097	EPA 8260C	6-2-19	6-2-19	
Iodomethane	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Carbon Disulfide	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Methylene Chloride	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
(trans) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Methyl t-Butyl Ether	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloroethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Vinyl Acetate	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
2,2-Dichloropropane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
(cis) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
2-Butanone	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Bromochloromethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Chloroform	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,1,1-Trichloroethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Carbon Tetrachloride	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloropropene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Benzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2-Dichloroethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Trichloroethene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2-Dichloropropane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Dibromomethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Bromodichloromethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
2-Chloroethyl Vinyl Ether	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
(cis) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Methyl Isobutyl Ketone	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Toluene	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
(trans) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	

Date of Report: June 7, 2019
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VOLATILE ORGANICS EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**7**					
Laboratory ID:	05-395-02					
1,1,2-Trichloroethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Tetrachloroethene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,3-Dichloropropane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
2-Hexanone	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Dibromochloromethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2-Dibromoethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Chlorobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,1,1,2-Tetrachloroethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Ethylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
m,p-Xylene	ND	0.0019	EPA 8260C	6-2-19	6-2-19	
o-Xylene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Styrene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Bromoform	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Isopropylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Bromobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,1,2,2-Tetrachloroethane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2,3-Trichloropropane	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
n-Propylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
2-Chlorotoluene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
4-Chlorotoluene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,3,5-Trimethylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
tert-Butylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2,4-Trimethylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
sec-Butylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,3-Dichlorobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
p-Isopropyltoluene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,4-Dichlorobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2-Dichlorobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
n-Butylbenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
1,2-Dibromo-3-chloropropane	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
1,2,4-Trichlorobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Hexachlorobutadiene	ND	0.0048	EPA 8260C	6-2-19	6-2-19	
Naphthalene	ND	0.0013	EPA 8260C	6-2-19	6-2-19	
1,2,3-Trichlorobenzene	ND	0.00097	EPA 8260C	6-2-19	6-2-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*92*	*76-131*				
Toluene-d8	*90*	*78-128*				
4-Bromofluorobenzene	*104*	*71-130*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

VOLATILE ORGANICS EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0602S1					
Dichlorodifluoromethane	ND	0.0015	EPA 8260C	6-2-19	6-2-19	
Chloromethane	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Bromomethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Chloroethane	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Acetone	ND	0.010	EPA 8260C	6-2-19	6-2-19	
Iodomethane	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Carbon Disulfide	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Methylene Chloride	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Vinyl Acetate	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
2-Butanone	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Bromochloromethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Chloroform	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Benzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Trichloroethene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Dibromomethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Toluene	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

VOLATILE ORGANICS EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0602S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Tetrachloroethene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
2-Hexanone	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Chlorobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Ethylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
m,p-Xylene	ND	0.0020	EPA 8260C	6-2-19	6-2-19	
o-Xylene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Styrene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Bromoform	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Isopropylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Bromobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
n-Propylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
tert-Butylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
sec-Butylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
n-Butylbenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-2-19	6-2-19	
Naphthalene	ND	0.0013	EPA 8260C	6-2-19	6-2-19	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-2-19	6-2-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*91*	*76-131*				
Toluene-d8	*92*	*78-128*				
4-Bromofluorobenzene	*110*	*71-130*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

VOLATILE ORGANICS EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0602S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0453**	**0.0449**	0.0500	0.0500	91	90	57-133	1	18	
Benzene	**0.0468**	**0.0482**	0.0500	0.0500	94	96	71-129	3	16	
Trichloroethene	**0.0482**	**0.0498**	0.0500	0.0500	96	100	71-122	3	16	
Toluene	**0.0464**	**0.0478**	0.0500	0.0500	93	96	74-125	3	15	
Chlorobenzene	**0.0471**	**0.0488**	0.0500	0.0500	94	98	72-120	4	14	
Surrogate:										
Dibromofluoromethane					*90*	*93*	*76-131*			
Toluene-d8					*87*	*94*	*78-128*			
4-Bromofluorobenzene					*108*	*119*	*71-130*			

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
n-Nitrosodimethylamine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Pyridine	**ND**	0.36	EPA 8270D	6-5-19	6-5-19	
Phenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Aniline	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroethyl)ether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Chlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,3-Dichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,4-Dichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Benzyl alcohol	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
1,2-Dichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Methylphenol (o-Cresol)	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroisopropyl)ether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
n-Nitroso-di-n-propylamine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Hexachloroethane	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Nitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Isophorone	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Nitrophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4-Dimethylphenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroethoxy)methane	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4-Dichlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,2,4-Trichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Naphthalene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
4-Chloroaniline	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Hexachlorobutadiene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
4-Chloro-3-methylphenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Methylnaphthalene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
1-Methylnaphthalene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Hexachlorocyclopentadiene	**ND**	0.048	EPA 8270D	6-5-19	6-5-19	
2,4,6-Trichlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,3-Dichloroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4,5-Trichlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Chloronaphthalene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Nitroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,4-Dinitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Dimethylphthalate	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,3-Dinitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,6-Dinitrotoluene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,2-Dinitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Acenaphthylene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
3-Nitroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
2,4-Dinitrophenol	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Acenaphthene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
4-Nitrophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4-Dinitrotoluene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Dibenzofuran	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,3,5,6-Tetrachlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,3,4,6-Tetrachlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Diethylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
4-Chlorophenyl-phenylether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
4-Nitroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Fluorene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
4,6-Dinitro-2-methylphenol	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
n-Nitrosodiphenylamine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,2-Diphenylhydrazine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
4-Bromophenyl-phenylether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Hexachlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Pentachlorophenol	**ND**	0.25	EPA 8270D	6-5-19	6-5-19	
Phenanthrene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Anthracene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Carbazole	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Di-n-butylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Fluoranthene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Benzidine	**ND**	0.36	EPA 8270D	6-5-19	6-5-19	
Pyrene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Butylbenzylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
bis-2-Ethylhexyladipate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
3,3'-Dichlorobenzidine	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Benzo[a]anthracene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Chrysene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
bis(2-Ethylhexyl)phthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Di-n-octylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo(j,k)fluoranthene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Indeno[1,2,3-cd]pyrene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo[g,h,i]perylene	**ND**	0.0072	EPA 8270D/SIM	6-5-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*66*	*21 - 107*				
Phenol-d6	*76*	*30 - 106*				
Nitrobenzene-d5	*82*	*28 - 109*				
2-Fluorobiphenyl	*73*	*37 - 107*				
2,4,6-Tribromophenol	*62*	*39 - 116*				
Terphenyl-d14	*74*	*41 - 113*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**7**					
Laboratory ID:	05-395-02					
n-Nitrosodimethylamine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Pyridine	**ND**	0.36	EPA 8270D	6-5-19	6-5-19	
Phenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Aniline	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroethyl)ether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Chlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,3-Dichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,4-Dichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Benzyl alcohol	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
1,2-Dichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Methylphenol (o-Cresol)	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroisopropyl)ether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
n-Nitroso-di-n-propylamine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Hexachloroethane	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Nitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Isophorone	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Nitrophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4-Dimethylphenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroethoxy)methane	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4-Dichlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,2,4-Trichlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Naphthalene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
4-Chloroaniline	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Hexachlorobutadiene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
4-Chloro-3-methylphenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Methylnaphthalene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
1-Methylnaphthalene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Hexachlorocyclopentadiene	**ND**	0.048	EPA 8270D	6-5-19	6-5-19	
2,4,6-Trichlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,3-Dichloroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4,5-Trichlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Chloronaphthalene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2-Nitroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,4-Dinitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Dimethylphthalate	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,3-Dinitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,6-Dinitrotoluene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,2-Dinitrobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Acenaphthylene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
3-Nitroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**7**					
Laboratory ID:	05-395-02					
2,4-Dinitrophenol	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Acenaphthene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
4-Nitrophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,4-Dinitrotoluene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Dibenzofuran	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,3,5,6-Tetrachlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
2,3,4,6-Tetrachlorophenol	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Diethylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
4-Chlorophenyl-phenylether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
4-Nitroaniline	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Fluorene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
4,6-Dinitro-2-methylphenol	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
n-Nitrosodiphenylamine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
1,2-Diphenylhydrazine	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
4-Bromophenyl-phenylether	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Hexachlorobenzene	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Pentachlorophenol	**ND**	0.25	EPA 8270D	6-5-19	6-5-19	
Phenanthrene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Anthracene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Carbazole	**ND**	0.036	EPA 8270D	6-5-19	6-5-19	
Di-n-butylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Fluoranthene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Benzidine	**ND**	0.36	EPA 8270D	6-5-19	6-5-19	
Pyrene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Butylbenzylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
bis-2-Ethylhexyladipate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
3,3'-Dichlorobenzidine	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Benzo[a]anthracene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Chrysene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
bis(2-Ethylhexyl)phthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Di-n-octylphthalate	**ND**	0.18	EPA 8270D	6-5-19	6-5-19	
Benzo[b]fluoranthene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo(j,k)fluoranthene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo[a]pyrene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Indeno[1,2,3-cd]pyrene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Dibenz[a,h]anthracene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo[g,h,i]perylene	**ND**	0.0073	EPA 8270D/SIM	6-5-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*51*	*21 - 107*				
Phenol-d6	*64*	*30 - 106*				
Nitrobenzene-d5	*64*	*28 - 109*				
2-Fluorobiphenyl	*61*	*37 - 107*				
2,4,6-Tribromophenol	*59*	*39 - 116*				
Terphenyl-d14	*70*	*41 - 113*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
n-Nitrosodimethylamine	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Pyridine	**ND**	0.33	EPA 8270D	6-5-19	6-5-19	
Phenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Aniline	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroethyl)ether	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2-Chlorophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,3-Dichlorobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,4-Dichlorobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Benzyl alcohol	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
1,2-Dichlorobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2-Methylphenol (o-Cresol)	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroisopropyl)ether	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
n-Nitroso-di-n-propylamine	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Hexachloroethane	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Nitrobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Isophorone	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2-Nitrophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,4-Dimethylphenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
bis(2-Chloroethoxy)methane	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,4-Dichlorophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,2,4-Trichlorobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
4-Chloroaniline	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
Hexachlorobutadiene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
4-Chloro-3-methylphenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Hexachlorocyclopentadiene	**ND**	0.044	EPA 8270D	6-5-19	6-5-19	
2,4,6-Trichlorophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,3-Dichloroaniline	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,4,5-Trichlorophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2-Chloronaphthalene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2-Nitroaniline	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,4-Dinitrobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Dimethylphthalate	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,3-Dinitrobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,6-Dinitrotoluene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,2-Dinitrobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
3-Nitroaniline	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
2,4-Dinitrophenol	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
4-Nitrophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,4-Dinitrotoluene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Dibenzofuran	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,3,5,6-Tetrachlorophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
2,3,4,6-Tetrachlorophenol	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Diethylphthalate	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
4-Chlorophenyl-phenylether	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
4-Nitroaniline	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
4,6-Dinitro-2-methylphenol	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
n-Nitrosodiphenylamine	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
1,2-Diphenylhydrazine	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
4-Bromophenyl-phenylether	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Hexachlorobenzene	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Pentachlorophenol	**ND**	0.23	EPA 8270D	6-5-19	6-5-19	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Carbazole	**ND**	0.033	EPA 8270D	6-5-19	6-5-19	
Di-n-butylphthalate	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Benzidine	**ND**	0.33	EPA 8270D	6-5-19	6-5-19	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Butylbenzylphthalate	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
bis-2-Ethylhexyladipate	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
3,3'-Dichlorobenzidine	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
bis(2-Ethylhexyl)phthalate	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
Di-n-octylphthalate	**ND**	0.17	EPA 8270D	6-5-19	6-5-19	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	6-5-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*57*	*21 - 107*				
Phenol-d6	*70*	*30 - 106*				
Nitrobenzene-d5	*73*	*28 - 109*				
2-Fluorobiphenyl	*68*	*37 - 107*				
2,4,6-Tribromophenol	*65*	*39 - 116*				
Terphenyl-d14	*74*	*41 - 113*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

SEMIVOLATILE ORGANICS EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	05-395-01										
	MS	MSD	MS	MSD		MS	MSD				
Phenol	**1.15**	**1.07**	1.33	1.33	ND	86	80	30 - 108	7	34	
2-Chlorophenol	**1.02**	**0.937**	1.33	1.33	ND	77	70	30 - 113	8	38	
1,4-Dichlorobenzene	**0.522**	**0.464**	0.667	0.667	ND	78	70	24 - 116	12	36	
n-Nitroso-di-n-propylamine	**0.586**	**0.557**	0.667	0.667	ND	88	84	34 - 112	5	34	
1,2,4-Trichlorobenzene	**0.579**	**0.539**	0.667	0.667	ND	87	81	34 - 115	7	37	
4-Chloro-3-methylphenol	**1.24**	**1.14**	1.33	1.33	ND	93	86	41 - 117	8	29	
Acenaphthene	**0.545**	**0.514**	0.667	0.667	ND	82	77	41 - 111	6	30	
4-Nitrophenol	**1.14**	**1.06**	1.33	1.33	ND	86	80	30 - 127	7	32	
2,4-Dinitrotoluene	**0.594**	**0.563**	0.667	0.667	ND	89	84	32 - 114	5	31	
Pentachlorophenol	**1.37**	**1.20**	1.33	1.33	ND	103	90	36 - 147	13	34	
Pyrene	**0.534**	**0.495**	0.667	0.667	ND	80	74	33 - 127	8	31	
Surrogate:											
2-Fluorophenol						*73*	*69*	*21 - 107*			
Phenol-d6						*84*	*81*	*30 - 106*			
Nitrobenzene-d5						*92*	*86*	*28 - 109*			
2-Fluorobiphenyl						*80*	*78*	*37 - 107*			
2,4,6-Tribromophenol						*72*	*65*	*39 - 116*			
Terphenyl-d14						*78*	*73*	*41 - 113*			

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
Aroclor 1016	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Aroclor 1221	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Aroclor 1232	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Aroclor 1242	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Aroclor 1248	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Aroclor 1254	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Aroclor 1260	**ND**	0.054	EPA 8082A	6-4-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*76*	*37-122*				
Client ID:	**7**					
Laboratory ID:	05-395-02					
Aroclor 1016	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Aroclor 1221	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Aroclor 1232	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Aroclor 1242	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Aroclor 1248	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Aroclor 1254	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Aroclor 1260	**ND**	0.055	EPA 8082A	6-4-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*83*	*37-122*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Aroclor 1221	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Aroclor 1232	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Aroclor 1242	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Aroclor 1248	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Aroclor 1254	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Aroclor 1260	**ND**	0.050	EPA 8082A	6-4-19	6-4-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*84*	*37-122*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	05-395-01										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	**0.492**	**0.470**	0.500	0.500	ND	**98**	**94**	38-109	5	15	
Surrogate:											
DCB						*82*	*81*	*37-122*			

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Soil
Units: ug/Kg (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
alpha-BHC	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
gamma-BHC	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
beta-BHC	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
delta-BHC	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
Heptachlor	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
Aldrin	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
Heptachlor Epoxide	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
gamma-Chlordane	**ND**	11	EPA 8081B	6-4-19	6-5-19	
alpha-Chlordane	**ND**	11	EPA 8081B	6-4-19	6-5-19	
4,4'-DDE	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endosulfan I	**ND**	5.4	EPA 8081B	6-4-19	6-5-19	
Dieldrin	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endrin	**ND**	11	EPA 8081B	6-4-19	6-5-19	
4,4'-DDD	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endosulfan II	**ND**	11	EPA 8081B	6-4-19	6-5-19	
4,4'-DDT	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endrin Aldehyde	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Methoxychlor	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endosulfan Sulfate	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endrin Ketone	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Toxaphene	**ND**	54	EPA 8081B	6-4-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*76*	*31-97*				
DCB	*94*	*26-105*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Soil
Units: ug/Kg (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**7**					
Laboratory ID:	05-395-02					
alpha-BHC	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
gamma-BHC	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
beta-BHC	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
delta-BHC	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
Heptachlor	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
Aldrin	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
Heptachlor Epoxide	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
gamma-Chlordane	**ND**	11	EPA 8081B	6-4-19	6-5-19	
alpha-Chlordane	**ND**	11	EPA 8081B	6-4-19	6-5-19	
4,4'-DDE	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endosulfan I	**ND**	5.5	EPA 8081B	6-4-19	6-5-19	
Dieldrin	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endrin	**ND**	11	EPA 8081B	6-4-19	6-5-19	
4,4'-DDD	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endosulfan II	**ND**	11	EPA 8081B	6-4-19	6-5-19	
4,4'-DDT	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endrin Aldehyde	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Methoxychlor	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endosulfan Sulfate	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Endrin Ketone	**ND**	11	EPA 8081B	6-4-19	6-5-19	
Toxaphene	**ND**	55	EPA 8081B	6-4-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*78*	*31-97*				
DCB	*88*	*26-105*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

ORGANOCHLORINE PESTICIDES EPA 8081B METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: ug/Kg (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604S1					
alpha-BHC	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
gamma-BHC	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
beta-BHC	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
delta-BHC	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
Heptachlor	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
Aldrin	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
Heptachlor Epoxide	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
gamma-Chlordane	**ND**	10	EPA 8081B	6-4-19	6-5-19	
alpha-Chlordane	**ND**	10	EPA 8081B	6-4-19	6-5-19	
4,4'-DDE	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Endosulfan I	**ND**	5.0	EPA 8081B	6-4-19	6-5-19	
Dieldrin	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Endrin	**ND**	10	EPA 8081B	6-4-19	6-5-19	
4,4'-DDD	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Endosulfan II	**ND**	10	EPA 8081B	6-4-19	6-5-19	
4,4'-DDT	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Endrin Aldehyde	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Methoxychlor	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Endosulfan Sulfate	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Endrin Ketone	**ND**	10	EPA 8081B	6-4-19	6-5-19	
Toxaphene	**ND**	50	EPA 8081B	6-4-19	6-5-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*79*	*31-97*				
DCB	*97*	*26-105*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

ORGANOCHLORINE PESTICIDES EPA 8081B SB/SBD QUALITY CONTROL

Matrix: Soil
Units: ug/Kg (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0604S1										
	SB	SBD	SB	SBD		SB	SBD				
alpha-BHC	**84.1**	**74.2**	100	100	N/A	**84**	**74**	55-94	13	15	
gamma-BHC	**84.7**	**76.1**	100	100	N/A	**85**	**76**	55-97	11	15	
beta-BHC	**74.5**	**70.0**	100	100	N/A	**75**	**70**	50-110	6	15	
delta-BHC	**73.6**	**66.9**	100	100	N/A	**74**	**67**	50-98	10	16	
Heptachlor	**76.4**	**71.5**	100	100	N/A	**76**	**72**	54-111	7	15	
Aldrin	**75.8**	**69.6**	100	100	N/A	**76**	**70**	51-103	9	15	
Heptachlor Epoxide	**73.7**	**70.6**	100	100	N/A	**74**	**71**	49-114	4	15	
gamma-Chlordane	**82.4**	**76.6**	100	100	N/A	**82**	**77**	51-110	7	15	
alpha-Chlordane	**81.3**	**74.7**	100	100	N/A	**81**	**75**	47-114	8	15	
4,4'-DDE	**80.9**	**75.6**	100	100	N/A	**81**	**76**	58-103	7	15	
Endosulfan I	**75.6**	**70.3**	100	100	N/A	**76**	**70**	56-109	7	15	
Dieldrin	**77.1**	**74.1**	100	100	N/A	**77**	**74**	51-112	4	15	
Endrin	**81.4**	**76.7**	100	100	N/A	**81**	**77**	49-117	6	15	
4,4'-DDD	**76.8**	**72.6**	100	100	N/A	**77**	**73**	56-110	6	15	
Endosulfan II	**74.8**	**70.8**	100	100	N/A	**75**	**71**	51-116	5	15	
4,4'-DDT	**107**	**100**	100	100	N/A	**107**	**100**	51-110	7	15	
Endrin Aldehyde	**76.4**	**70.6**	100	100	N/A	**76**	**71**	54-115	8	15	
Methoxychlor	**89.6**	**85.6**	100	100	N/A	**90**	**86**	53-115	5	15	
Endosulfan Sulfate	**76.2**	**71.4**	100	100	N/A	**76**	**71**	52-109	7	15	
Endrin Ketone	**79.1**	**73.5**	100	100	N/A	**79**	**73**	51-112	7	15	
Surrogate:											
TCMX						*70*	*64*	*31-97*			
DCB						*91*	*89*	*26-105*			

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

CHLORINATED ACID HERBICIDES EPA 8151A

Matrix: Soil
Units: ug/Kg (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
Dalapon	**ND**	200	EPA 8151A	6-6-19	6-6-19	
Dicamba	**ND**	10	EPA 8151A	6-6-19	6-6-19	
MCPP	**ND**	1000	EPA 8151A	6-6-19	6-6-19	
MCPA	**ND**	2500	EPA 8151A	6-6-19	6-6-19	
Dichlorprop	**ND**	77	EPA 8151A	6-6-19	6-6-19	
2,4-D	**ND**	10	EPA 8151A	6-6-19	6-6-19	
Pentachlorophenol	**ND**	5.2	EPA 8151A	6-6-19	6-6-19	
2,4,5-TP (Silvex)	**ND**	10	EPA 8151A	6-6-19	6-6-19	
2,4,5-T	**ND**	10	EPA 8151A	6-6-19	6-6-19	
2,4-DB	**ND**	10	EPA 8151A	6-6-19	6-6-19	
Dinoseb	**ND**	10	EPA 8151A	6-6-19	6-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCAA	*68*	*10-114*				
Client ID:	**7**					
Laboratory ID:	05-395-02					
Dalapon	**ND**	200	EPA 8151A	6-6-19	6-6-19	
Dicamba	**ND**	10	EPA 8151A	6-6-19	6-6-19	
MCPP	**ND**	1000	EPA 8151A	6-6-19	6-6-19	
MCPA	**ND**	2600	EPA 8151A	6-6-19	6-6-19	
Dichlorprop	**ND**	77	EPA 8151A	6-6-19	6-6-19	
2,4-D	**ND**	10	EPA 8151A	6-6-19	6-6-19	
Pentachlorophenol	**ND**	5.2	EPA 8151A	6-6-19	6-6-19	
2,4,5-TP (Silvex)	**ND**	10	EPA 8151A	6-6-19	6-6-19	
2,4,5-T	**ND**	10	EPA 8151A	6-6-19	6-6-19	
2,4-DB	**ND**	10	EPA 8151A	6-6-19	6-6-19	
Dinoseb	**ND**	10	EPA 8151A	6-6-19	6-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCAA	*61*	*10-114*				

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

CHLORINATED ACID HERBICIDES EPA 8151A QUALITY CONTROL

Matrix: Soil
Units: ug/Kg (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606S1					
Dalapon	**ND**	180	EPA 8151A	6-6-19	6-6-19	
Dicamba	**ND**	9.4	EPA 8151A	6-6-19	6-6-19	
MCPP	**ND**	940	EPA 8151A	6-6-19	6-6-19	
MCPA	**ND**	2300	EPA 8151A	6-6-19	6-6-19	
Dichlorprop	**ND**	71	EPA 8151A	6-6-19	6-6-19	
2,4-D	**ND**	9.4	EPA 8151A	6-6-19	6-6-19	
Pentachlorophenol	**ND**	4.8	EPA 8151A	6-6-19	6-6-19	
2,4,5-TP (Silvex)	**ND**	9.5	EPA 8151A	6-6-19	6-6-19	
2,4,5-T	**ND**	9.5	EPA 8151A	6-6-19	6-6-19	
2,4-DB	**ND**	9.5	EPA 8151A	6-6-19	6-6-19	
Dinoseb	**ND**	9.5	EPA 8151A	6-6-19	6-6-19	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCAA	*67*	*10-114*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	05-395-02										
	MS	MSD	MS	MSD		MS	MSD				
Dalapon	**319**	**292**	1250	1250	ND	**26**	**23**	10-140	9	35	
Dicamba	**210**	**200**	250	250	ND	**84**	**80**	10-136	5	33	
MCPP	**21600**	**20600**	25000	25000	ND	**86**	**82**	40-140	5	35	
MCPA	**19300**	**14800**	25000	25000	ND	**77**	**59**	40-140	26	35	
Dichlorprop	**212**	**198**	250	250	ND	**85**	**79**	40-140	7	35	
2,4-D	**183**	**158**	250	250	ND	**73**	**63**	10-103	15	31	
Pentachlorophenol	**17.7**	**16.1**	25.0	25.0	ND	**71**	**65**	10-124	9	29	
2,4,5-TP (Silvex)	**223**	**211**	250	250	ND	**89**	**84**	40-140	6	35	
2,4,5-T	**203**	**181**	250	250	ND	**81**	**73**	10-118	11	29	
2,4-DB	**225**	**182**	250	250	ND	**90**	**73**	10-143	21	28	
Dinoseb	**149**	**148**	250	250	ND	**59**	**59**	40-140	1	35	
Surrogate:											
DCAA						*106*	*101*	*10-114*			

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**6**					
Laboratory ID:	05-395-01					
Arsenic	**ND**	11	EPA 6010D	6-3-19	6-3-19	
Cadmium	**ND**	0.54	EPA 6010D	6-3-19	6-3-19	
Chromium	**32**	0.54	EPA 6010D	6-3-19	6-3-19	
Lead	**ND**	5.4	EPA 6010D	6-3-19	6-3-19	
Mercury	**ND**	0.27	EPA 7471B	6-3-19	6-3-19	
Client ID:	**7**					
Laboratory ID:	05-395-02					
Arsenic	**ND**	11	EPA 6010D	6-3-19	6-3-19	
Cadmium	**ND**	0.55	EPA 6010D	6-3-19	6-3-19	
Chromium	**27**	0.55	EPA 6010D	6-3-19	6-3-19	
Lead	**ND**	5.5	EPA 6010D	6-3-19	6-3-19	
Mercury	**ND**	0.27	EPA 7471B	6-3-19	6-3-19	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0603SH2					
Arsenic	**ND**	10	EPA 6010D	6-3-19	6-3-19	
Cadmium	**ND**	0.50	EPA 6010D	6-3-19	6-3-19	
Chromium	**ND**	0.50	EPA 6010D	6-3-19	6-3-19	
Lead	**ND**	5.0	EPA 6010D	6-3-19	6-3-19	
Laboratory ID:	MB0603S3					
Mercury	**ND**	0.25	EPA 7471B	6-3-19	6-3-19	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-395-01										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**29.7**	**24.9**	NA	NA		NA		NA	18	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	05-395-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	05-395-01										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**99.3**	**99.9**	100	100	ND	**99**	**100**	75-125	1	20	
Cadmium	**45.7**	**45.0**	50.0	50.0	ND	**91**	**90**	75-125	2	20	
Chromium	**118**	**114**	100	100	29.7	**88**	**84**	75-125	3	20	
Lead	**234**	**232**	250	250	ND	**94**	**93**	75-125	1	20	
Laboratory ID:	05-395-01										
Mercury	**0.523**	**0.539**	0.500	0.500	0.0171	**101**	**104**	80-120	3	20	

Date of Report: June 7, 2019
Samples Submitted: May 31, 2019
Laboratory Reference: 1905-395
Project: 923-1000-005 Ph. 5000

% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
6	05-395-01	**8**	6-2-19
7	05-395-02	**8**	6-2-19

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Golder
Project Number: 923-1000-005 Ph. 5000
Project Name: Landsburg
Project Manager: Gary Zimmerman
Sampled by: Joseph Xi

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days)
☒ 5 DAY (other)

Laboratory Number: 05-395

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total ~~RCRA~~ Metals (Cadmium) MTCA	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	"1-Apro 3X				% Moisture
1	6	5/31/19	1258	Soil				X	X	X			X		X	X		X	X								X
2	7	5/31/19	1309	↓				X	X	X			X		X	X		X	X								X

	Signature	Company	Date	Time
Relinquished	Joseph Xi	Golder	5/31/19	1400
Received		OSC	5/31/19	1400
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
- Analyze acc. w/ MSA between Golder & Onsite.
- Analyze for COCs in Table 3-1 (see Doc 3.)

Data Package: Standard ☑ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐