



07-Oct-2017

Tom Brunelle  
ERM, Inc  
3352 128th Avenue  
Holland, MI 49424

Re: **USS (0416921)**

Work Order: **17091701**

Dear Tom,

ALS Environmental received 1 sample on 28-Sep-2017 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish".

Electronically approved by: Tom Beamish

Tom Beamish  
Senior Project Manager

Certificate No: MN 998501

### Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

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**Client:** ERM, Inc  
**Project:** USS (0416921)  
**Work Order:** 17091701

**Work Order Sample Summary**

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
17091701-01	Composite Soil Cuttings (20170927)	Soil		09/27/17 15:20	09/28/17 12:50	<input type="checkbox"/>

**Client:** ERM, Inc  
**Project:** USS (0416921)  
**WorkOrder:** 17091701

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

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**Client:** ERM, Inc  
**Project:** USS (0416921)  
**Work Order:** 17091701

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**Case Narrative**

Samples for the above noted Work Order were received on 09/28/17. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

**Extractable Organics:**

No deviations or anomalies were noted.

**Wet Chemistry:**

No deviations or anomalies were noted.

**ALS Group, USA****Date:** 07-Oct-17**Client:** ERM, Inc**Project:** USS (0416921)**Work Order:** 17091701**Sample ID:** Composite Soil Cuttings (20170927)**Lab ID:** 17091701-01**Collection Date:** 09/27/17 03:20 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>PCBS</b>			<b>SW8082</b>		Prep: SW3546 9/29/17 13:37	Analyst: <b>EB</b>
Aroclor 1016	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Aroclor 1221	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Aroclor 1232	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Aroclor 1242	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Aroclor 1248	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Aroclor 1254	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Aroclor 1260	ND		0.078	mg/Kg-dry	1	10/02/17 12:49 AM
Surr: Decachlorobiphenyl	83.3		40-140	%REC	1	10/02/17 12:49 AM
Surr: Tetrachloro-m-xylene	71.8		45-124	%REC	1	10/02/17 12:49 AM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>NW</b>
Moisture	17		0.050	% of sample	1	10/04/17 11:15 AM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Client: ERM, Inc

Work Order: 17091701

Project: USS (0416921)

# QC BATCH REPORT

Batch ID: 108207

Instrument ID GC14

Method: SW8082

<b>MBLK</b>		Sample ID: <b>PBLKS1-108207-108207</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/01/17 10:55 PM</b>		
Client ID:		Run ID: <b>GC14_171001A</b>				SeqNo: <b>4671778</b>		Prep Date: <b>09/29/17</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aroclor 1016	ND	67								
Aroclor 1221	ND	67								
Aroclor 1232	ND	67								
Aroclor 1242	ND	67								
Aroclor 1248	ND	67								
Aroclor 1254	ND	67								
Aroclor 1260	ND	67								
Surr: Decachlorobiphenyl	28.7	0	33.3	0	86.2	40-140	0			
Surr: Tetrachloro-m-xylene	27.86	0	33.3	0	83.7	45-124	0			

<b>LCS</b>		Sample ID: <b>PLCSS1-108207-108207</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/01/17 11:09 PM</b>		
Client ID:		Run ID: <b>GC14_171001A</b>				SeqNo: <b>4671779</b>		Prep Date: <b>09/29/17</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aroclor 1016	617.1	67	833	0	74.1	50-130	0			
Aroclor 1260	573	67	833	0	68.8	50-130	0			
Surr: Decachlorobiphenyl	25.7	0	33.3	0	77.2	40-140	0			
Surr: Tetrachloro-m-xylene	24.4	0	33.3	0	73.3	45-124	0			

<b>MS</b>		Sample ID: <b>17091624-02C MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/01/17 11:38 PM</b>		
Client ID:		Run ID: <b>GC14_171001A</b>				SeqNo: <b>4671781</b>		Prep Date: <b>09/29/17</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aroclor 1016	765	64	801.5	0	95.5	40-140	0			
Aroclor 1260	718.3	64	801.5	0	89.6	40-140	0			
Surr: Decachlorobiphenyl	29.34	0	32.04	0	91.6	40-140	0			
Surr: Tetrachloro-m-xylene	27.49	0	32.04	0	85.8	45-124	0			

<b>MSD</b>		Sample ID: <b>17091624-02C MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>10/01/17 11:52 PM</b>		
Client ID:		Run ID: <b>GC14_171001A</b>				SeqNo: <b>4671782</b>		Prep Date: <b>09/29/17</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Aroclor 1016	791.3	66	828.3	0	95.5	40-140	765	3.38	50	
Aroclor 1260	721.3	66	828.3	0	87.1	40-140	718.3	0.417	50	
Surr: Decachlorobiphenyl	28.85	0	33.11	0	87.1	40-140	29.34	1.67	50	
Surr: Tetrachloro-m-xylene	28.38	0	33.11	0	85.7	45-124	27.49	3.18	50	

The following samples were analyzed in this batch:

17091701-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 17091701  
**Project:** USS (0416921)

## QC BATCH REPORT

Batch ID: **R221519** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R221519</b>				Units: % of sample		Analysis Date: <b>10/04/17 11:15 AM</b>		
Client ID:		Run ID: <b>MOIST_171004B</b>				SeqNo: <b>4678529</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

<b>LCS</b>		Sample ID: <b>LCS-R221519</b>				Units: % of sample		Analysis Date: <b>10/04/17 11:15 AM</b>		
Client ID:		Run ID: <b>MOIST_171004B</b>				SeqNo: <b>4678528</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

<b>DUP</b>		Sample ID: <b>17091761-08B DUP</b>				Units: % of sample		Analysis Date: <b>10/04/17 11:15 AM</b>		
Client ID:		Run ID: <b>MOIST_171004B</b>				SeqNo: <b>4678513</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 20.52 0.050 0 0 0 0-0 20.63 0.535 5

<b>DUP</b>		Sample ID: <b>17091784-01B DUP</b>				Units: % of sample		Analysis Date: <b>10/04/17 11:15 AM</b>		
Client ID:		Run ID: <b>MOIST_171004B</b>				SeqNo: <b>4678523</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 14.44 0.050 0 0 0 0-0 13.91 3.74 5

The following samples were analyzed in this batch:

17091701-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Cincinnati, OH  
+1 513 733 5336

Fort Collins, CO  
+1 970 490 1511

Everett, WA  
+1 425 356 2600

Holland, MI  
+1 616 399 6070

# Chain of Custody Form

Page 1 of 1

COC ID: 37716

Houston, TX  
+1 281 530 5656

Middletown, PA  
+1 717 944 5541

Spring City, PA  
+1 610 948 4903

Salt Lake City, UT  
+1 801 266 7700

South Charleston, WV  
+1 304 356 3168

York, PA  
+1 717 505 5280

## Environmental

Customer Information		Project Information		ALS Project Manager: <u>TBB</u> ALS Work Order #: <u>17091701</u>															
				Parameter/Method Request for Analysis															
Purchase Order		Project Name	<u>USS</u>	A	<u>PCB</u>														
Work Order		Project Number	<u>0416921</u>	B															
Company Name	<u>ERM</u>	Bill To Company	<u>ERM</u>	C															
Send Report To	<u>TMB</u>	Invoice Attn		D															
Address	<u>3352 128th Ave</u>	Address	<u>3352 128th Ave</u>	E															
City/State/Zip	<u>Holland, MI 49424</u>	City/State/Zip	<u>Holland, MI 49424</u>	F															
Phone		Phone		G															
Fax		Fax		H															
e-Mail Address		e-Mail Address		I															
				J															

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	<u>Composite Soil Cuttings (20170921)</u>	<u>9/27/17</u>	<u>15:20</u>	<u>S</u>	<u>8</u>	<u>1</u>	<u>X</u>										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign <u>Dan Rusiecki / Dan Rusiecki</u>		Shipment Method <u>Hand</u>		Turnaround Time in Business Days (BD) <input checked="" type="checkbox"/> 10 BD <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD				Results Due Date:	
Relinquished by: <u>Dan Rusiecki</u>	Date: <u>9/28/17</u>	Time: <u>12:50 PM</u>	Received by: <u>Neal Fisher</u>	Date: <u>9-28-17</u>		Time: <u>12:50</u>		Notes:	
Relinquished by:	Date:	Time:	Received by (Laboratory):	Date:		Time:		Cooler ID	Cooler Temp
Logged by (Laboratory): <u>NJF</u>	Date: <u>9-28-17</u>	Time: <u>1350</u>	Checked by (Laboratory): <u>TBB</u>	Date:		Time:		<u>SR2</u>	<u>3.8</u>
Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035				QC Package: (Check One Box Below)		<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV SW846/VOLP <input type="checkbox"/> Other			

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2012 by ALS Environmental.



Sample Receipt Checklist

Client Name: ERM-HOLL

Date/Time Received: 28-Sep-17 12:50

Work Order: 17091701

Received by: NCF

Checklist completed by Nicole Fredericks  
eSignature

28-Sep-17  
Date

Reviewed by: Tom Bramish  
eSignature

28-Sep-17  
Date

Matrices: Soil

Carrier name: Client

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.8/3.8</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>9/28/2017 1:55:07 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

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Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: