

The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Mark Dennen RIDEM - Office of Waste Management 235 Promenade Street Providence, RI 02908

RE: Portsmouth Town Dump (PLF)

ESS Laboratory Work Order Number: 1409606

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

REVIEWED

By ESS Laboratory at 12:31 pm, Oct 01, 2014

Laurel Stoddard
Laboratory Director

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



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SAMPLE RECEIPT

The following samples were received on September 29, 2014 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C.

Lab Number	Sample Name	Matrix	Analysis
1409606-01	SS-3	Soil	6010C
1409606-02	SS-4	Soil	6010C
1409606-03	SS-5	Soil	6010C
1409606-04	SS-6	Soil	6010C
1409606-05	SS-7	Soil	6010C
1409606-06	SS-8	Soil	6010C
1409606-07	SS-9	Soil	6010C
1409606-08	SS-10	Soil	6010C
1409606-09	SS-11	Soil	6010C



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PROJECT NARRATIVE

Total Metals

CI43001-BSD1 Blank Spike recovery is below lower control limit (B-).

Arsenic (74% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

185 Frances Avenue, Cranston, RI 02910-2211

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Quality

Dependability

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CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint

6010C - ICP

6020A - ICP MS

7010 - Graphite Furnace

7196A - Hexavalent Chromium

7470A - Aqueous Mercury

7471B - Solid Mercury

8011 - EDB/DBCP/TCP

8015D - GRO/DRO

8081B - Pesticides

8082A - PCB

8100M - TPH

8151A - Herbicides

8260B - VOA

8270D - SVOA

8270D SIM - SVOA Low Level

9014 - Cyanide

9038 - Sulfate

9040C - Aqueous pH

9045D - Solid pH (Corrosivity)

9050A - Specific Conductance

9056A - Anions (IC)

9060A - TOC

9095B - Paint Filter

MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP and Graphite Furnace Digestion

3020A - Aqueous ICP MS Digestion

3050B - Solid ICP / Graphite Furnace / ICP MS Digestion

3060A - Solid Hexavalent Chromium Digestion

3510C - Separatory Funnel Extraction

3520C - Liquid / Liquid Extraction

3540C - Manual Soxhlet Extraction

3541 - Automated Soxhlet Extraction

3546 - Microwave Extraction

3580A - Waste Dilution

5030B - Aqueous Purge and Trap

5030C - Aqueous Purge and Trap

5035 - Solid Purge and Trap

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-3

Date Sampled: 09/29/14 10:30

Percent Solids:

93

ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-01

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte Results (MRL) **MDL** Method F/V **Limit** Analyst Analyzed **Batch** Arsenic **19.4** (2.7) 6010C KJK 09/30/14 20:25 CI43001

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-4

Date Sampled: 09/29/14 10:33

Percent Solids:

93

ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-02

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte Results (MRL) **MDL** Method F/V **Limit** Analyst Analyzed **Batch** Arsenic **18.2** (2.4) 6010C KJK 09/30/14 20:30 CI43001

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Quality

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-5

Date Sampled: 09/29/14 10:37

Percent Solids: 93 ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-03

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte Results (MRL) **MDL** Method F/V **Limit** Analyst Analyzed **Batch** Arsenic **22.7** (1.9) 6010C KJK 09/30/14 20:36 CI43001

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Dependability

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-6

Date Sampled: 09/29/14 10:40

Percent Solids: 92 ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-04

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte Results (MRL) **MDL** Method F/V **Limit** Analyst Analyzed **Batch** Arsenic 6010C KJK 09/30/14 20:41 CI43001 **18.9** (2.3)

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-7

Date Sampled: 09/29/14 10:42

Percent Solids: 94 ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-05

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte Results (MRL) **MDL** Method F/V **Limit** Analyst Analyzed **Batch** Arsenic 6010C KJK 09/30/14 20:47 CI43001 10.1 (2.5)

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-8

Date Sampled: 09/29/14 10:46

Percent Solids: 94

ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-06

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

 Analyte Arsenic
 Results (MRL)
 MDL 6010C
 Limit Limit

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-9

Date Sampled: 09/29/14 10:49

Percent Solids:

93

ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-07

Sample Matrix: Soil Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte Results (MRL) **MDL** Method **Limit** Analyst Analyzed **Batch** Arsenic **18.3** (2.5) 6010C KJK 09/30/14 20:57 CI43001

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Quality

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-10 Date Sampled: 09/29/14 10:52

Percent Solids: 95

Extraction Method: 3050B

ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-08

Sample Matrix: Soil Units: mg/kg dry

Total Metals

Analyte Results (MRL) **MDL** Method F/V **Limit** Analyst Analyzed **Batch** Arsenic **21.3** (2.5) 6010C KJK 09/30/14 21:03 CI43001

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Quality

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CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump

Client Sample ID: SS-11 Date Sampled: 09/29/14 10:55

Percent Solids: 93

Extraction Method: 3050B

ESS Laboratory Work Order: 1409606 ESS Laboratory Sample ID: 1409606-09

Sample Matrix: Soil Units: mg/kg dry

Total Metals

 Analyte Arsenic
 Results (MRL)
 MDL 6010C
 Limit 1
 DF 1
 Analyst MJK 09/30/14 21:21
 I/V 2.2
 F/V 100 C143001

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Client Name: RIDEM - Office of Waste Management

Client Project ID: Portsmouth Town Dump ESS Laboratory Work Order: 1409606

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
			Total Meta	ls						
Batch CI43001 - 3050B										
Blank										
Arsenic	ND	2.5	mg/kg wet							
LCS										
Arsenic	124	8.1	mg/kg wet	139.0		89	80-120			
LCS Dup										
Arsenic	103	7.8	mg/kg wet	139.0		74	80-120	18	20	B-



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Client Project ID: Portsmouth Town Dump ESS Laboratory Work Order: 1409606

Notes and Definitions

U	Analyte included in the analysis, but not detected
В-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume

Subcontracted analysis; see attached report

1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

2 Range result excludes concentrations of target analytes eluting in that range. 3

Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

NR No Recovery

F/V

[CALC] Calculated Analyte

Final Volume

SUB Subcontracted analysis; see attached report

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ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002 http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424 http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006 http://datamine2.state.nj.us/DEP OPRA/OpraMain/pi main?mode=pi by site&sort order=PI NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141 Lead Paint, Lead in Children's Metals Jewelry http://www.cpsc.gov/cgi-bin/labapplist.aspx

CHAIN OF CUSTODY

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 www.esslaboratory.com

ESS Laboratory

PDF Other Page Format: Excel __ Access __ Electronic Deliverable Reporting Limits Ium Time Standard Other US no. Standard If faster than 5 days, prior approval by laboratory is required # Other Other Is this project for any of the following: MA-MCP Navy USACE State where samples were collected from:
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*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

10/26/04 B

1 (White) Lab Copy 2 (Yellow) Client Receipt

0211/M/12/15 Date/Time

c//yed by: (\$ignature)

9/29/2014 14:20

Date/Time

Relinquished by: (Signature)

Date/Time

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