



November 5, 2019

Office of Waste Management
RI Department of Environmental Management
235 Promenade Street
Providence, RI 02908
Sent via email: DEM.OWMSiteRemNor@dem.ri.gov

RE: Release Notification
20 West Extension Street in Newport, Rhode Island (AP 32; L: 267)
16 Waites Wharf in Newport, Rhode Island (AP 32; L: 248)
Waites Wharf in Newport, Rhode Island (AP 32; L: 272)
SAGE Project No. S3432

Dear Ms. Owns:

SAGE Environmental, Inc. (SAGE) has prepared a Notification of Release for the following properties (hereinafter "the Site) on behalf of the owner, Tommy Abruzese c/o Harbor Realty:

- 20 West Extension Street in Newport, Rhode Island (AP 32; L: 267)
- 16 Waites Wharf in Newport, Rhode Island (AP 32; L: 248)
- Waites Wharf in Newport, Rhode Island (AP 32; L: 272)

A copy of the Rhode Island Department of Waste Management (RIDEM) Office of Waste Management (OWM) Hazardous Material Release Notification Form has been included as **Attachment 1**. A United States Geological Survey (USGS) Locus Map depicting the Site location is attached as **Figure 1**.

Based on a review of maps obtained from the Rhode Island Geographic Information System (RIGIS) database for the Site and vicinity, groundwater at the Site and immediate surrounding area is classified as **Error! Reference source not found**. Additionally, the Site is not located within any resource areas or protected open spaces.

Limited Subsurface Investigation (LSI) – October 2019

On October 1, 2019 SAGE provided oversight for the advancement of six (6) soil borings (SE-101 through SE-106). In general, soil borings were distributed across each of the three (3) investigated lots. Borings SE-101 and 103 were advanced on lot 272, boring SE-102 was advanced on lot 248 and borings SE-104 through SE-106 were advanced on lot 267. All six (6) of the advanced borings were completed as permanent groundwater monitoring wells. A site plan depicting locations of the boring and monitoring well locations has been included as **Figure 2**.

From the collected soil samples, subsurface conditions were observed, and lithology consisted

predominantly of urban fill material consisting of loose, dark brown to black sand and gravel with brick, coal ash and wood present to a depth of approximately seven to eight feet below surface grade (BSG). Apparent native material consisting of moderately dense, brown to light gray fine sands and silt were encountered beginning at approximately seven to eight feet across all three (3) lots. Groundwater was encountered at depths ranging from approximately 3.5 to 6 feet BSG.

Soil Sample Collection & Laboratory Analytical Results

Surficial soil samples were collected from 0 – 2 feet BSG from all of the six (6) of the borings and laboratory analyzed for total petroleum hydrocarbon (TPH) by Environmental Protection Agency (EPA) Method 8100M, volatile organic compounds (VOCs) by EPA Method 8260C, Resource Conservation Recovery Act (RCRA) 8 total metals and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D. Additionally, soil sample SE-101 (2' – 7') was submitted for similar analyses due to visual observations noted in-field.

As depicted in **Table 1** below, which summarizes soil analytical detections for Lots 248 and 272, select PAHs and lead were identified above the applicable RIDEM Method 1 Residential Direct Exposure Criteria (R-DEC), but below the Industrial/Commercial Direct Exposure Criteria (I/C-DEC). Additionally, one (1) PAH compound, identified as benzo(a)pyrene, and arsenic were detected in all samples above both the RIDEM Method 1 R-DEC and I/C-DEC.

Table 1
Detected Soil Analytical Results
16 Waites Wharf (AP 32, Lots 248 & 272)
Newport, Rhode Island

Sample ID/Date	SE-101 0-2ft		SE-101 2-7ft		SE-102 0-2ft		SE-103 0-2ft		RIDEM Residential Direct Exposure Criteria	RIDEM Industrial/ Commercial Direct Exposure Criteria
	10/01/2019		10/01/2019		10/01/2019		10/01/2019			
Analyte	Sample Result	Reporting Limit	Sample Result	Reporting Limit	Sample Result	Reporting Limit	Sample Result	Reporting Limit		
VOCs - Low (mg/kg)										
Acetone	0.0732	-	0.0538	U	0.0497	U	0.0516	U	7800	10000
PAHs (mg/kg)										
Anthracene	0.369	U	0.47	U	1.44	D	0.773	-	35	10000
Benzo(a)anthracene	1.32	-	1.52	-	3.27	D	2.74	-	0.9	7.8
Benzo(a)pyrene	1.73	-	1.77	-	2.55	D	2.87	-	0.4	0.8
Benzo(b)fluoranthene	1.49	-	1.28	-	2.20	D	2.61	-	0.9	7.8
Benzo(g,h,i)perylene	1.18	-	1.13	-	1.34	D	1.79	-	0.8	10000
Benzo(k)fluoranthene	0.965	-	1.19	-	2.12	D	2.01	-	0.9	78
Chrysene	1.25	-	1.40	-	2.91	D	2.61	-	0.4	780
Dibenzo(a,h)Anthracene	0.320	-	0.315	-	0.531	D	0.583	-	0.4	0.8
Fluoranthene	1.80	-	2.54	-	6.32	D	5.06	-	20	10000
Fluorene	0.369	U	0.47	U	0.855	U, D	0.782	-	28	10000
Indeno(1,2,3-cd)Pyrene	1.06	-	1.02	-	1.33	D	1.72	-	0.9	7.8
Naphthalene	0.460	-	0.47	U	0.429	U, D	0.418	U	54	10000
Phenanthrene	0.573	-	1.05	-	3.73	D	2.86	-	40	10000
Pyrene	1.93	-	2.40	-	4.50	D	3.96	-	13	10000
TPH - ETPH (mg/kg)										
Total Petroleum Hydrocarbons	42.9	-	77.5	-	437	D	385	-	500	2500
Total Metals (mg/kg)										
Arsenic	11.1	-	8.13	-	8.62	-	12.5	-	7	7
Barium	76.1	-	115	-	78.7	-	87.8	-	5500	10000
Cadmium	0.37	U	0.52	U	0.48	U	0.52	U	39	1000
Chromium	5.67	-	7.37	-	11.6	-	11.4	-	1400	10000
Lead	194	-	342	-	246	-	284	-	150	500
Mercury	2.80	D	2.13	D	0.351	-	0.760	D	23	610

Qualifier

Description

U: Undetected

D: Diluted

NE: Standard not established for this substance

Cells with this color indicate: Cases where the analyte was detected but is within the limits provided.

Cells with this color indicate: Cases where the analyte concentration violates one or more of the limits provided. (The violated limits are colored as well.)

Detected soil analytical results for Lot 267 are depicted in **Table 2**, below. Additionally, a summary of compounds detected above laboratory reporting limits in soil borings SE-104 through SE-106 has been included below:

- SE-104 (0' – 2'): Concentrations of select VOCs including 1,2-Dibromo-3-Chloropropane and Vinyl Chloride were detected above the RIDEM Method 1 R-DEC, but below the I/C-DEC. 1,2-Dibromoethane was detected at a concentration above both the RIDEM Method 1 R-DEC and I/C-DEC. Arsenic was detected at a concentration above both the RIDEM Method 1 R-DEC and I/C-DEC. Lead was detected above the RIDEM Method 1 R-DEC but below the I/C-DEC. PAH concentrations, where detected in soil sample SE-104 (0' – 2') were above laboratory reporting limits, but below applicable RIDEM regulatory standards;
- SE-105 (0' – 2'): Concentrations of select PAHs, specifically Benzo(a)pyrene and Chrysene, were detected at a concentration above the RIDEM Method 1 R-DEC, but below the I/C-DEC. Arsenic and lead were detected at a concentration above both the RIDEM Method 1 R-DEC and I/C-DEC. All other detections, were noted, are below the applicable RIDEM regulatory standards;
- SE-106 (0' – 2'): Concentrations of select PAHs were detected above both the RIDEM Method 1 R-DEC and I/C-DEC. Arsenic and lead were detected at a concentration above both the RIDEM Method 1 R-DEC and I/C-DEC. All other detections, were noted, are below the applicable RIDEM regulatory standards.

Copies of the soil laboratory analytical reports has been included as **Attachment 2**.

Table 2
Detected Soil Analytical Results
20 West Extension Street (AP 32, Lots 267)
Newport, Rhode Island

Sample ID/Date	SE-104 0-2ft		SE-105 0-2ft		SE-106 0-2ft		RIDEM Residential Direct Exposure Criteria	RIDEM Industrial/ Commercial Direct Exposure Criteria
	10/01/2019		10/01/2019		10/01/2019			
	Sample Result	Reporting Limit	Sample Result	Reporting Limit	Sample Result	Reporting Limit		
Analyte								
VOCs - Low (mg/kg)								
Acetone	0.0583	-	0.0416	U	0.05	U	7800	10000
VOCs (mg/kg)								
1,2-Dibromo-3-Chloropropane	0.953	U	---	---	---	---	0.5	4.1
1,2-Dibromoethane	0.191	U	---	---	---	---	0.01	0.07
Acetone	0.740	J	---	---	---	---	7800	10000
Methylene Chloride	0.227	J	---	---	---	---	45	760
Naphthalene	0.0457	J	---	---	---	---	54	10000
Tetrachloroethene	0.421	-	---	---	---	---	12	110
Trichloroethene	1.33	-	---	---	---	---	13	520
Vinyl Chloride	0.191	U	---	---	---	---	0.02	3
PAHs (mg/kg)								
2-Methylnaphthalene	0.416	U	0.415	U	0.962	-	123	10000
Acenaphthene	0.416	U	0.415	U	3.18	-	43	10000
Acenaphthylene	0.416	U	0.415	U	0.367	U	23	10000
Anthracene	0.416	U	0.415	U	6.49	-	35	10000
Benzo(a)anthracene	0.416	U	0.519	-	16.4	D	0.9	7.8
Benzo(a)pyrene	0.305	-	0.603	-	12.4	D	0.4	0.8
Benzo(b)fluoranthene	0.416	U	0.527	-	13.3	D	0.9	7.8
Benzo(g,h,i)perylene	0.416	U	0.432	-	5.87	-	0.8	10000
Benzo(k)fluoranthene	0.416	U	0.458	-	9.75	D	0.9	78
Chrysene	0.303	-	0.608	-	15.4	D	0.4	780
Dibenzo(a,h)Anthracene	0.209	U	0.208	U	3.07	-	0.4	0.8
Fluoranthene	0.721	-	1.00	-	35.1	D	20	10000
Fluorene	0.416	U	0.415	U	3.23	-	28	10000
Indeno(1,2,3-cd)Pyrene	0.416	U	0.415	U	5.68	-	0.9	7.8
Naphthalene	0.416	U	0.415	U	1.45	-	54	10000
Phenanthrene	0.630	-	0.511	-	31.1	D	40	10000
Pyrene	0.733	-	1.00	-	27.9	D	13	10000
TPH - ETPH (mg/kg)								
Total Petroleum Hydrocarbons	126	-	107	-	459	-	500	2500
Total Metals (mg/kg)								
Arsenic	11.7	-	9.67	-	23.1	-	7	7
Barium	168	-	225	-	189	-	5500	10000
Cadmium	0.74	-	1.02	-	0.65	-	39	1000
Chromium	11.2	-	18.0	-	13.5	-	1400	10000
Lead	483	-	763	-	502	-	150	500
Mercury	1.46	D	1.21	D	0.756	D	23	610

Qualifier

Description

- U: Undetected
- J: Reported between MDL and MRL
- D: Diluted
- NE: Standard not established for this substance

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Cells with this color indicate: Cases where the analyte concentration violates one or more of the limits provided. (The violated limits are colored as well.)

Groundwater Sample Collection & Analytical Results

On October 4, 2019, SAGE returned to the Site to complete a round of groundwater sampling from the six (6) installed monitoring wells. The monitoring well locations are identified on **Figure 2**. Prior to sample collection, SAGE gauged each well utilizing a Geotech® Electronic Interface Probe to determine depth to groundwater and to assess the groundwater surface to evaluate for the potential presence of separate-phase petroleum (SPP). SPP was not detected during gauging of any of the wells sampled. Next, each well was purged utilizing a modified version of the EPA Region 1 Standard Operating Procedure titled "Low Stress (low-flow) Purging and Sampling Procedure for the Collection of Groundwater Samples peristaltic pump to remove fine-grained sediments from Monitoring Wells" Revision 3, July 19, 2010, which included the removal of a minimum of three (3) static well volumes prior to sample collection in the vicinity of the well screen and allow the free flow of groundwater into the well. Once purged, groundwater samples were collected from each monitoring well, placed in a cooler on ice, and transported under chain-of-custody protocol to a State-certified laboratory for VOCs analysis.

As depicted in **Table 3**, which summarizes groundwater analytical detections for Lots 248 and 272, and **Table 4**, which summarizes groundwater analytical detections for Lots 267, no detections detected above the applicable RIDEM Method 1 GB Groundwater Objectives (GWOs) in any of the monitoring wells.

Copies of the soil laboratory analytical reports has been included as **Attachment 3**.

Table 3
Detected Groundwater Analytical Results
16 Waites Wharf (AP 32, Lots 248 & 272)
Newport, Rhode Island

Sample ID/Date	SE-101 MW		SE-102 MW		SE-103 MW		RIDEM Method 1
	10/04/2019		10/04/2019		10/04/2019		GB Groundwater
Analyte	Sample Result	Reporting Limit	Sample Result	Reporting Limit	Sample Result	Reporting Limit	
VOCs (mg/L)							
1,2-Dibromo-3-Chloropropane	0.005	U	0.005	U	0.005	U	0.002
1,2-Dibromoethane	0.001	U	0.001	U	0.001	U	NE
Isopropylbenzene	0.0047	-	0.001	U	0.001	U	NE
Naphthalene	0.0018	-	0.001	U	0.001	U	NE
n-Propylbenzene	0.0028	-	0.001	U	0.001	U	NE
sec-Butylbenzene	0.0033	-	0.001	U	0.001	U	NE

Qualifier Description

U: Undetected

NE: Standard not established for this substance

Cells with this color indicate: Cases where the analyte was detected but is within the limits provided.

Cells with this color indicate: Cases where the analyte concentration violates one or more of the limits provided. (The violated limits are colored as well.)

Table 4
Detected Groundwater Analytical Results
20 West Extension Street (AP 32, Lots 267)
Newport, Rhode Island

Sample ID/Date	SE-104 MW		SE-105 MW		SE-106 MW		RIDEM Method 1
	10/04/2019		10/04/2019		10/04/2019		GB Groundwater
Analyte	Sample Result	Reporting Limit	Sample Result	Reporting Limit	Sample Result	Reporting Limit	
VOCs (mg/L)							
1,2-Dibromo-3-Chloropropane	0.005	U	0.005	U	0.005	U	0.002
1,2-Dibromoethane	0.001	U	0.001	U	0.001	U	NE
Trichloroethene	0.0026	-	0.001	U	0.001	U	0.54

Qualifier Description

U: Undetected

NE: Standard not established for this substance

Cells with this color indicate: Cases where the analyte was detected but is within the limits provided.

Cells with this color indicate: Cases where the analyte concentration violates one or more of the limits provided. (The violated limits are colored as well.)

Should you have questions, comments or require additional information, please do not hesitate to contact the undersigned.

Sincerely,
SAGE Environmental, Inc.

Daniel Boynes
Daniel Boynes
Project Manager

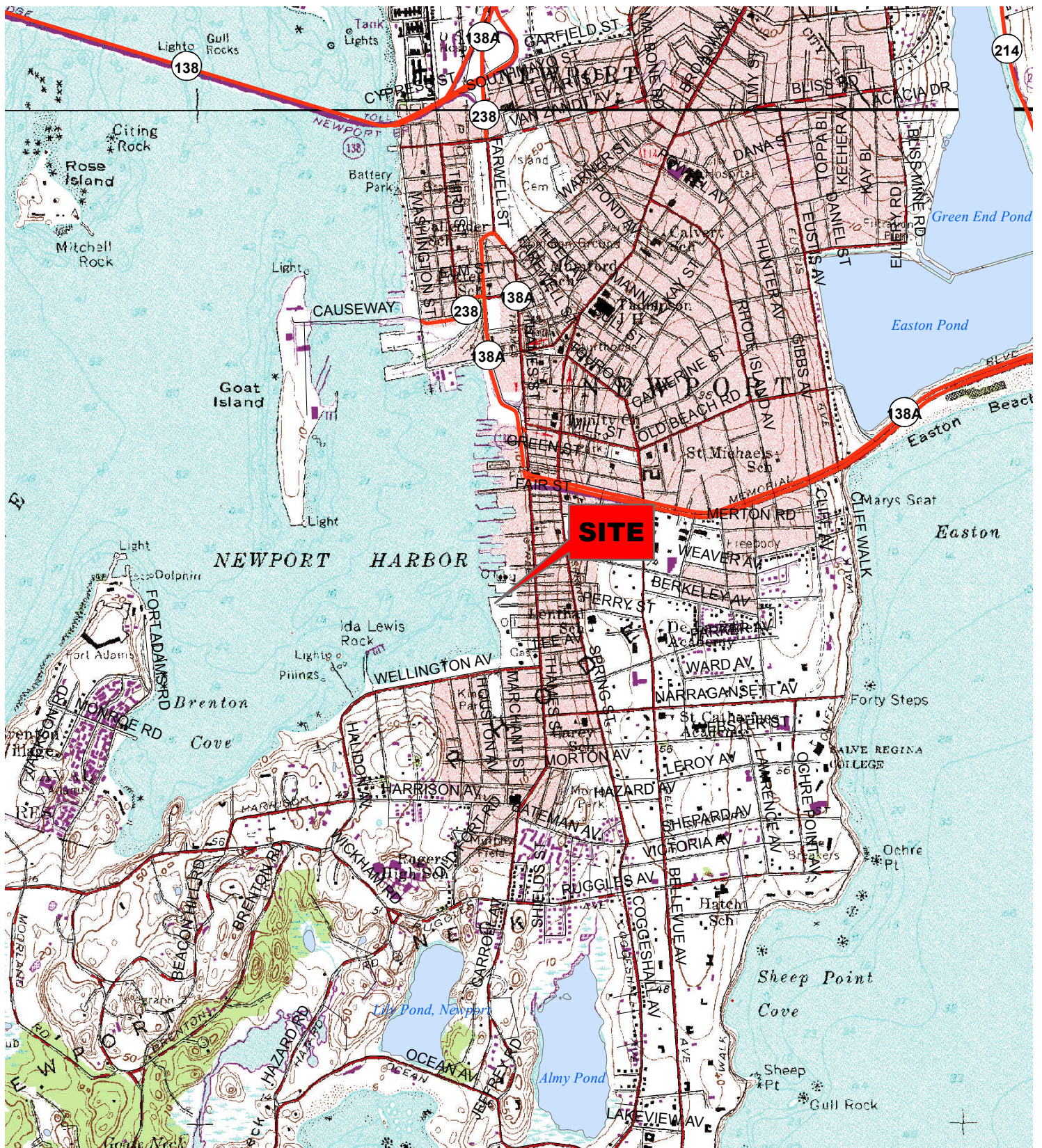
Jacob H. Butterworth
Jacob H. Butterworth, MS, LSP
Vice President

DB:JB/alm

Figure 1: USGS Locus Map
Figure 2: Site Plan

Attachment 1 – Hazardous Material Release Notification Form
Attachment 2 – Soil Laboratory Analytical Reports (October 1, 2019)
Attachment 3 – Groundwater Laboratory Analytical Reports (October 4, 2019)

FIGURES



USGS QUADRANGLE
NEWPORT, RHODE ISLAND



★ Site Location

USGS Quadrangle Site Location Map

25 Waite's Wharf
Newport, Rhode Island

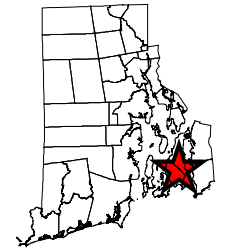
Date: 09/26/2019
Job#: S3432
Created By: ALM

0 25 50 100 Miles

Data Provided by RIGIS




Figure 1





8 ★ Site Location

Legend

-  Monitoring Well Locations
-  Approximate Property Boundary
-  Extent of Contamination



0 5 10 20 Feet

Data Provided by RIGIS
Orthoimagery provided by nearmap.com

Site Plan

Waites Wharf
Newport, Rhode Island

Date: 10/3/2019
Job#: S2935
Created By: ALM/SMS

Figure 2



ATTACHMENT 1

Appendix C
OFFICE OF WASTE MANAGEMENT –
SITE REMEDIATION SECTION
HAZARDOUS MATERIAL RELEASE NOTIFICATION FORM

THIS FORM IS NOT TO BE USED TO REPORT AN IMMINENT HAZARD

1. Notifier Information

Name: SAGE Environmental, Inc.
Address: 172 Armistice Boulevard, Pawtucket, RI

Phone: 401-723-9900

Email: sage@sage-enviro.com

Status: Environmental Professional Owner Operator Secured Creditor Voluntary

If Environmental Professional is selected, please supply the follow information for your client below:

Name: Tommy Abruzese c/o Harbor Realty LLC
Address: 39 Agar Street, Yonkers, NY 10701

Phone: 914-714-4257

Email: agaroffice@aol.com, cc: davidmslye@gmail.com

Status: Owner Operator Secured Creditor Voluntary

2. Property Information

Name of Site:
Site Address: 20 West Extension & 16 Waites Wharf, Newport, RI

Plat/Lot Numbers: Assessor's Plat 32, Lots 248, 267 & 272

Approximate Acreage of Property: 0.47

Latitude/Longitude: 41.479298, -71.315292 & 41.479934, -71.315146

Site Land Usage Type: Residential Industrial/Commercial

Location of Release: Throughout Site, See attached figure

(Attach site sketch as necessary)

3. Release Information

Date of Discovery: October 10, 2019

Source: Urban fill

Release Media: Soil

Hazardous Materials and Concentrations: Select volatile organic compounds (VOCs), select polynuclear aromatic hydrocarbons (PAHs), Arsenic & Lead. See attached Cover Letter for concentrations & Analytical Reports

(Attach certificates of analysis as necessary)

Extent of Contamination: Throughout the Site

Approximate acreage of Contaminated Area: 0.47 Acres

4. Resource Information

Site Land Usage: Industrial/Commercial Residential
Adjacent Land Usage: Industrial/Commercial Residential
Site Groundwater Class: GA/GAA GB
Adjacent Groundwater Class: GA/GAA GB
(if different than site groundwater classification within 500 feet)
Nearest Surface Water or Wetland:
 Less Than 500 Feet Greater Than 500 Feet
Potential for adverse impact No Yes/No

5. Potentially Responsible Parties

Name: Tommy Abruzese c/o Harbor Realty LLC
Address: 39 Agar Street, Yonkers, NY 10701

Status: Owner Operator Other:

Name: _____
Address: _____

Status: Owner Operator Other:

6. Measures Taken or Proposed to be Taken in Response to Release
Advancement of soil borings & groundwater monitoring wells. Sampling of surfacial soils and groundwater.

Check all that apply: Site Investigation Short-Term/Emergency EXPRESS Dig & Haul

7. Other Significant Remarks about Release (Will a background determination be made?)
N/A

Signature: *Daniel Boynes* Date: 11/05/2019
Title: SAGE Environmental, Inc., Project Manager

ATTACHMENT 2



CERTIFICATE OF ANALYSIS

Dan Boynes
Sage Environmental, inc.
172 Armistice Boulevard
Pawtucket, RI 02860

RE: Waites Wharf Newport (S2935)
ESS Laboratory Work Order Number: 19J0111

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.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 5:16 pm, Oct 10, 2019

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 TNI and relative state standards, 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.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

SAMPLE RECEIPT

The following samples were received on October 03, 2019 for the analyses specified on the enclosed Chain of Custody Record.

The DI water vials for sample 19J0111-01 were received cracked and therefore, could not be used for the low-level VOA analysis. A low-level sample was prepared in the laboratory. Both the DI water and Methanol analyses were performed for this sample and reported in the report.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
19J0111-01	SE-104 0-2ft	Soil	6010C, 7471B, 8100M, 8260B, 8260B Low, 8270D PAH
19J0111-02	SE-105 0-2ft	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D PAH
19J0111-03	SE-106 0-2ft	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D PAH



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

PROJECT NARRATIVE

8270D Polynuclear Aromatic Hydrocarbons

C9J0075-TUN1 [Benzidine tailing factor >2.](#)
C9J0170-CCV1 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)
p-Terphenyl-d14 (22% @ 20%)
C9J0170-TUN1 [Benzidine tailing factor >2.](#)
C9J0170-TUN1 [Pentachlorophenol tailing factor > 2.](#)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[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](#)



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

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
- 8015C - 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
- MADEP 18-2.1 - VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / 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
- 5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	11.7 (2.05)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455
Barium	168 (2.05)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455
Cadmium	0.74 (0.41)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455
Chromium	11.2 (0.82)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455
Lead	483 (4.11)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455
Mercury	1.46 (0.664)		7471B		20	MKS	10/08/19 12:45	0.74	40	CJ90456
Selenium	ND (4.11)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455
Silver	ND (0.41)		6010C		1	BJV	10/08/19 0:28	3.02	100	CJ90455



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,1,2,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1,4-Dioxane	ND (0.0886)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
1-Chlorohexane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
2-Butanone	ND (0.0443)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
2-Chlorotoluene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
2-Hexanone	ND (0.0443)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
4-Chlorotoluene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
4-Methyl-2-Pentanone	ND (0.0443)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Acetone	0.0583 (0.0443)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Benzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Bromobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Bromodichloromethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Bromoform	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Bromomethane	ND (0.0089)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Carbon Disulfide	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Chlorobenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Chloroethane	ND (0.0089)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Chloroform	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Chloromethane	ND (0.0089)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Dibromochloromethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Dibromomethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Diethyl Ether	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Di-isopropyl ether	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Ethylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Isopropylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Methylene Chloride	ND (0.0221)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Naphthalene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
n-Butylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
n-Propylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
sec-Butylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Styrene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
tert-Butylbenzene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Tetrachloroethene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Tetrahydrofuran	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport
 Client Sample ID: SE-104 0-2ft
 Date Sampled: 10/01/19 12:30
 Percent Solids: 81
 Initial Volume: 7
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
 ESS Laboratory Sample ID: 19J0111-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Trichloroethene	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Vinyl Acetate	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Vinyl Chloride	ND (0.0089)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Xylene O	ND (0.0044)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Xylene P,M	ND (0.0089)		8260B Low		1	10/04/19 12:40	C9J0097	CJ90401
Xylenes (Total)	ND (0.00886)		8260B Low		1	10/04/19 12:40		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	122 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	86 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	115 %		70-130
<i>Surrogate: Toluene-d8</i>	106 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 26.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,1,1-Trichloroethane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,1,2,2-Tetrachloroethane	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,1,2-Trichloroethane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,1-Dichloroethane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,1-Dichloroethene	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,1-Dichloropropene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2,3-Trichlorobenzene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2,3-Trichloropropane	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2,4-Trichlorobenzene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2,4-Trimethylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2-Dibromo-3-Chloropropane	ND (0.953)	0.191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2-Dibromoethane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2-Dichlorobenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2-Dichloroethane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,2-Dichloropropane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,3,5-Trimethylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,3-Dichlorobenzene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,3-Dichloropropane	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,4-Dichlorobenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1,4-Dioxane - Screen	ND (38.1)	36.2	8260B		1	10/07/19 12:16	C9J0138	CJ90743
1-Chlorohexane	ND (0.191)	0.0762	8260B		1	10/07/19 12:16	C9J0138	CJ90743
2,2-Dichloropropane	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
2-Butanone	ND (0.953)	0.648	8260B		1	10/07/19 12:16	C9J0138	CJ90743
2-Chlorotoluene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
2-Hexanone	ND (0.953)	0.286	8260B		1	10/07/19 12:16	C9J0138	CJ90743
4-Chlorotoluene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
4-Isopropyltoluene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
4-Methyl-2-Pentanone	ND (0.953)	0.305	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Acetone	J 0.740 (0.953)	0.515	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Benzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Bromobenzene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 26.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Bromodichloromethane	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Bromoform	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Bromomethane	ND (0.191)	0.0762	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Carbon Disulfide	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Carbon Tetrachloride	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Chlorobenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Chloroethane	ND (0.191)	0.0762	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Chloroform	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Chloromethane	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
cis-1,2-Dichloroethene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
cis-1,3-Dichloropropene	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Dibromochloromethane	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Dibromomethane	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Dichlorodifluoromethane	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Diethyl Ether	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Di-isopropyl ether	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Ethyl tertiary-butyl ether	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Ethylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Hexachlorobutadiene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Isopropylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Methyl tert-Butyl Ether	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Methylene Chloride	J 0.227 (0.381)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Naphthalene	J 0.0457 (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
n-Butylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
n-Propylbenzene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
sec-Butylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Styrene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
tert-Butylbenzene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Tertiary-amyl methyl ether	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Tetrachloroethene	0.421 (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Tetrahydrofuran	ND (0.953)	0.305	8260B		1	10/07/19 12:16	C9J0138	CJ90743



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 26.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
trans-1,2-Dichloroethene	ND (0.191)	0.0572	8260B		1	10/07/19 12:16	C9J0138	CJ90743
trans-1,3-Dichloropropene	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Trichloroethene	1.33 (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Trichlorofluoromethane	ND (0.191)	0.0762	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Vinyl Acetate	ND (0.191)	0.0953	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Vinyl Chloride	ND (0.191)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Xylene O	ND (0.191)	0.0191	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Xylene P,M	ND (0.381)	0.0381	8260B		1	10/07/19 12:16	C9J0138	CJ90743
Xylenes (Total)	ND (0.381)		8260B		1	10/07/19 12:16		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>117 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>123 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>115 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>121 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/3/19 19:51

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	126 (47.5)		8100M		1	10/05/19 15:16	C9J0040	CJ90334
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		69 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 0-2ft
Date Sampled: 10/01/19 12:30
Percent Solids: 81
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 10/3/19 19:45

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Acenaphthene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Acenaphthylene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Anthracene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Benzo(a)anthracene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Benzo(a)pyrene	0.305 (0.209)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Benzo(b)fluoranthene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Benzo(g,h,i)perylene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Benzo(k)fluoranthene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Chrysene	0.303 (0.209)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Dibenzo(a,h)Anthracene	ND (0.209)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Fluoranthene	0.721 (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Fluorene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Indeno(1,2,3-cd)Pyrene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Naphthalene	ND (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Phenanthrene	0.630 (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322
Pyrene	0.733 (0.416)		8270D PAH		1	10/09/19 16:55	C9J0170	CJ90322

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	71 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	68 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	69 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	76 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 0-2ft
Date Sampled: 10/01/19 13:30
Percent Solids: 82

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	9.67 (2.41)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455
Barium	225 (2.41)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455
Cadmium	1.02 (0.48)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455
Chromium	18.0 (0.96)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455
Lead	763 (4.82)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455
Mercury	1.21 (0.559)		7471B		20	MKS	10/08/19 12:48	0.86	40	CJ90456
Selenium	ND (4.82)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455
Silver	ND (0.48)		6010C		1	BJV	10/08/19 0:32	2.52	100	CJ90455



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 0-2ft
Date Sampled: 10/01/19 13:30
Percent Solids: 82
Initial Volume: 7.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,1,2,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1,4-Dioxane	ND (0.0832)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
1-Chlorohexane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
2-Butanone	ND (0.0416)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
2-Chlorotoluene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
2-Hexanone	ND (0.0416)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
4-Chlorotoluene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
4-Methyl-2-Pentanone	ND (0.0416)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Acetone	ND (0.0416)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Benzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Bromobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 0-2ft
Date Sampled: 10/01/19 13:30
Percent Solids: 82
Initial Volume: 7.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Bromodichloromethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Bromoform	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Bromomethane	ND (0.0083)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Carbon Disulfide	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Chlorobenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Chloroethane	ND (0.0083)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Chloroform	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Chloromethane	ND (0.0083)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Dibromochloromethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Dibromomethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Dichlorodifluoromethane	ND (0.0083)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Diethyl Ether	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Di-isopropyl ether	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Ethylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Isopropylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Methylene Chloride	ND (0.0208)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Naphthalene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
n-Butylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
n-Propylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
sec-Butylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Styrene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
tert-Butylbenzene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Tetrachloroethene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Tetrahydrofuran	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 0-2ft
Date Sampled: 10/01/19 13:30
Percent Solids: 82
Initial Volume: 7.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Trichloroethene	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Vinyl Acetate	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Vinyl Chloride	ND (0.0083)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Xylene O	ND (0.0042)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Xylene P,M	ND (0.0083)		8260B Low		1	10/04/19 13:05	C9J0097	CJ90401
Xylenes (Total)	ND (0.00832)		8260B Low		1	10/04/19 13:05		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>128 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 0-2ft
Date Sampled: 10/01/19 13:30
Percent Solids: 82
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/19 11:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	107 (45.3)		8100M		1	10/05/19 15:47	C9J0040	CJ90411
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		78 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 0-2ft
Date Sampled: 10/01/19 13:30
Percent Solids: 82
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 10/3/19 19:45

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Acenaphthene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Acenaphthylene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Anthracene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Benzo(a)anthracene	0.519 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Benzo(a)pyrene	0.603 (0.208)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Benzo(b)fluoranthene	0.527 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Benzo(g,h,i)perylene	0.432 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Benzo(k)fluoranthene	0.458 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Chrysene	0.608 (0.208)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Dibenzo(a,h)Anthracene	ND (0.208)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Fluoranthene	1.00 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Fluorene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Indeno(1,2,3-cd)Pyrene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Naphthalene	ND (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Phenanthrene	0.511 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322
Pyrene	1.00 (0.415)		8270D PAH		1	10/09/19 17:25	C9J0170	CJ90322

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	66 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	64 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	67 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	64 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 0-2ft
Date Sampled: 10/01/19 14:30
Percent Solids: 88

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	23.1 (2.28)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455
Barium	189 (2.28)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455
Cadmium	0.65 (0.46)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455
Chromium	13.5 (0.91)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455
Lead	502 (4.56)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455
Mercury	0.756 (0.279)		7471B		10	MKS	10/08/19 12:50	0.81	40	CJ90456
Selenium	ND (4.56)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455
Silver	ND (0.46)		6010C		1	BJV	10/08/19 0:36	2.5	100	CJ90455



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 0-2ft
Date Sampled: 10/01/19 14:30
Percent Solids: 88
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,1,2,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1,4-Dioxane	ND (0.100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
1-Chlorohexane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
2-Butanone	ND (0.0500)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
2-Chlorotoluene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
2-Hexanone	ND (0.0500)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
4-Chlorotoluene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
4-Methyl-2-Pentanone	ND (0.0500)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Acetone	ND (0.0500)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Benzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Bromobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport
 Client Sample ID: SE-106 0-2ft
 Date Sampled: 10/01/19 14:30
 Percent Solids: 88
 Initial Volume: 5.7
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
 ESS Laboratory Sample ID: 19J0111-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Bromodichloromethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Bromoform	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Bromomethane	ND (0.0100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Carbon Disulfide	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Chlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Chloroethane	ND (0.0100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Chloroform	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Chloromethane	ND (0.0100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Dibromochloromethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Dibromomethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Diethyl Ether	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Di-isopropyl ether	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Ethylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Isopropylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Methylene Chloride	ND (0.0250)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Naphthalene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
n-Butylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
n-Propylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
sec-Butylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Styrene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
tert-Butylbenzene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Tetrachloroethene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Tetrahydrofuran	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 0-2ft
Date Sampled: 10/01/19 14:30
Percent Solids: 88
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Trichloroethene	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Vinyl Acetate	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Vinyl Chloride	ND (0.0100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Xylene O	ND (0.0050)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Xylene P,M	ND (0.0100)		8260B Low		1	10/04/19 13:31	C9J0097	CJ90401
Xylenes (Total)	ND (0.0100)		8260B Low		1	10/04/19 13:31		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>129 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>115 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 0-2ft
Date Sampled: 10/01/19 14:30
Percent Solids: 88
Initial Volume: 20.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0111
ESS Laboratory Sample ID: 19J0111-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/19 11:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	459 (41.3)		8100M		1	10/05/19 16:19	C9J0040	CJ90411
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		98 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport
 Client Sample ID: SE-106 0-2ft
 Date Sampled: 10/01/19 14:30
 Percent Solids: 88
 Initial Volume: 15.5
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 19J0111
 ESS Laboratory Sample ID: 19J0111-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 10/3/19 19:45

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.962 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Acenaphthene	3.18 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Acenaphthylene	ND (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Anthracene	6.49 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Benzo(a)anthracene	16.4 (3.67)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Benzo(a)pyrene	12.4 (1.84)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Benzo(b)fluoranthene	13.3 (3.67)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Benzo(g,h,i)perylene	5.87 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Benzo(k)fluoranthene	9.75 (3.67)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Chrysene	15.4 (1.84)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Dibenzo(a,h)Anthracene	3.07 (0.184)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Fluoranthene	35.1 (3.67)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Fluorene	3.23 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Indeno(1,2,3-cd)Pyrene	5.68 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Naphthalene	1.45 (0.367)		8270D PAH		1	10/09/19 17:53	C9J0170	CJ90322
Phenanthrene	31.1 (3.67)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322
Pyrene	27.9 (3.67)		8270D PAH		10	10/10/19 2:34	C9J0170	CJ90322

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	62 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	62 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	62 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CJ90455 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet
Barium	ND	2.50	mg/kg wet
Cadmium	ND	0.50	mg/kg wet
Chromium	ND	1.00	mg/kg wet
Lead	ND	5.00	mg/kg wet
Selenium	ND	5.00	mg/kg wet
Silver	ND	0.50	mg/kg wet

LCS

Arsenic	125	9.62	mg/kg wet	128.0	98	80-120
Barium	589	9.62	mg/kg wet	536.0	110	80-120
Cadmium	90.6	1.92	mg/kg wet	99.00	91	80-120
Chromium	115	3.85	mg/kg wet	116.0	99	80-120
Lead	290	19.2	mg/kg wet	277.0	105	80-120
Selenium	236	19.2	mg/kg wet	242.0	97	80-120
Silver	63.4	1.92	mg/kg wet	64.30	99	80-120

LCS Dup

Arsenic	118	7.94	mg/kg wet	128.0	92	80-120	5	20
Barium	519	7.94	mg/kg wet	536.0	97	80-120	13	20
Cadmium	86.5	1.59	mg/kg wet	99.00	87	80-120	5	20
Chromium	107	3.17	mg/kg wet	116.0	92	80-120	7	20
Lead	265	15.9	mg/kg wet	277.0	96	80-120	9	20
Selenium	225	15.9	mg/kg wet	242.0	93	80-120	5	20
Silver	60.3	1.59	mg/kg wet	64.30	94	80-120	5	20

Batch CJ90456 - 7471B

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	3.33	0.347	mg/kg wet	3.120	107	80-120
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LCS Dup

Mercury	3.33	0.309	mg/kg wet	3.120	107	80-120	0.1	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethene	ND	0.0050	mg/kg wet
1,1-Dichloropropene	ND	0.0050	mg/kg wet
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

1,2,3-Trichloropropane	ND	0.0050	mg/kg wet
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet
1,2-Dibromoethane	ND	0.0050	mg/kg wet
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet
1,2-Dichloroethane	ND	0.0050	mg/kg wet
1,2-Dichloropropane	ND	0.0050	mg/kg wet
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet
1,3-Dichloropropane	ND	0.0050	mg/kg wet
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet
1,4-Dioxane	ND	0.100	mg/kg wet
1-Chlorohexane	ND	0.0050	mg/kg wet
2,2-Dichloropropane	ND	0.0050	mg/kg wet
2-Butanone	ND	0.0500	mg/kg wet
2-Chlorotoluene	ND	0.0050	mg/kg wet
2-Hexanone	ND	0.0500	mg/kg wet
4-Chlorotoluene	ND	0.0050	mg/kg wet
4-Isopropyltoluene	ND	0.0050	mg/kg wet
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet
Acetone	ND	0.0500	mg/kg wet
Benzene	ND	0.0050	mg/kg wet
Bromobenzene	ND	0.0050	mg/kg wet
Bromochloromethane	ND	0.0050	mg/kg wet
Bromodichloromethane	ND	0.0050	mg/kg wet
Bromoform	ND	0.0050	mg/kg wet
Bromomethane	ND	0.0100	mg/kg wet
Carbon Disulfide	ND	0.0050	mg/kg wet
Carbon Tetrachloride	ND	0.0050	mg/kg wet
Chlorobenzene	ND	0.0050	mg/kg wet
Chloroethane	ND	0.0100	mg/kg wet
Chloroform	ND	0.0050	mg/kg wet
Chloromethane	ND	0.0100	mg/kg wet
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet
Dibromochloromethane	ND	0.0050	mg/kg wet
Dibromomethane	ND	0.0050	mg/kg wet
Dichlorodifluoromethane	ND	0.0100	mg/kg wet
Diethyl Ether	ND	0.0050	mg/kg wet
Di-isopropyl ether	ND	0.0050	mg/kg wet
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet
Ethylbenzene	ND	0.0050	mg/kg wet
Hexachlorobutadiene	ND	0.0050	mg/kg wet
Isopropylbenzene	ND	0.0050	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0569		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: Dibromofluoromethane	0.0531		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0499		mg/kg wet	0.05000		100	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,1-Trichloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2,2-Tetrachloroethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,1,2-Trichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
1,1-Dichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
1,1-Dichloropropene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
1,2,3-Trichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,3-Trichloropropane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,4-Trimethylbenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dibromo-3-Chloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dibromoethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichloroethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
1,3,5-Trimethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,3-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
1,3-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

1,4-Dioxane	0.984	0.100	mg/kg wet	1.000		98	70-130			
1-Chlorohexane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
2-Butanone	0.277	0.0500	mg/kg wet	0.2500		111	70-130			
2-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
2-Hexanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
4-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.261	0.0500	mg/kg wet	0.2500		105	70-130			
Acetone	0.269	0.0500	mg/kg wet	0.2500		108	70-130			
Benzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Bromochloromethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
Bromodichloromethane	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Bromomethane	0.0430	0.0100	mg/kg wet	0.05000		86	70-130			
Carbon Disulfide	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Carbon Tetrachloride	0.0594	0.0050	mg/kg wet	0.05000		119	70-130			
Chlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Chloroethane	0.0496	0.0100	mg/kg wet	0.05000		99	70-130			
Chloroform	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Chloromethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
cis-1,2-Dichloroethene	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
cis-1,3-Dichloropropene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Dibromochloromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromomethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Dichlorodifluoromethane	0.0420	0.0100	mg/kg wet	0.05000		84	70-130			
Diethyl Ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Di-isopropyl ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Ethyl tertiary-butyl ether	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Hexachlorobutadiene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Isopropylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Methyl tert-Butyl Ether	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Methylene Chloride	0.0511	0.0250	mg/kg wet	0.05000		102	70-130			
Naphthalene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
n-Butylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
n-Propylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
tert-Butylbenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Tertiary-amyl methyl ether	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrachloroethene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Toluene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

trans-1,2-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
trans-1,3-Dichloropropene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Trichloroethene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Trichlorofluoromethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Acetate	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
Vinyl Chloride	0.0493	0.0100	mg/kg wet	0.05000		99	70-130			
Xylene O	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Xylene P,M	0.0971	0.0100	mg/kg wet	0.1000		97	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0573		mg/kg wet	0.05000		115	70-130			
Surrogate: 4-Bromofluorobenzene	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0564		mg/kg wet	0.05000		113	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	10	25	
1,1,1-Trichloroethane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1,2-Trichloroethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
1,1-Dichloroethane	0.0595	0.0050	mg/kg wet	0.05000		119	70-130	5	25	
1,1-Dichloroethene	0.0612	0.0050	mg/kg wet	0.05000		122	70-130	7	25	
1,1-Dichloropropene	0.0593	0.0050	mg/kg wet	0.05000		119	70-130	6	25	
1,2,3-Trichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	11	25	
1,2,3-Trichloropropane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
1,2,4-Trichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	11	25	
1,2,4-Trimethylbenzene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
1,2-Dibromoethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
1,2-Dichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	9	25	
1,2-Dichloroethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	5	25	
1,2-Dichloropropane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
1,3,5-Trimethylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	8	25	
1,3-Dichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
1,3-Dichloropropane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	8	25	
1,4-Dichlorobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
1,4-Dioxane	1.08	0.100	mg/kg wet	1.000		108	70-130	9	20	
1-Chlorohexane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	11	25	
2,2-Dichloropropane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
2-Butanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130	5	25	
2-Chlorotoluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
2-Hexanone	0.268	0.0500	mg/kg wet	0.2500		107	70-130	9	25	
4-Chlorotoluene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	13	25	
4-Isopropyltoluene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	9	25	
4-Methyl-2-Pentanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130	7	25	
Acetone	0.295	0.0500	mg/kg wet	0.2500		118	70-130	9	25	
Benzene	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
Bromobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	10	25	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

Bromochloromethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	7	25	
Bromodichloromethane	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	5	25	
Bromoform	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	9	25	
Bromomethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130	7	25	
Carbon Disulfide	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	5	25	
Carbon Tetrachloride	0.0625	0.0050	mg/kg wet	0.05000		125	70-130	5	25	
Chlorobenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
Chloroethane	0.0520	0.0100	mg/kg wet	0.05000		104	70-130	5	25	
Chloroform	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	5	25	
Chloromethane	0.0484	0.0100	mg/kg wet	0.05000		97	70-130	5	25	
cis-1,2-Dichloroethene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
cis-1,3-Dichloropropene	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	7	25	
Dibromochloromethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
Dibromomethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	6	25	
Dichlorodifluoromethane	0.0437	0.0100	mg/kg wet	0.05000		87	70-130	4	25	
Diethyl Ether	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	9	25	
Di-isopropyl ether	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	7	25	
Ethyl tertiary-butyl ether	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	7	25	
Ethylbenzene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	10	25	
Hexachlorobutadiene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	10	25	
Isopropylbenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Methylene Chloride	0.0539	0.0250	mg/kg wet	0.05000		108	70-130	5	25	
Naphthalene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	12	25	
n-Butylbenzene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
n-Propylbenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
sec-Butylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	9	25	
Styrene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
tert-Butylbenzene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Tertiary-amyl methyl ether	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Tetrachloroethene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
Tetrahydrofuran	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
Toluene	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
trans-1,2-Dichloroethene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	7	25	
trans-1,3-Dichloropropene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
Trichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	6	25	
Trichlorofluoromethane	0.0581	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
Vinyl Acetate	0.0622	0.0050	mg/kg wet	0.05000		124	70-130	9	25	
Vinyl Chloride	0.0516	0.0100	mg/kg wet	0.05000		103	70-130	5	25	
Xylene O	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	9	25	
Xylene P,M	0.106	0.0100	mg/kg wet	0.1000		106	70-130	9	25	
Surrogate: 1,2-Dichloroethane-d4	0.0555		mg/kg wet	0.05000		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Dibromofluoromethane	0.0555		mg/kg wet	0.05000		111	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CJ90743 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CJ90743 - 5035

Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	0.0740	0.400	mg/kg wet							J
Naphthalene	0.0460	0.200	mg/kg wet							J
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	5.40		mg/kg wet	5.000		108	70-130			
Surrogate: 4-Bromofluorobenzene	5.49		mg/kg wet	5.000		110	70-130			
Surrogate: Dibromofluoromethane	5.10		mg/kg wet	5.000		102	70-130			
Surrogate: Toluene-d8	5.18		mg/kg wet	5.000		104	70-130			

LCS

1,1,1,2-Tetrachloroethane	1.83	0.200	mg/kg wet	2.000		92	70-130			
1,1,1-Trichloroethane	2.11	0.200	mg/kg wet	2.000		105	70-130			
1,1,2,2-Tetrachloroethane	2.19	0.200	mg/kg wet	2.000		109	70-130			
1,1,2-Trichloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,1-Dichloroethane	2.40	0.200	mg/kg wet	2.000		120	70-130			
1,1-Dichloroethene	2.33	0.200	mg/kg wet	2.000		116	70-130			
1,1-Dichloropropene	2.28	0.200	mg/kg wet	2.000		114	70-130			
1,2,3-Trichlorobenzene	2.29	0.200	mg/kg wet	2.000		114	70-130			
1,2,3-Trichloropropane	1.77	0.200	mg/kg wet	2.000		89	70-130			
1,2,4-Trichlorobenzene	2.32	0.200	mg/kg wet	2.000		116	70-130			
1,2,4-Trimethylbenzene	2.35	0.200	mg/kg wet	2.000		118	70-130			



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CJ90743 - 5035

1,2-Dibromo-3-Chloropropane	2.13	1.00	mg/kg wet	2.000		106	70-130			
1,2-Dibromoethane	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,2-Dichlorobenzene	2.29	0.200	mg/kg wet	2.000		114	70-130			
1,2-Dichloroethane	2.13	0.200	mg/kg wet	2.000		106	70-130			
1,2-Dichloropropane	2.26	0.200	mg/kg wet	2.000		113	70-130			
1,3,5-Trimethylbenzene	2.22	0.200	mg/kg wet	2.000		111	70-130			
1,3-Dichlorobenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
1,3-Dichloropropane	2.26	0.200	mg/kg wet	2.000		113	70-130			
1,4-Dichlorobenzene	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,4-Dioxane - Screen	62.1	40.0	mg/kg wet	40.00		155	44-241			
1-Chlorohexane	2.08	0.200	mg/kg wet	2.000		104	70-130			
2,2-Dichloropropane	2.23	0.200	mg/kg wet	2.000		112	70-130			
2-Butanone	10.9	1.00	mg/kg wet	10.00		109	70-130			
2-Chlorotoluene	2.27	0.200	mg/kg wet	2.000		113	70-130			
2-Hexanone	10.5	1.00	mg/kg wet	10.00		105	70-130			
4-Chlorotoluene	2.19	0.200	mg/kg wet	2.000		109	70-130			
4-Isopropyltoluene	2.22	0.200	mg/kg wet	2.000		111	70-130			
4-Methyl-2-Pentanone	10.7	1.00	mg/kg wet	10.00		107	70-130			
Acetone	11.3	1.00	mg/kg wet	10.00		113	70-130			
Benzene	2.26	0.200	mg/kg wet	2.000		113	70-130			
Bromobenzene	2.19	0.200	mg/kg wet	2.000		109	70-130			
Bromochloromethane	2.00	0.200	mg/kg wet	2.000		100	70-130			
Bromodichloromethane	1.78	0.200	mg/kg wet	2.000		89	70-130			
Bromoform	2.00	0.200	mg/kg wet	2.000		100	70-130			
Bromomethane	1.94	0.200	mg/kg wet	2.000		97	70-130			
Carbon Disulfide	2.09	0.200	mg/kg wet	2.000		104	70-130			
Carbon Tetrachloride	2.05	0.200	mg/kg wet	2.000		102	70-130			
Chlorobenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Chloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
Chloroform	2.21	0.200	mg/kg wet	2.000		111	70-130			
Chloromethane	1.93	0.200	mg/kg wet	2.000		96	70-130			
cis-1,2-Dichloroethene	2.24	0.200	mg/kg wet	2.000		112	70-130			
cis-1,3-Dichloropropene	2.38	0.200	mg/kg wet	2.000		119	70-130			
Dibromochloromethane	2.08	0.200	mg/kg wet	2.000		104	70-130			
Dibromomethane	2.07	0.200	mg/kg wet	2.000		104	70-130			
Dichlorodifluoromethane	1.64	0.200	mg/kg wet	2.000		82	70-130			
Diethyl Ether	2.21	0.200	mg/kg wet	2.000		111	70-130			
Di-isopropyl ether	2.30	0.200	mg/kg wet	2.000		115	70-130			
Ethyl tertiary-butyl ether	2.11	0.200	mg/kg wet	2.000		106	70-130			
Ethylbenzene	2.23	0.200	mg/kg wet	2.000		112	70-130			
Hexachlorobutadiene	2.26	0.200	mg/kg wet	2.000		113	70-130			
Isopropylbenzene	2.18	0.200	mg/kg wet	2.000		109	70-130			
Methyl tert-Butyl Ether	2.03	0.200	mg/kg wet	2.000		102	70-130			
Methylene Chloride	2.25	0.400	mg/kg wet	2.000		113	70-130			
Naphthalene	2.14	0.200	mg/kg wet	2.000		107	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CJ90743 - 5035

n-Butylbenzene	2.28	0.200	mg/kg wet	2.000		114	70-130			
n-Propylbenzene	2.31	0.200	mg/kg wet	2.000		116	70-130			
sec-Butylbenzene	2.22	0.200	mg/kg wet	2.000		111	70-130			
Styrene	2.01	0.200	mg/kg wet	2.000		101	70-130			
tert-Butylbenzene	2.13	0.200	mg/kg wet	2.000		107	70-130			
Tertiary-amyl methyl ether	2.21	0.200	mg/kg wet	2.000		110	70-130			
Tetrachloroethene	1.55	0.200	mg/kg wet	2.000		77	70-130			
Tetrahydrofuran	2.11	1.00	mg/kg wet	2.000		106	70-130			
Toluene	2.24	0.200	mg/kg wet	2.000		112	70-130			
trans-1,2-Dichloroethene	2.19	0.200	mg/kg wet	2.000		110	70-130			
trans-1,3-Dichloropropene	2.15	0.200	mg/kg wet	2.000		107	70-130			
Trichloroethene	2.05	0.200	mg/kg wet	2.000		102	70-130			
Trichlorofluoromethane	2.20	0.200	mg/kg wet	2.000		110	70-130			
Vinyl Acetate	2.54	0.200	mg/kg wet	2.000		127	70-130			
Vinyl Chloride	2.04	0.200	mg/kg wet	2.000		102	70-130			
Xylene O	2.16	0.200	mg/kg wet	2.000		108	70-130			
Xylene P,M	4.33	0.400	mg/kg wet	4.000		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	4.95		mg/kg wet	5.000		99	70-130			
Surrogate: 4-Bromofluorobenzene	4.98		mg/kg wet	5.000		100	70-130			
Surrogate: Dibromofluoromethane	4.71		mg/kg wet	5.000		94	70-130			
Surrogate: Toluene-d8	4.94		mg/kg wet	5.000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130	4	25	
1,1,1-Trichloroethane	2.08	0.200	mg/kg wet	2.000		104	70-130	1	25	
1,1,2,2-Tetrachloroethane	2.07	0.200	mg/kg wet	2.000		103	70-130	6	25	
1,1,2-Trichloroethane	2.18	0.200	mg/kg wet	2.000		109	70-130	7	25	
1,1-Dichloroethane	2.37	0.200	mg/kg wet	2.000		119	70-130	1	25	
1,1-Dichloroethene	2.25	0.200	mg/kg wet	2.000		112	70-130	3	25	
1,1-Dichloropropene	2.21	0.200	mg/kg wet	2.000		111	70-130	3	25	
1,2,3-Trichlorobenzene	2.26	0.200	mg/kg wet	2.000		113	70-130	1	25	
1,2,3-Trichloropropane	1.78	0.200	mg/kg wet	2.000		89	70-130	0.7	25	
1,2,4-Trichlorobenzene	2.23	0.200	mg/kg wet	2.000		111	70-130	4	25	
1,2,4-Trimethylbenzene	2.33	0.200	mg/kg wet	2.000		116	70-130	1	25	
1,2-Dibromo-3-Chloropropane	2.25	1.00	mg/kg wet	2.000		113	70-130	6	25	
1,2-Dibromoethane	2.12	0.200	mg/kg wet	2.000		106	70-130	3	25	
1,2-Dichlorobenzene	2.18	0.200	mg/kg wet	2.000		109	70-130	5	25	
1,2-Dichloroethane	2.13	0.200	mg/kg wet	2.000		106	70-130	0.2	25	
1,2-Dichloropropane	2.12	0.200	mg/kg wet	2.000		106	70-130	6	25	
1,3,5-Trimethylbenzene	2.29	0.200	mg/kg wet	2.000		114	70-130	3	25	
1,3-Dichlorobenzene	2.10	0.200	mg/kg wet	2.000		105	70-130	0.2	25	
1,3-Dichloropropane	2.50	0.200	mg/kg wet	2.000		125	70-130	10	25	
1,4-Dichlorobenzene	2.14	0.200	mg/kg wet	2.000		107	70-130	4	25	
1,4-Dioxane - Screen	52.5	40.0	mg/kg wet	40.00		131	44-241	17	200	
1-Chlorohexane	2.24	0.200	mg/kg wet	2.000		112	70-130	8	25	
2,2-Dichloropropane	2.22	0.200	mg/kg wet	2.000		111	70-130	0.4	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CJ90743 - 5035

2-Butanone	10.6	1.00	mg/kg wet	10.00		106	70-130	2	25	
2-Chlorotoluene	2.36	0.200	mg/kg wet	2.000		118	70-130	4	25	
2-Hexanone	10.4	1.00	mg/kg wet	10.00		104	70-130	0.9	25	
4-Chlorotoluene	2.29	0.200	mg/kg wet	2.000		114	70-130	5	25	
4-Isopropyltoluene	2.15	0.200	mg/kg wet	2.000		108	70-130	3	25	
4-Methyl-2-Pentanone	10.3	1.00	mg/kg wet	10.00		103	70-130	4	25	
Acetone	10.6	1.00	mg/kg wet	10.00		106	70-130	6	25	
Benzene	2.34	0.200	mg/kg wet	2.000		117	70-130	3	25	
Bromobenzene	2.32	0.200	mg/kg wet	2.000		116	70-130	6	25	
Bromochloromethane	2.04	0.200	mg/kg wet	2.000		102	70-130	2	25	
Bromodichloromethane	1.81	0.200	mg/kg wet	2.000		90	70-130	2	25	
Bromoform	2.01	0.200	mg/kg wet	2.000		100	70-130	0.4	25	
Bromomethane	1.92	0.200	mg/kg wet	2.000		96	70-130	0.8	25	
Carbon Disulfide	2.16	0.200	mg/kg wet	2.000		108	70-130	3	25	
Carbon Tetrachloride	1.86	0.200	mg/kg wet	2.000		93	70-130	10	25	
Chlorobenzene	2.25	0.200	mg/kg wet	2.000		112	70-130	10	25	
Chloroethane	2.17	0.200	mg/kg wet	2.000		108	70-130	6	25	
Chloroform	2.19	0.200	mg/kg wet	2.000		110	70-130	1	25	
Chloromethane	1.82	0.200	mg/kg wet	2.000		91	70-130	6	25	
cis-1,2-Dichloroethene	2.17	0.200	mg/kg wet	2.000		108	70-130	3	25	
cis-1,3-Dichloropropene	2.19	0.200	mg/kg wet	2.000		109	70-130	8	25	
Dibromochloromethane	2.12	0.200	mg/kg wet	2.000		106	70-130	2	25	
Dibromomethane	2.03	0.200	mg/kg wet	2.000		102	70-130	2	25	
Dichlorodifluoromethane	1.60	0.200	mg/kg wet	2.000		80	70-130	2	25	
Diethyl Ether	2.23	0.200	mg/kg wet	2.000		112	70-130	0.8	25	
Di-isopropyl ether	2.28	0.200	mg/kg wet	2.000		114	70-130	0.8	25	
Ethyl tertiary-butyl ether	2.08	0.200	mg/kg wet	2.000		104	70-130	1	25	
Ethylbenzene	2.34	0.200	mg/kg wet	2.000		117	70-130	5	25	
Hexachlorobutadiene	2.35	0.200	mg/kg wet	2.000		118	70-130	4	25	
Isopropylbenzene	2.33	0.200	mg/kg wet	2.000		117	70-130	7	25	
Methyl tert-Butyl Ether	1.97	0.200	mg/kg wet	2.000		98	70-130	3	25	
Methylene Chloride	2.14	0.400	mg/kg wet	2.000		107	70-130	5	25	
Naphthalene	2.09	0.200	mg/kg wet	2.000		105	70-130	2	25	
n-Butylbenzene	2.37	0.200	mg/kg wet	2.000		118	70-130	4	25	
n-Propylbenzene	2.34	0.200	mg/kg wet	2.000		117	70-130	1	25	
sec-Butylbenzene	2.19	0.200	mg/kg wet	2.000		110	70-130	1	25	
Styrene	2.13	0.200	mg/kg wet	2.000		107	70-130	6	25	
tert-Butylbenzene	2.15	0.200	mg/kg wet	2.000		107	70-130	0.7	25	
Tertiary-amyl methyl ether	2.14	0.200	mg/kg wet	2.000		107	70-130	3	25	
Tetrachloroethene	1.65	0.200	mg/kg wet	2.000		83	70-130	7	25	
Tetrahydrofuran	1.85	1.00	mg/kg wet	2.000		93	70-130	13	25	
Toluene	2.25	0.200	mg/kg wet	2.000		112	70-130	0.4	25	
trans-1,2-Dichloroethene	2.20	0.200	mg/kg wet	2.000		110	70-130	0.3	25	
trans-1,3-Dichloropropene	2.24	0.200	mg/kg wet	2.000		112	70-130	4	25	
Trichloroethene	1.99	0.200	mg/kg wet	2.000		100	70-130	3	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CJ90743 - 5035

Trichlorofluoromethane	2.18	0.200	mg/kg wet	2.000		109	70-130	1	25	
Vinyl Acetate	2.27	0.200	mg/kg wet	2.000		114	70-130	11	25	
Vinyl Chloride	2.05	0.200	mg/kg wet	2.000		102	70-130	0.3	25	
Xylene O	2.32	0.200	mg/kg wet	2.000		116	70-130	7	25	
Xylene P,M	4.54	0.400	mg/kg wet	4.000		113	70-130	5	25	
Surrogate: 1,2-Dichloroethane-d4	4.86		mg/kg wet	5.000		97	70-130			
Surrogate: 4-Bromofluorobenzene	5.17		mg/kg wet	5.000		103	70-130			
Surrogate: Dibromofluoromethane	4.87		mg/kg wet	5.000		97	70-130			
Surrogate: Toluene-d8	5.14		mg/kg wet	5.000		103	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ90334 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	4.31		mg/kg wet	5.000		86	40-140			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Total Petroleum Hydrocarbons	30.0	37.5	mg/kg wet	35.00		86	40-140			
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CJ90334 - 3546

<i>Surrogate: O-Terphenyl</i>	4.51		mg/kg wet	5.000		90	40-140			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140	7	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		90	40-140	1	25	
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		78	40-140	2	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		88	40-140	2	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		88	40-140	1	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		83	40-140	4	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		68	30-140	7	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		87	40-140	0.3	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		86	40-140	4	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		89	40-140	1	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		81	40-140	5	25	
Total Petroleum Hydrocarbons	29.3	37.5	mg/kg wet	35.00		84	40-140	3	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		84	40-140	0.9	25	

<i>Surrogate: O-Terphenyl</i>	4.29		mg/kg wet	5.000		86	40-140			
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Batch CJ90411 - 3546

Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

<i>Surrogate: O-Terphenyl</i>	4.37		mg/kg wet	5.000		87	40-140			
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LCS										
Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Dodecane (C12)	1.7	0.2	mg/kg wet	2.500		70	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CJ90411 - 3546

Nonane (C9)	1.5	0.2	mg/kg wet	2.500		59	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Total Petroleum Hydrocarbons	29.1	37.5	mg/kg wet	35.00		83	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		87	40-140			

Surrogate: O-Terphenyl

4.53 mg/kg wet 5.000 91 40-140

LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140	12	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140	1	25	
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		80	40-140	14	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		90	40-140	0.8	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		88	40-140	6	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		96	40-140	1	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140	12	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	4	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		89	40-140	1	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		90	40-140	2	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		86	40-140	9	25	
Total Petroleum Hydrocarbons	29.7	37.5	mg/kg wet	35.00		85	40-140	2	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		83	40-140	4	25	

Surrogate: O-Terphenyl

4.51 mg/kg wet 5.000 90 40-140

8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90322 - 3546

Blank

2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.167	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90322 - 3546

Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.16		mg/kg wet	3.333		65	30-130			
Surrogate: 2-Fluorobiphenyl	2.09		mg/kg wet	3.333		63	30-130			
Surrogate: Nitrobenzene-d5	2.19		mg/kg wet	3.333		66	30-130			
Surrogate: p-Terphenyl-d14	2.97		mg/kg wet	3.333		89	30-130			

LCS

2-Methylnaphthalene	1.83	0.333	mg/kg wet	3.333		55	40-140			
Acenaphthene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Acenaphthylene	2.06	0.333	mg/kg wet	3.333		62	40-140			
Anthracene	2.51	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)anthracene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Benzo(a)pyrene	2.39	0.167	mg/kg wet	3.333		72	40-140			
Benzo(b)fluoranthene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Benzo(g,h,i)perylene	2.76	0.333	mg/kg wet	3.333		83	40-140			
Benzo(k)fluoranthene	2.40	0.333	mg/kg wet	3.333		72	40-140			
Chrysene	2.71	0.167	mg/kg wet	3.333		81	40-140			
Dibenzo(a,h)Anthracene	2.77	0.167	mg/kg wet	3.333		83	40-140			
Fluoranthene	2.75	0.333	mg/kg wet	3.333		82	40-140			
Fluorene	2.26	0.333	mg/kg wet	3.333		68	40-140			
Indeno(1,2,3-cd)Pyrene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Naphthalene	1.75	0.333	mg/kg wet	3.333		53	40-140			
Phenanthrene	2.27	0.333	mg/kg wet	3.333		68	40-140			
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	1.76		mg/kg wet	3.333		53	30-130			
Surrogate: 2-Fluorobiphenyl	1.91		mg/kg wet	3.333		57	30-130			
Surrogate: Nitrobenzene-d5	1.81		mg/kg wet	3.333		54	30-130			
Surrogate: p-Terphenyl-d14	2.75		mg/kg wet	3.333		83	30-130			

LCS Dup

2-Methylnaphthalene	1.95	0.333	mg/kg wet	3.333		58	40-140	6	30	
Acenaphthene	2.09	0.333	mg/kg wet	3.333		63	40-140	7	30	
Acenaphthylene	2.20	0.333	mg/kg wet	3.333		66	40-140	6	30	
Anthracene	2.69	0.333	mg/kg wet	3.333		81	40-140	7	30	
Benzo(a)anthracene	2.94	0.333	mg/kg wet	3.333		88	40-140	6	30	
Benzo(a)pyrene	2.55	0.167	mg/kg wet	3.333		77	40-140	7	30	
Benzo(b)fluoranthene	2.73	0.333	mg/kg wet	3.333		82	40-140	8	30	
Benzo(g,h,i)perylene	2.92	0.333	mg/kg wet	3.333		87	40-140	6	30	
Benzo(k)fluoranthene	2.43	0.333	mg/kg wet	3.333		73	40-140	1	30	
Chrysene	2.83	0.167	mg/kg wet	3.333		85	40-140	4	30	
Dibenzo(a,h)Anthracene	2.96	0.167	mg/kg wet	3.333		89	40-140	7	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
Fluorene	2.39	0.333	mg/kg wet	3.333		72	40-140	5	30	
Indeno(1,2,3-cd)Pyrene	2.88	0.333	mg/kg wet	3.333		87	40-140	7	30	
Naphthalene	1.82	0.333	mg/kg wet	3.333		55	40-140	4	30	
Phenanthrene	2.43	0.333	mg/kg wet	3.333		73	40-140	7	30	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90322 - 3546

Pyrene	2.69	0.333	mg/kg wet	3.333		81	40-140	4	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.75		mg/kg wet	3.333		52	30-130			
Surrogate: 2-Fluorobiphenyl	1.94		mg/kg wet	3.333		58	30-130			
Surrogate: Nitrobenzene-d5	1.81		mg/kg wet	3.333		54	30-130			
Surrogate: p-Terphenyl-d14	2.74		mg/kg wet	3.333		82	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

Notes and Definitions

- U Analyte included in the analysis, but not detected
- PT Pentachlorophenol tailing factor > 2.
- J Reported between MDL and MRL
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- BT Benzidine tailing factor >2.
- 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
- F/V Final 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
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report
- RL Reporting Limit
- EDL Estimated Detection Limit
- MF Membrane Filtration
- MPN Most Probably Number
- TNTC Too numerous to Count
- CFU Colony Forming Units



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0111

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

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: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML

ESS Project ID: 19J0111
 Date Received: 10/3/2019
 Project Due Date: 10/10/2019
 Days for Project: 5 Day

Shipped/Delivered Via: ESS Courier

- 1. Air bill manifest present? No
Air No.: NA
- 2. Were custody seals present? No
- 3. Is radiation count <100 CPM? Yes
- 4. Is a Cooler Present? Yes
Temp: 0.9 Iced with: Ice
- 5. Was COC signed and dated by client? Yes

- 6. Does COC match bottles? Yes
- 7. Is COC complete and correct? Yes
- 8. Were samples received intact? Yes
- 9. Were labs informed about short holds & rushes? Yes / No / NA
- 10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
 ESS Sample IDs: _____
 Analysis: _____
 TAT: _____

12. Were VOAs received? Yes / No
 a. Air bubbles in aqueous VOAs? Yes / No
 b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
 a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
 b. Low Level VOA vials frozen: Date: 10/3/2019 Time: 1422 By: client
 Sample Receiving Notes: RL (sample 1)

DI vials for sample 1 rec'd broken - new vials assembled in SR by ML → 10/3/19 1432

LL rec'd frozen

14. Was there a need to contact Project Manager?
 a. Was there a need to contact the client? Yes / No
 Who was contacted? DAN BURNES Date: 10/3/19 Time: 1420 By: ML
Will preserve LL in Hume → Report Burn Memo and Lowlevel (Normal) per client.

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	394839	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	394842	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	394847	Yes	NA	Yes	VOA Vial - Other	Other	
01	394848	Yes	NA	Yes	VOA Vial - Other	Other	
02	394838	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	394841	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	394845	Yes	NA	Yes	VOA Vial - Other	Other	
02	394846	Yes	NA	Yes	VOA Vial - Other	Other	
03	394837	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	394840	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	394843	Yes	NA	Yes	VOA Vial - Other	Other	
03	394844	Yes	NA	Yes	VOA Vial - Other	Other	

2nd Review

Were all containers scanned into storage/lab?

Initials SC
 Yes / No
 Yes / No / NA
 Yes / No / NA
 Yes / No / NA
 Yes / No / NA

- Are barcode labels on correct containers?
- Are all Flashpoint stickers attached/container ID # circled?
- Are all Hex Chrome stickers attached?
- Are all QC stickers attached?
- Are VOA stickers attached if bubbles noted?

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML ESS Project ID: 19J0111
Date Received: 10/3/2019

Completed By:	<u>[Signature]</u>	Date & Time:	<u>10/3/19</u>	<u>1428</u>
Reviewed By:	<u>[Signature]</u>	Date & Time:	<u>10/3/19</u>	<u>1428</u>
Delivered By:	<u>[Signature]</u>	Date & Time:	<u>10/3/19</u>	<u>1428</u>

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 19J0111
 Reporting Limits RIDEM R-DEC, GB-LC
 Electronic Data Checker Excel
 Deliverables Other (Please Specify -->)

Turn Time 5 Days
 Regulatory State RI
 Is this project for any of the following?:
 CT RCP MA MCP RGP

Company Name SAGE ENVIRONMENTAL
 Project # SZ935 Project Name WAITES WHARF, NEWPORT
 Contact Person DAN BRYNES Address 172 ARMISTICE BLVD.
 City Pawtucket State RI Zip Code 02860 PO #
 Telephone Number 401-723-9906 FAX Number Email Address dbrynes@sage-enviro.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID
DB	11/11	10:00	G	S	SE-101 (0'-2')
DB	11/15	10:00	G	S	SE-101 (2'-7')
DB	10/30	10:00	G	S	SE-101 (0'-2')
DB	11/15	10:00	G	S	SE-101 (0'-2')
1	10/1/19	12:30	G	S	SE-104 (0'-2')
2	↓	13:30	↓	↓	SE-105 (0'-2')
3	↓	14:30	↓	↓	SE-106 (0'-2')

Analysis	VOCs	TPH	PAHs	RCRA 8
	---	---	---	---
---	---	---	---	---
---	---	---	---	---
---	---	---	---	---
1	X	X	X	X
2	↓	↓	↓	↓
3	↓	↓	↓	↓

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial Vial
 Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* 7
 Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DIH2O 11-Other* 10
 Number of Containers per Sample: 4

Laboratory Use Only
 Cooler Present: Pick Off
 Seals Intact: Pickup
 Cooler Temperature: 0.9°C

Sampled by: DAN BRYNES
 Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time) SML Mac 10/3/19 9:21	Received By: (Signature, Date & Time) 10/3/19 9:01	Relinquished By: (Signature, Date & Time) 10/3/19 9:58	Received By: (Signature, Date & Time) 10/3/19 13:58
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CERTIFICATE OF ANALYSIS

Dan Boynes
Sage Environmental, inc.
172 Armistice Boulevard
Pawtucket, RI 02860

RE: Waites Wharf Newport (S2935)
ESS Laboratory Work Order Number: 19J0112

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.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 5:18 pm, Oct 10, 2019

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 TNI and relative state standards, 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.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

SAMPLE RECEIPT

The following samples were received on October 03, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0112-01	SE-101 0-2ft	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D PAH
19J0112-02	SE-101 2-7ft	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D PAH
19J0112-03	SE-102 0-2ft	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D PAH
19J0112-04	SE-103 0-2ft	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D PAH



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 19J0112-04 [Surrogate recovery\(ies\) above upper control limit \(S+\).](#)
1,2-Dichloroethane-d4 (131% @ 70-130%)
- CJ90733-BS1 [Blank Spike recovery is below lower control limit \(B-\).](#)
Dichlorodifluoromethane (67% @ 70-130%)
- CJ90733-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)
Acetone (137% @ 70-130%)
- CJ90733-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)
Acetone (30% @ 25%)

8270D Polynuclear Aromatic Hydrocarbons

- C9J0075-TUN1 [Benzidine tailing factor >2.](#)
- C9J0119-TUN1 [Benzidine tailing factor >2.](#)
- C9J0119-TUN1 [Pentachlorophenol tailing factor > 2.](#)
- C9J0170-CCV1 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)
p-Terphenyl-d14 (22% @ 20%)
- C9J0170-TUN1 [Benzidine tailing factor >2.](#)
- C9J0170-TUN1 [Pentachlorophenol tailing factor > 2.](#)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

- [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](#)



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

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
- 8015C - 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
- MADEP 18-2.1 - VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / 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
- 5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 0-2ft
Date Sampled: 10/01/19 09:00
Percent Solids: 90

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	11.1 (1.85)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501
Barium	76.1 (1.85)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501
Cadmium	ND (0.37)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501
Chromium	5.67 (0.74)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501
Lead	194 (3.70)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501
Mercury	2.80 (0.681)		7471B		25	MKS	10/08/19 13:04	0.81	40	CJ90502
Selenium	ND (3.70)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501
Silver	ND (0.37)		6010C		1	BJV	10/08/19 6:43	3.01	100	CJ90501



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 0-2ft
Date Sampled: 10/01/19 09:00
Percent Solids: 90
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,1,2,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1,4-Dioxane	ND (0.101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
1-Chlorohexane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
2-Butanone	ND (0.0507)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
2-Chlorotoluene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
2-Hexanone	ND (0.0507)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
4-Chlorotoluene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
4-Methyl-2-Pentanone	ND (0.0507)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Acetone	0.0732 (0.0507)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Benzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Bromobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 0-2ft
Date Sampled: 10/01/19 09:00
Percent Solids: 90
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Bromodichloromethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Bromoform	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Bromomethane	ND (0.0101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Carbon Disulfide	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Chlorobenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Chloroethane	ND (0.0101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Chloroform	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Chloromethane	ND (0.0101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Dibromochloromethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Dibromomethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Dichlorodifluoromethane	ND (0.0101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Diethyl Ether	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Di-isopropyl ether	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Ethylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Isopropylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Methylene Chloride	ND (0.0253)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Naphthalene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
n-Butylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
n-Propylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
sec-Butylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Styrene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
tert-Butylbenzene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Tetrachloroethene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Tetrahydrofuran	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 0-2ft
Date Sampled: 10/01/19 09:00
Percent Solids: 90
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Trichloroethene	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Vinyl Acetate	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Vinyl Chloride	ND (0.0101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Xylene O	ND (0.0051)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Xylene P,M	ND (0.0101)		8260B Low		1	10/07/19 14:55	C9J0134	CJ90733
Xylenes (Total)	ND (0.0101)		8260B Low		1	10/07/19 14:55		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>114 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>97 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 0-2ft
Date Sampled: 10/01/19 09:00
Percent Solids: 90
Initial Volume: 20.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/19 11:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	42.9 (41.2)		8100M		1	10/05/19 16:51	C9J0040	CJ90411
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		80 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 0-2ft
Date Sampled: 10/01/19 09:00
Percent Solids: 90
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 10/3/19 19:45

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Acenaphthene	ND (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Acenaphthylene	ND (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Anthracene	ND (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Benzo(a)anthracene	1.32 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Benzo(a)pyrene	1.73 (0.185)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Benzo(b)fluoranthene	1.49 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Benzo(g,h,i)perylene	1.18 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Benzo(k)fluoranthene	0.965 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Chrysene	1.25 (0.185)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Dibenzo(a,h)Anthracene	0.320 (0.185)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Fluoranthene	1.80 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Fluorene	ND (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Indeno(1,2,3-cd)Pyrene	1.06 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Naphthalene	0.460 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Phenanthrene	0.573 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322
Pyrene	1.93 (0.369)		8270D PAH		1	10/09/19 18:22	C9J0170	CJ90322

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	69 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	68 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	68 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 2-7ft
Date Sampled: 10/01/19 09:15
Percent Solids: 74

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	8.13 (2.60)		6010C		1	BJV	10/08/19 6:49	2.61	100	CJ90501
Barium	115 (2.60)		6010C		1	BJV	10/08/19 6:49	2.61	100	CJ90501
Cadmium	ND (0.52)		6010C		1	BJV	10/08/19 6:49	2.61	100	CJ90501
Chromium	7.37 (1.04)		6010C		1	BJV	10/08/19 6:49	2.61	100	CJ90501
Lead	342 (5.19)		6010C		1	BJV	10/08/19 6:49	2.61	100	CJ90501
Mercury	2.13 (0.678)		7471B		25	MKS	10/08/19 13:14	0.99	40	CJ90502
Selenium	ND (5.19)		6010C		1	BJV	10/08/19 6:49	2.61	100	CJ90501
Silver	ND (1.04)		6010C		2	KJK	10/08/19 21:17	2.61	100	CJ90501



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 2-7ft
Date Sampled: 10/01/19 09:15
Percent Solids: 74
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,1,1-Trichloroethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,1,2,2-Tetrachloroethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,1,2-Trichloroethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,1-Dichloroethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,1-Dichloroethene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,1-Dichloropropene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2,3-Trichlorobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2,3-Trichloropropane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2,4-Trichlorobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2,4-Trimethylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2-Dibromo-3-Chloropropane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2-Dibromoethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2-Dichlorobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2-Dichloroethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,2-Dichloropropane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,3,5-Trimethylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,3-Dichlorobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,3-Dichloropropane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,4-Dichlorobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1,4-Dioxane	ND (0.108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
1-Chlorohexane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
2,2-Dichloropropane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
2-Butanone	ND (0.0538)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
2-Chlorotoluene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
2-Hexanone	ND (0.0538)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
4-Chlorotoluene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
4-Isopropyltoluene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
4-Methyl-2-Pentanone	ND (0.0538)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Acetone	ND (0.0538)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Benzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Bromobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 2-7ft
Date Sampled: 10/01/19 09:15
Percent Solids: 74
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Bromodichloromethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Bromoform	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Bromomethane	ND (0.0108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Carbon Disulfide	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Carbon Tetrachloride	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Chlorobenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Chloroethane	ND (0.0108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Chloroform	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Chloromethane	ND (0.0108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
cis-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
cis-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Dibromochloromethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Dibromomethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Dichlorodifluoromethane	ND (0.0108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Diethyl Ether	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Di-isopropyl ether	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Ethyl tertiary-butyl ether	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Ethylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Hexachlorobutadiene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Isopropylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Methyl tert-Butyl Ether	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Methylene Chloride	ND (0.0269)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Naphthalene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
n-Butylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
n-Propylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
sec-Butylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Styrene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
tert-Butylbenzene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Tertiary-amyl methyl ether	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Tetrachloroethene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Tetrahydrofuran	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 2-7ft
Date Sampled: 10/01/19 09:15
Percent Solids: 74
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
trans-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
trans-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Trichloroethene	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Trichlorofluoromethane	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Vinyl Acetate	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Vinyl Chloride	ND (0.0108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Xylene O	ND (0.0054)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Xylene P,M	ND (0.0108)		8260B Low		1	10/07/19 15:21	C9J0134	CJ90733
Xylenes (Total)	ND (0.0108)		8260B Low		1	10/07/19 15:21		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>117 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>99 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 2-7ft
Date Sampled: 10/01/19 09:15
Percent Solids: 74
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/19 11:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	77.5 (53.0)		8100M		1	10/05/19 17:22	C9J0040	CJ90411
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		84 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 2-7ft
Date Sampled: 10/01/19 09:15
Percent Solids: 74
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 10/3/19 19:45

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Acenaphthene	ND (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Acenaphthylene	ND (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Anthracene	ND (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Benzo(a)anthracene	1.52 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Benzo(a)pyrene	1.77 (0.236)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Benzo(b)fluoranthene	1.28 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Benzo(g,h,i)perylene	1.13 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Benzo(k)fluoranthene	1.19 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Chrysene	1.40 (0.236)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Dibenzo(a,h)Anthracene	0.315 (0.236)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Fluoranthene	2.54 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Fluorene	ND (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Indeno(1,2,3-cd)Pyrene	1.02 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Naphthalene	ND (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Phenanthrene	1.05 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322
Pyrene	2.40 (0.470)		8270D PAH		1	10/09/19 18:51	C9J0170	CJ90322

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	62 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	52 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	62 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	50 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 0-2ft
Date Sampled: 10/01/19 10:00
Percent Solids: 77

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	8.62 (2.42)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501
Barium	78.7 (2.42)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501
Cadmium	ND (0.48)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501
Chromium	11.6 (0.97)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501
Lead	246 (4.84)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501
Mercury	0.351 (0.030)		7471B		1	MKS	10/08/19 11:32	0.85	40	CJ90502
Selenium	ND (4.84)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501
Silver	ND (0.48)		6010C		1	BJV	10/08/19 6:54	2.67	100	CJ90501



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 0-2ft
Date Sampled: 10/01/19 10:00
Percent Solids: 77
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,1,2,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1,4-Dioxane	ND (0.0994)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
1-Chlorohexane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
2-Butanone	ND (0.0497)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
2-Chlorotoluene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
2-Hexanone	ND (0.0497)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
4-Chlorotoluene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
4-Methyl-2-Pentanone	ND (0.0497)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Acetone	ND (0.0497)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Benzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Bromobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 0-2ft
Date Sampled: 10/01/19 10:00
Percent Solids: 77
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Bromodichloromethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Bromoform	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Bromomethane	ND (0.0099)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Carbon Disulfide	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Chlorobenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Chloroethane	ND (0.0099)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Chloroform	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Chloromethane	ND (0.0099)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Dibromochloromethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Dibromomethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Dichlorodifluoromethane	ND (0.0099)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Diethyl Ether	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Di-isopropyl ether	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Ethylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Isopropylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Methylene Chloride	ND (0.0249)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Naphthalene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
n-Butylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
n-Propylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
sec-Butylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Styrene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
tert-Butylbenzene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Tetrachloroethene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Tetrahydrofuran	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 0-2ft
Date Sampled: 10/01/19 10:00
Percent Solids: 77
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Trichloroethene	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Vinyl Acetate	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Vinyl Chloride	ND (0.0099)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Xylene O	ND (0.0050)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Xylene P,M	ND (0.0099)		8260B Low		1	10/04/19 16:57	C9J0097	CJ90401
Xylenes (Total)	ND (0.00994)		8260B Low		1	10/04/19 16:57		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>129 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>99 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 0-2ft
Date Sampled: 10/01/19 10:00
Percent Solids: 77
Initial Volume: 19.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/19 11:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	437 (254)		8100M		5	10/05/19 21:35	C9J0040	CJ90411
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		87 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 0-2ft
Date Sampled: 10/01/19 10:00
Percent Solids: 77
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 10/3/19 19:45

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Acenaphthene	ND (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Acenaphthylene	ND (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Anthracene	1.44 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Benzo(a)anthracene	3.27 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Benzo(a)pyrene	2.55 (0.429)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Benzo(b)fluoranthene	2.20 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Benzo(g,h,i)perylene	1.34 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Benzo(k)fluoranthene	2.12 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Chrysene	2.91 (0.429)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Dibenzo(a,h)Anthracene	0.531 (0.429)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Fluoranthene	6.32 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Fluorene	ND (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Indeno(1,2,3-cd)Pyrene	1.33 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Naphthalene	ND (0.429)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Phenanthrene	3.73 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322
Pyrene	4.50 (0.855)		8270D PAH		2	10/09/19 16:27	C9J0170	CJ90322

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	55 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	58 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	56 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 0-2ft
Date Sampled: 10/01/19 11:00
Percent Solids: 84

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	12.5 (2.59)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501
Barium	87.8 (2.59)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501
Cadmium	ND (0.52)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501
Chromium	11.4 (1.04)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501
Lead	284 (5.18)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501
Mercury	0.760 (0.244)		7471B		10	MKS	10/08/19 13:16	0.97	40	CJ90502
Selenium	ND (5.18)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501
Silver	ND (0.52)		6010C		1	BJV	10/08/19 7:10	2.31	100	CJ90501



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 0-2ft
Date Sampled: 10/01/19 11:00
Percent Solids: 84
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,1,1-Trichloroethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,1,2,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,1,2-Trichloroethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,1-Dichloroethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,1-Dichloroethene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,1-Dichloropropene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2,3-Trichlorobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2,3-Trichloropropane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2,4-Trichlorobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2,4-Trimethylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2-Dibromo-3-Chloropropane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2-Dibromoethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2-Dichlorobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2-Dichloroethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,2-Dichloropropane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,3,5-Trimethylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,3-Dichlorobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,3-Dichloropropane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,4-Dichlorobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1,4-Dioxane	ND (0.103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
1-Chlorohexane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
2,2-Dichloropropane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
2-Butanone	ND (0.0516)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
2-Chlorotoluene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
2-Hexanone	ND (0.0516)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
4-Chlorotoluene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
4-Isopropyltoluene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
4-Methyl-2-Pentanone	ND (0.0516)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Acetone	ND (0.0516)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Benzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Bromobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 0-2ft
Date Sampled: 10/01/19 11:00
Percent Solids: 84
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Bromodichloromethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Bromoform	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Bromomethane	ND (0.0103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Carbon Disulfide	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Carbon Tetrachloride	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Chlorobenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Chloroethane	ND (0.0103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Chloroform	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Chloromethane	ND (0.0103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
cis-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
cis-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Dibromochloromethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Dibromomethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Diethyl Ether	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Di-isopropyl ether	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Ethyl tertiary-butyl ether	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Ethylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Hexachlorobutadiene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Isopropylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Methyl tert-Butyl Ether	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Methylene Chloride	ND (0.0258)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Naphthalene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
n-Butylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
n-Propylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
sec-Butylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Styrene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
tert-Butylbenzene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Tertiary-amyl methyl ether	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Tetrachloroethene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Tetrahydrofuran	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 0-2ft
Date Sampled: 10/01/19 11:00
Percent Solids: 84
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
trans-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
trans-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Trichloroethene	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Trichlorofluoromethane	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Vinyl Acetate	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Vinyl Chloride	ND (0.0103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Xylene O	ND (0.0052)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Xylene P,M	ND (0.0103)		8260B Low		1	10/04/19 17:22	C9J0097	CJ90401
Xylenes (Total)	ND (0.0103)		8260B Low		1	10/04/19 17:22		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>131 %</i>	<i>S+</i>	<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>116 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 0-2ft
Date Sampled: 10/01/19 11:00
Percent Solids: 84
Initial Volume: 20.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/19 11:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	385 (44.0)		8100M		1	10/05/19 17:54	C9J0040	CJ90411
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		87 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 0-2ft
Date Sampled: 10/01/19 11:00
Percent Solids: 84
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0112
ESS Laboratory Sample ID: 19J0112-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 10/7/19 11:35

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Acenaphthene	ND (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Acenaphthylene	ND (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Anthracene	0.773 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Benzo(a)anthracene	2.74 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Benzo(a)pyrene	2.87 (0.210)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Benzo(b)fluoranthene	2.61 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Benzo(g,h,i)perylene	1.79 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Benzo(k)fluoranthene	2.01 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Chrysene	2.61 (0.210)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Dibenzo(a,h)Anthracene	0.583 (0.210)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Fluoranthene	5.06 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Fluorene	0.782 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Indeno(1,2,3-cd)Pyrene	1.72 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Naphthalene	ND (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Phenanthrene	2.86 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709
Pyrene	3.96 (0.418)		8270D PAH		1	10/09/19 19:20	C9J0170	CJ90709

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	40 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	43 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	38 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	52 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CJ90501 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet
Barium	ND	2.50	mg/kg wet
Cadmium	ND	0.50	mg/kg wet
Chromium	ND	1.00	mg/kg wet
Lead	ND	5.00	mg/kg wet
Selenium	ND	5.00	mg/kg wet
Silver	ND	0.50	mg/kg wet

LCS

Arsenic	125	8.06	mg/kg wet	128.0	98	80-120
Barium	531	8.06	mg/kg wet	536.0	99	80-120
Cadmium	89.4	1.61	mg/kg wet	99.00	90	80-120
Chromium	114	3.23	mg/kg wet	116.0	98	80-120
Lead	272	16.1	mg/kg wet	277.0	98	80-120
Selenium	236	16.1	mg/kg wet	242.0	97	80-120
Silver	62.7	1.61	mg/kg wet	64.30	98	80-120

LCS Dup

Arsenic	122	9.62	mg/kg wet	128.0	95	80-120	3	20
Barium	614	9.62	mg/kg wet	536.0	115	80-120	15	20
Cadmium	85.0	1.92	mg/kg wet	99.00	86	80-120	5	20
Chromium	108	3.85	mg/kg wet	116.0	93	80-120	5	20
Lead	285	19.2	mg/kg wet	277.0	103	80-120	5	20
Selenium	227	19.2	mg/kg wet	242.0	94	80-120	4	20
Silver	59.3	1.92	mg/kg wet	64.30	92	80-120	6	20

Batch CJ90502 - 7471B

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	2.80	0.239	mg/kg wet	3.120	90	80-120
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LCS Dup

Mercury	2.81	0.228	mg/kg wet	3.120	90	80-120	0.2	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethene	ND	0.0050	mg/kg wet
1,1-Dichloropropene	ND	0.0050	mg/kg wet
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

1,2,3-Trichloropropane	ND	0.0050	mg/kg wet
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet
1,2-Dibromoethane	ND	0.0050	mg/kg wet
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet
1,2-Dichloroethane	ND	0.0050	mg/kg wet
1,2-Dichloropropane	ND	0.0050	mg/kg wet
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet
1,3-Dichloropropane	ND	0.0050	mg/kg wet
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet
1,4-Dioxane	ND	0.100	mg/kg wet
1-Chlorohexane	ND	0.0050	mg/kg wet
2,2-Dichloropropane	ND	0.0050	mg/kg wet
2-Butanone	ND	0.0500	mg/kg wet
2-Chlorotoluene	ND	0.0050	mg/kg wet
2-Hexanone	ND	0.0500	mg/kg wet
4-Chlorotoluene	ND	0.0050	mg/kg wet
4-Isopropyltoluene	ND	0.0050	mg/kg wet
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet
Acetone	ND	0.0500	mg/kg wet
Benzene	ND	0.0050	mg/kg wet
Bromobenzene	ND	0.0050	mg/kg wet
Bromochloromethane	ND	0.0050	mg/kg wet
Bromodichloromethane	ND	0.0050	mg/kg wet
Bromoform	ND	0.0050	mg/kg wet
Bromomethane	ND	0.0100	mg/kg wet
Carbon Disulfide	ND	0.0050	mg/kg wet
Carbon Tetrachloride	ND	0.0050	mg/kg wet
Chlorobenzene	ND	0.0050	mg/kg wet
Chloroethane	ND	0.0100	mg/kg wet
Chloroform	ND	0.0050	mg/kg wet
Chloromethane	ND	0.0100	mg/kg wet
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet
Dibromochloromethane	ND	0.0050	mg/kg wet
Dibromomethane	ND	0.0050	mg/kg wet
Dichlorodifluoromethane	ND	0.0100	mg/kg wet
Diethyl Ether	ND	0.0050	mg/kg wet
Di-isopropyl ether	ND	0.0050	mg/kg wet
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet
Ethylbenzene	ND	0.0050	mg/kg wet
Hexachlorobutadiene	ND	0.0050	mg/kg wet
Isopropylbenzene	ND	0.0050	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0569		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: Dibromofluoromethane	0.0531		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0499		mg/kg wet	0.05000		100	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,1-Trichloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2,2-Tetrachloroethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,1,2-Trichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
1,1-Dichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
1,1-Dichloropropene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
1,2,3-Trichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,3-Trichloropropane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,4-Trimethylbenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dibromo-3-Chloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dibromoethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichloroethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
1,3,5-Trimethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,3-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
1,3-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

1,4-Dioxane	0.984	0.100	mg/kg wet	1.000		98	70-130			
1-Chlorohexane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
2-Butanone	0.277	0.0500	mg/kg wet	0.2500		111	70-130			
2-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
2-Hexanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
4-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.261	0.0500	mg/kg wet	0.2500		105	70-130			
Acetone	0.269	0.0500	mg/kg wet	0.2500		108	70-130			
Benzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Bromochloromethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
Bromodichloromethane	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Bromomethane	0.0430	0.0100	mg/kg wet	0.05000		86	70-130			
Carbon Disulfide	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Carbon Tetrachloride	0.0594	0.0050	mg/kg wet	0.05000		119	70-130			
Chlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Chloroethane	0.0496	0.0100	mg/kg wet	0.05000		99	70-130			
Chloroform	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Chloromethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
cis-1,2-Dichloroethene	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
cis-1,3-Dichloropropene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Dibromochloromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromomethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Dichlorodifluoromethane	0.0420	0.0100	mg/kg wet	0.05000		84	70-130			
Diethyl Ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Di-isopropyl ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Ethyl tertiary-butyl ether	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Hexachlorobutadiene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Isopropylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Methyl tert-Butyl Ether	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Methylene Chloride	0.0511	0.0250	mg/kg wet	0.05000		102	70-130			
Naphthalene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
n-Butylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
n-Propylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
tert-Butylbenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Tertiary-amyl methyl ether	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrachloroethene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Toluene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

trans-1,2-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
trans-1,3-Dichloropropene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Trichloroethene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Trichlorofluoromethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Acetate	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
Vinyl Chloride	0.0493	0.0100	mg/kg wet	0.05000		99	70-130			
Xylene O	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Xylene P,M	0.0971	0.0100	mg/kg wet	0.1000		97	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0573		mg/kg wet	0.05000		115	70-130			
Surrogate: 4-Bromofluorobenzene	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0564		mg/kg wet	0.05000		113	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	10	25	
1,1,1-Trichloroethane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1,2-Trichloroethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
1,1-Dichloroethane	0.0595	0.0050	mg/kg wet	0.05000		119	70-130	5	25	
1,1-Dichloroethene	0.0612	0.0050	mg/kg wet	0.05000		122	70-130	7	25	
1,1-Dichloropropene	0.0593	0.0050	mg/kg wet	0.05000		119	70-130	6	25	
1,2,3-Trichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	11	25	
1,2,3-Trichloropropane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
1,2,4-Trichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	11	25	
1,2,4-Trimethylbenzene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
1,2-Dibromoethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
1,2-Dichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	9	25	
1,2-Dichloroethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	5	25	
1,2-Dichloropropane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
1,3,5-Trimethylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	8	25	
1,3-Dichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
1,3-Dichloropropane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	8	25	
1,4-Dichlorobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
1,4-Dioxane	1.08	0.100	mg/kg wet	1.000		108	70-130	9	20	
1-Chlorohexane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	11	25	
2,2-Dichloropropane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
2-Butanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130	5	25	
2-Chlorotoluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
2-Hexanone	0.268	0.0500	mg/kg wet	0.2500		107	70-130	9	25	
4-Chlorotoluene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	13	25	
4-Isopropyltoluene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	9	25	
4-Methyl-2-Pentanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130	7	25	
Acetone	0.295	0.0500	mg/kg wet	0.2500		118	70-130	9	25	
Benzene	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
Bromobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	10	25	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90401 - 5035

Bromochloromethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	7	25	
Bromodichloromethane	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	5	25	
Bromoform	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	9	25	
Bromomethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130	7	25	
Carbon Disulfide	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	5	25	
Carbon Tetrachloride	0.0625	0.0050	mg/kg wet	0.05000		125	70-130	5	25	
Chlorobenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
Chloroethane	0.0520	0.0100	mg/kg wet	0.05000		104	70-130	5	25	
Chloroform	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	5	25	
Chloromethane	0.0484	0.0100	mg/kg wet	0.05000		97	70-130	5	25	
cis-1,2-Dichloroethene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
cis-1,3-Dichloropropene	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	7	25	
Dibromochloromethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
Dibromomethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	6	25	
Dichlorodifluoromethane	0.0437	0.0100	mg/kg wet	0.05000		87	70-130	4	25	
Diethyl Ether	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	9	25	
Di-isopropyl ether	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	7	25	
Ethyl tertiary-butyl ether	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	7	25	
Ethylbenzene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	10	25	
Hexachlorobutadiene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	10	25	
Isopropylbenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Methylene Chloride	0.0539	0.0250	mg/kg wet	0.05000		108	70-130	5	25	
Naphthalene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	12	25	
n-Butylbenzene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
n-Propylbenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
sec-Butylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	9	25	
Styrene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
tert-Butylbenzene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Tertiary-amyl methyl ether	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Tetrachloroethene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
Tetrahydrofuran	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
Toluene	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
trans-1,2-Dichloroethene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	7	25	
trans-1,3-Dichloropropene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
Trichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	6	25	
Trichlorofluoromethane	0.0581	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
Vinyl Acetate	0.0622	0.0050	mg/kg wet	0.05000		124	70-130	9	25	
Vinyl Chloride	0.0516	0.0100	mg/kg wet	0.05000		103	70-130	5	25	
Xylene O	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	9	25	
Xylene P,M	0.106	0.0100	mg/kg wet	0.1000		106	70-130	9	25	
Surrogate: 1,2-Dichloroethane-d4	0.0555		mg/kg wet	0.05000		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Dibromofluoromethane	0.0555		mg/kg wet	0.05000		111	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90733 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
1-Chlorohexane	ND	0.0050	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0500	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0500	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet							
Acetone	ND	0.0500	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90733 - 5035

Dibromochloromethane	ND	0.0050	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0542		mg/kg wet	0.05000		108	70-130			
Surrogate: 4-Bromofluorobenzene	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0490		mg/kg wet	0.05000		98	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,1,1-Trichloroethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
1,1,2,2-Tetrachloroethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,1,2-Trichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2,3-Trichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichloropropane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,4-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trimethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90733 - 5035

1,2-Dibromo-3-Chloropropane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromoethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,3,5-Trimethylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,3-Dichlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,4-Dichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dioxane	0.985	0.100	mg/kg wet	1.000		98	70-130			
1-Chlorohexane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130			
2-Chlorotoluene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
2-Hexanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
4-Isopropyltoluene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
4-Methyl-2-Pentanone	0.257	0.0500	mg/kg wet	0.2500		103	70-130			
Acetone	0.252	0.0500	mg/kg wet	0.2500		101	70-130			
Benzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Bromobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromodichloromethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Bromoform	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Bromomethane	0.0407	0.0100	mg/kg wet	0.05000		81	70-130			
Carbon Disulfide	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0435	0.0100	mg/kg wet	0.05000		87	70-130			
Chloroform	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Chloromethane	0.0415	0.0100	mg/kg wet	0.05000		83	70-130			
cis-1,2-Dichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
cis-1,3-Dichloropropene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Dibromochloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Dibromomethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Dichlorodifluoromethane	0.0333	0.0100	mg/kg wet	0.05000		67	70-130			B-
Diethyl Ether	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Di-isopropyl ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Ethyl tertiary-butyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Methylene Chloride	0.0504	0.0250	mg/kg wet	0.05000		101	70-130			
Naphthalene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90733 - 5035

n-Butylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
n-Propylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
sec-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Styrene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
tert-Butylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Toluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
trans-1,2-Dichloroethene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Trichloroethene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Vinyl Acetate	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Vinyl Chloride	0.0432	0.0100	mg/kg wet	0.05000		86	70-130			
Xylene O	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Xylene P,M	0.0923	0.0100	mg/kg wet	0.1000		92	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0513</i>		mg/kg wet	<i>0.05000</i>		<i>103</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0506</i>		mg/kg wet	<i>0.05000</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0520</i>		mg/kg wet	<i>0.05000</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0501</i>		mg/kg wet	<i>0.05000</i>		<i>100</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
1,1,1-Trichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	12	25	
1,1,2,2-Tetrachloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	11	25	
1,1,2-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
1,1-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
1,1-Dichloroethene	0.0602	0.0050	mg/kg wet	0.05000		120	70-130	14	25	
1,1-Dichloropropene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	13	25	
1,2,3-Trichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
1,2,3-Trichloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
1,2,4-Trichlorobenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
1,2,4-Trimethylbenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	10	25	
1,2-Dibromo-3-Chloropropane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
1,2-Dibromoethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
1,2-Dichlorobenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
1,2-Dichloroethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
1,2-Dichloropropane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
1,3,5-Trimethylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	12	25	
1,3-Dichlorobenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
1,3-Dichloropropane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130	10	20	
1-Chlorohexane	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	14	25	
2,2-Dichloropropane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	11	25	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90733 - 5035

2-Butanone	0.288	0.0500	mg/kg wet	0.2500		115	70-130	12	25	
2-Chlorotoluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	10	25	
2-Hexanone	0.283	0.0500	mg/kg wet	0.2500		113	70-130	12	25	
4-Chlorotoluene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	11	25	
4-Isopropyltoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	11	25	
4-Methyl-2-Pentanone	0.285	0.0500	mg/kg wet	0.2500		114	70-130	10	25	
Acetone	0.342	0.0500	mg/kg wet	0.2500		137	70-130	30	25	B+, D+
Benzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	10	25	
Bromobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	10	25	
Bromochloromethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
Bromodichloromethane	0.0549	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
Bromoform	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
Bromomethane	0.0439	0.0100	mg/kg wet	0.05000		88	70-130	8	25	
Carbon Disulfide	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	13	25	
Carbon Tetrachloride	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	12	25	
Chlorobenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	11	25	
Chloroethane	0.0480	0.0100	mg/kg wet	0.05000		96	70-130	10	25	
Chloroform	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
Chloromethane	0.0466	0.0100	mg/kg wet	0.05000		93	70-130	12	25	
cis-1,2-Dichloroethene	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	9	25	
cis-1,3-Dichloropropene	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	7	25	
Dibromochloromethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
Dibromomethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	8	25	
Dichlorodifluoromethane	0.0379	0.0100	mg/kg wet	0.05000		76	70-130	13	25	
Diethyl Ether	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Di-isopropyl ether	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
Ethyl tertiary-butyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
Ethylbenzene	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	12	25	
Hexachlorobutadiene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	11	25	
Isopropylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	13	25	
Methyl tert-Butyl Ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
Methylene Chloride	0.0549	0.0250	mg/kg wet	0.05000		110	70-130	8	25	
Naphthalene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	10	25	
n-Butylbenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	12	25	
n-Propylbenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	13	25	
sec-Butylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	14	25	
Styrene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	10	25	
tert-Butylbenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	13	25	
Tertiary-amyl methyl ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrachloroethene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	14	25	
Tetrahydrofuran	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	9	25	
Toluene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	10	25	
trans-1,2-Dichloroethene	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	11	25	
trans-1,3-Dichloropropene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Trichloroethene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	11	25	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ90733 - 5035

Trichlorofluoromethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	13	25	
Vinyl Acetate	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	9	25	
Vinyl Chloride	0.0492	0.0100	mg/kg wet	0.05000		98	70-130	13	25	
Xylene O	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	12	25	
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130	12	25	
Surrogate: 1,2-Dichloroethane-d4	0.0503		mg/kg wet	0.05000		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ90411 - 3546

Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	4.37		mg/kg wet	5.000		87	40-140			
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LCS										
Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Dodecane (C12)	1.7	0.2	mg/kg wet	2.500		70	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Nonane (C9)	1.5	0.2	mg/kg wet	2.500		59	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Total Petroleum Hydrocarbons	29.1	37.5	mg/kg wet	35.00		83	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		87	40-140			



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CJ90411 - 3546

<i>Surrogate: O-Terphenyl</i>	4.53		mg/kg wet	5.000		91	40-140			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140	12	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140	1	25	
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		80	40-140	14	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		90	40-140	0.8	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		88	40-140	6	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		96	40-140	1	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140	12	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	4	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		89	40-140	1	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		90	40-140	2	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		86	40-140	9	25	
Total Petroleum Hydrocarbons	29.7	37.5	mg/kg wet	35.00		85	40-140	2	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		83	40-140	4	25	

<i>Surrogate: O-Terphenyl</i>	4.51		mg/kg wet	5.000		90	40-140			
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8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90322 - 3546

Blank										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.167	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	2.16		mg/kg wet	3.333		65	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.09		mg/kg wet	3.333		63	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.19		mg/kg wet	3.333		66	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.97		mg/kg wet	3.333		89	30-130			

LCS



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90322 - 3546

2-Methylnaphthalene	1.83	0.333	mg/kg wet	3.333		55	40-140			
Acenaphthene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Acenaphthylene	2.06	0.333	mg/kg wet	3.333		62	40-140			
Anthracene	2.51	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)anthracene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Benzo(a)pyrene	2.39	0.167	mg/kg wet	3.333		72	40-140			
Benzo(b)fluoranthene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Benzo(g,h,i)perylene	2.76	0.333	mg/kg wet	3.333		83	40-140			
Benzo(k)fluoranthene	2.40	0.333	mg/kg wet	3.333		72	40-140			
Chrysene	2.71	0.167	mg/kg wet	3.333		81	40-140			
Dibenzo(a,h)Anthracene	2.77	0.167	mg/kg wet	3.333		83	40-140			
Fluoranthene	2.75	0.333	mg/kg wet	3.333		82	40-140			
Fluorene	2.26	0.333	mg/kg wet	3.333		68	40-140			
Indeno(1,2,3-cd)Pyrene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Naphthalene	1.75	0.333	mg/kg wet	3.333		53	40-140			
Phenanthrene	2.27	0.333	mg/kg wet	3.333		68	40-140			
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	1.76		mg/kg wet	3.333		53	30-130			
Surrogate: 2-Fluorobiphenyl	1.91		mg/kg wet	3.333		57	30-130			
Surrogate: Nitrobenzene-d5	1.81		mg/kg wet	3.333		54	30-130			
Surrogate: p-Terphenyl-d14	2.75		mg/kg wet	3.333		83	30-130			

LCS Dup

2-Methylnaphthalene	1.95	0.333	mg/kg wet	3.333		58	40-140	6	30	
Acenaphthene	2.09	0.333	mg/kg wet	3.333		63	40-140	7	30	
Acenaphthylene	2.20	0.333	mg/kg wet	3.333		66	40-140	6	30	
Anthracene	2.69	0.333	mg/kg wet	3.333		81	40-140	7	30	
Benzo(a)anthracene	2.94	0.333	mg/kg wet	3.333		88	40-140	6	30	
Benzo(a)pyrene	2.55	0.167	mg/kg wet	3.333		77	40-140	7	30	
Benzo(b)fluoranthene	2.73	0.333	mg/kg wet	3.333		82	40-140	8	30	
Benzo(g,h,i)perylene	2.92	0.333	mg/kg wet	3.333		87	40-140	6	30	
Benzo(k)fluoranthene	2.43	0.333	mg/kg wet	3.333		73	40-140	1	30	
Chrysene	2.83	0.167	mg/kg wet	3.333		85	40-140	4	30	
Dibenzo(a,h)Anthracene	2.96	0.167	mg/kg wet	3.333		89	40-140	7	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
Fluorene	2.39	0.333	mg/kg wet	3.333		72	40-140	5	30	
Indeno(1,2,3-cd)Pyrene	2.88	0.333	mg/kg wet	3.333		87	40-140	7	30	
Naphthalene	1.82	0.333	mg/kg wet	3.333		55	40-140	4	30	
Phenanthrene	2.43	0.333	mg/kg wet	3.333		73	40-140	7	30	
Pyrene	2.69	0.333	mg/kg wet	3.333		81	40-140	4	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.75		mg/kg wet	3.333		52	30-130			
Surrogate: 2-Fluorobiphenyl	1.94		mg/kg wet	3.333		58	30-130			
Surrogate: Nitrobenzene-d5	1.81		mg/kg wet	3.333		54	30-130			
Surrogate: p-Terphenyl-d14	2.74		mg/kg wet	3.333		82	30-130			

Batch CJ90709 - 3546

Blank



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90709 - 3546

2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.10		mg/kg wet	4.167		51	30-130			
Surrogate: 2-Fluorobiphenyl	2.05		mg/kg wet	4.167		49	30-130			
Surrogate: Nitrobenzene-d5	2.08		mg/kg wet	4.167		50	30-130			
Surrogate: p-Terphenyl-d14	2.91		mg/kg wet	4.167		70	30-130			

LCS

2-Methylnaphthalene	1.81	0.333	mg/kg wet	3.333		54	40-140			
Acenaphthene	2.13	0.333	mg/kg wet	3.333		64	40-140			
Acenaphthylene	2.18	0.333	mg/kg wet	3.333		66	40-140			
Anthracene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)anthracene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)pyrene	2.42	0.167	mg/kg wet	3.333		73	40-140			
Benzo(b)fluoranthene	2.40	0.333	mg/kg wet	3.333		72	40-140			
Benzo(g,h,i)perylene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Benzo(k)fluoranthene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Chrysene	2.73	0.167	mg/kg wet	3.333		82	40-140			
Dibenzo(a,h)Anthracene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Fluoranthene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Fluorene	2.40	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	2.78	0.333	mg/kg wet	3.333		84	40-140			
Naphthalene	1.84	0.333	mg/kg wet	3.333		55	40-140			
Phenanthrene	2.42	0.333	mg/kg wet	3.333		73	40-140			
Pyrene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	1.76		mg/kg wet	4.167		42	30-130			
Surrogate: 2-Fluorobiphenyl	1.94		mg/kg wet	4.167		47	30-130			
Surrogate: Nitrobenzene-d5	1.80		mg/kg wet	4.167		43	30-130			
Surrogate: p-Terphenyl-d14	2.52		mg/kg wet	4.167		61	30-130			

LCS Dup

2-Methylnaphthalene	2.04	0.333	mg/kg wet	3.333		61	40-140	12	30	
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CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Polynuclear Aromatic Hydrocarbons

Batch CJ90709 - 3546

Acenaphthene	2.30	0.333	mg/kg wet	3.333		69	40-140	8	30	
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		71	40-140	9	30	
Anthracene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.03	30	
Benzo(a)anthracene	2.79	0.333	mg/kg wet	3.333		84	40-140	2	30	
Benzo(a)pyrene	2.61	0.167	mg/kg wet	3.333		78	40-140	8	30	
Benzo(b)fluoranthene	2.72	0.333	mg/kg wet	3.333		82	40-140	12	30	
Benzo(g,h,i)perylene	2.61	0.333	mg/kg wet	3.333		78	40-140	7	30	
Benzo(k)fluoranthene	2.54	0.333	mg/kg wet	3.333		76	40-140	5	30	
Chrysene	2.71	0.167	mg/kg wet	3.333		81	40-140	0.7	30	
Dibenzo(a,h)Anthracene	2.67	0.167	mg/kg wet	3.333		80	40-140	7	30	
Fluoranthene	2.60	0.333	mg/kg wet	3.333		78	40-140	3	30	
Fluorene	2.50	0.333	mg/kg wet	3.333		75	40-140	4	30	
Indeno(1,2,3-cd)Pyrene	2.63	0.333	mg/kg wet	3.333		79	40-140	6	30	
Naphthalene	1.91	0.333	mg/kg wet	3.333		57	40-140	3	30	
Phenanthrene	2.40	0.333	mg/kg wet	3.333		72	40-140	1	30	
Pyrene	2.60	0.333	mg/kg wet	3.333		78	40-140	1	30	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>1.69</i>		mg/kg wet	<i>4.167</i>		<i>41</i>	<i>30-130</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>2.09</i>		mg/kg wet	<i>4.167</i>		<i>50</i>	<i>30-130</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.76</i>		mg/kg wet	<i>4.167</i>		<i>42</i>	<i>30-130</i>			
<i>Surrogate: p-Terphenyl-d14</i>	<i>2.66</i>		mg/kg wet	<i>4.167</i>		<i>64</i>	<i>30-130</i>			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

Notes and Definitions

- U Analyte included in the analysis, but not detected
- S+ Surrogate recovery(ies) above upper control limit (S+).
- PT Pentachlorophenol tailing factor > 2.
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- BT Benzidine tailing factor >2.
- B+ Blank Spike recovery is above upper control limit (B+).
- B- 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
- F/V Final 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
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report
- RL Reporting Limit
- EDL Estimated Detection Limit
- MF Membrane Filtration
- MPN Most Probably Number
- TNTC Too numerous to Count
- CFU Colony Forming Units



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0112

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

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: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML

ESS Project ID: 19J0112

Shipped/Delivered Via: ESS Courier

Date Received: 10/3/2019

Project Due Date: 10/10/2019

Days for Project: 5 Day

1. Air bill manifest present? No
Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
Temp: 0.9 Iced with: Ice
5. Was COC signed and dated by client? Yes

6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. Were labs informed about short holds & rushes? Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
ESS Sample IDs: _____
Analysis: _____
TAT: _____

12. Were VOAs received? Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
b. Low Level VOA vials frozen: Date: _____ Time: _____ By: client

Sample Receiving Notes:

LL rec'd frozen

COC = SE-103 (0.2); Cap = same; Label = SE-102 (0.2) (vial - 805)

14. Was there a need to contact Project Manager? Yes / No
a. Was there a need to contact the client? Yes / No
Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	394851	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	394854	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	394859	Yes	NA	Yes	VOA Vial - Other	Other	
01	394860	Yes	NA	Yes	VOA Vial - Other	Other	
02	394850	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	394853	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	394857	Yes	NA	Yes	VOA Vial - Other	Other	
02	394858	Yes	NA	Yes	VOA Vial - Other	Other	
03	394849	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	394852	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	394855	Yes	NA	Yes	VOA Vial - Other	Other	
03	394856	Yes	NA	Yes	VOA Vial - Other	Other	
04	394861	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	394863	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	394864	Yes	NA	Yes	VOA Vial - Other	Other	
04	394865	Yes	NA	Yes	VOA Vial - Other	Other	

2nd Review

- Were all containers scanned into storage/lab?
Are barcode labels on correct containers?
Are all Flashpoint stickers attached/container ID # circled?
Are all Hex Chrome stickers attached?

Initials: [Signature]
Yes / No
Yes / No / NA
Yes / No / NA

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML

ESS Project ID: 19J0112


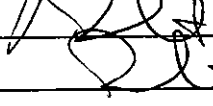

Date Received: 10/3/2019

Are all QC stickers attached?

Yes / No NA

Are VOA stickers attached if bubbles noted?

Yes / No NA

Completed		Date & Time:	<u>10/3/19</u>	<u>14:04</u>
By:				
Reviewed		Date & Time:	<u>10/3/19</u>	<u>1427</u>
By:				
Delivered			<u>10/3/19</u>	<u>1407</u>
By:				

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 195012

Turn Time 5 Days
 Regulatory State RI
 Is this project for any of the following?:
 CT RCP MA MCP RGP

Reporting Limits RIDEM R-DEC, GB-LC
 Electronic Data Checker Excel
 Deliverables Other (Please Specify ->)

Company Name SAGE ENVIRONMENTAL
 Contact Person DAN BRYNES
 Project # SZ935 Project Name WAITES WHARF, NEWPORT
 Address 172 ARMISTICE BLVD.
 City Pawtucket State RI Zip Code 02860 PO #
 Telephone Number 401-723-9906 FAX Number Email Address dbrynes@sage-enviro.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID
1	10/1/19	9:00	G	S	SE-101 (0'-2')
2		9:15			SE-101 (2'-7')
3		10:00			SE-102 (0'-2')
4		11:00			SE-103 (0'-2')
DB	10/1/19	10:00	G	S	SE-104 (0'-2')
DB	10/1/19	10:00	G	S	SE-105 (0'-2')
DB	10/1/19	10:00	G	S	SE-106 (0'-2')

Analysis	VOCs	TPH	PAHs	RCRA 8
	x	x	x	x
	↓	↓	↓	↓
	↓	↓	↓	↓
	↓	↓	↓	↓
	↓	↓	↓	↓
	↓	↓	↓	↓
	↓	↓	↓	↓
	↓	↓	↓	↓

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial Vial
 Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* 10.7
 Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAcAc, NaOH 9-NH4Cl 10-DI H2O 11-Other* 10.10
 Number of Containers per Sample: 4

Laboratory Use Only
 Cooler Present:
 Seals Intact:
 Cooler Temperature: 0.9 °C

Sampled by: DAN BRYNES
 Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time) Sally Mae 10/3/19 9:21	Received By: (Signature, Date & Time) 10/3/19 9:21	Relinquished By: (Signature, Date & Time) 10/3/19 9:58	Received By: (Signature, Date & Time) 10/3/19 9:58
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ATTACHMENT 3



CERTIFICATE OF ANALYSIS

Dan Boynes
Sage Environmental, inc.
172 Armistice Boulevard
Pawtucket, RI 02860

RE: Waites Wharf Newport (S2935)
ESS Laboratory Work Order Number: 19J0209

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.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:28 pm, Oct 15, 2019

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 TNI and relative state standards, 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.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

SAMPLE RECEIPT

The following samples were received on October 07, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0209-01	SE-104 MW	Ground Water	8260B
19J0209-02	SE-105 MW	Ground Water	8260B
19J0209-03	SE-106 MW	Ground Water	8260B



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[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](#)



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

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
- 8015C - 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
- MADEP 18-2.1 - VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / 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
- 5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
1-Chlorohexane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
2-Butanone	ND (0.0100)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
2-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
2-Hexanone	ND (0.0100)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
4-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Acetone	ND (0.0100)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Benzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Bromobenzene	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-104 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Bromodichloromethane	ND (0.0006)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Bromoform	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Bromomethane	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Carbon Disulfide	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Chlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Chloroethane	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Chloroform	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Chloromethane	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Dibromochloromethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Dibromomethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Diethyl Ether	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Di-isopropyl ether	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Ethylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Hexachloroethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Isopropylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Methylene Chloride	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Naphthalene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
n-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
n-Propylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
sec-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Styrene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
tert-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Tetrachloroethene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport
 Client Sample ID: SE-104 MW
 Date Sampled: 10/04/19 00:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
 ESS Laboratory Sample ID: 19J0209-01
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Toluene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Trichloroethene	0.0026 (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Vinyl Acetate	ND (0.0050)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Vinyl Chloride	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Xylene O	ND (0.0010)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Xylene P,M	ND (0.0020)		8260B		1	10/09/19 2:00	C9J0167	CJ90864
Xylenes (Total)	ND (0.00200)		8260B		1	10/09/19 2:00		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	99 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	98 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
1-Chlorohexane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
2-Butanone	ND (0.0100)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
2-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
2-Hexanone	ND (0.0100)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
4-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Acetone	ND (0.0100)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Benzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Bromobenzene	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-105 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Bromodichloromethane	ND (0.0006)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Bromoform	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Bromomethane	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Carbon Disulfide	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Chlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Chloroethane	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Chloroform	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Chloromethane	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Dibromochloromethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Dibromomethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Diethyl Ether	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Di-isopropyl ether	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Ethylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Hexachloroethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Isopropylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Methylene Chloride	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Naphthalene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
n-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
n-Propylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
sec-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Styrene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
tert-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Tetrachloroethene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport
 Client Sample ID: SE-105 MW
 Date Sampled: 10/04/19 00:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
 ESS Laboratory Sample ID: 19J0209-02
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Toluene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Trichloroethene	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Vinyl Acetate	ND (0.0050)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Vinyl Chloride	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Xylene O	ND (0.0010)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Xylene P,M	ND (0.0020)		8260B		1	10/09/19 0:16	C9J0167	CJ90864
Xylenes (Total)	ND (0.00200)		8260B		1	10/09/19 0:16		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	100 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	98 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	97 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
1-Chlorohexane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
2-Butanone	ND (0.0100)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
2-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
2-Hexanone	ND (0.0100)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
4-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Acetone	ND (0.0100)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Benzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Bromobenzene	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Bromodichloromethane	ND (0.0006)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Bromoform	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Bromomethane	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Carbon Disulfide	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Chlorobenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Chloroethane	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Chloroform	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Chloromethane	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Dibromochloromethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Dibromomethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Diethyl Ether	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Di-isopropyl ether	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Ethylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Hexachloroethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Isopropylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Methylene Chloride	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Naphthalene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
n-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
n-Propylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
sec-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Styrene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
tert-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Tetrachloroethene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-106 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0209
ESS Laboratory Sample ID: 19J0209-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Toluene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Trichloroethene	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Vinyl Acetate	ND (0.0050)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Vinyl Chloride	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Xylene O	ND (0.0010)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Xylene P,M	ND (0.0020)		8260B		1	10/09/19 0:42	C9J0167	CJ90864
Xylenes (Total)	ND (0.00200)		8260B		1	10/09/19 0:42		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>99 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0204		mg/L	0.02500		82	70-130			
Surrogate: 4-Bromofluorobenzene	0.0277		mg/L	0.02500		111	70-130			
Surrogate: Dibromofluoromethane	0.0222		mg/L	0.02500		89	70-130			
Surrogate: Toluene-d8	0.0282		mg/L	0.02500		113	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.98		ug/L	10.00		90	70-130			
1,1,1-Trichloroethane	9.36		ug/L	10.00		94	70-130			
1,1,2,2-Tetrachloroethane	9.34		ug/L	10.00		93	70-130			
1,1,2-Trichloroethane	9.26		ug/L	10.00		93	70-130			
1,1-Dichloroethane	9.44		ug/L	10.00		94	70-130			
1,1-Dichloroethene	9.87		ug/L	10.00		99	70-130			
1,1-Dichloropropene	9.36		ug/L	10.00		94	70-130			
1,2,3-Trichlorobenzene	9.35		ug/L	10.00		94	70-130			
1,2,3-Trichloropropane	8.51		ug/L	10.00		85	70-130			
1,2,4-Trichlorobenzene	9.37		ug/L	10.00		94	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

1,2,4-Trimethylbenzene	9.41		ug/L	10.00		94	70-130			
1,2-Dibromo-3-Chloropropane	9.15		ug/L	10.00		92	70-130			
1,2-Dibromoethane	9.14		ug/L	10.00		91	70-130			
1,2-Dichlorobenzene	9.13		ug/L	10.00		91	70-130			
1,2-Dichloroethane	9.43		ug/L	10.00		94	70-130			
1,2-Dichloropropane	9.35		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	9.39		ug/L	10.00		94	70-130			
1,3-Dichlorobenzene	9.14		ug/L	10.00		91	70-130			
1,3-Dichloropropane	9.59		ug/L	10.00		96	70-130			
1,4-Dichlorobenzene	9.49		ug/L	10.00		95	70-130			
1,4-Dioxane - Screen	228		ug/L	200.0		114	0-332			
1-Chlorohexane	9.16		ug/L	10.00		92	70-130			
2,2-Dichloropropane	9.26		ug/L	10.00		93	70-130			
2-Butanone	48.7		ug/L	50.00		97	70-130			
2-Chlorotoluene	9.24		ug/L	10.00		92	70-130			
2-Hexanone	48.0		ug/L	50.00		96	70-130			
4-Chlorotoluene	9.32		ug/L	10.00		93	70-130			
4-Isopropyltoluene	9.30		ug/L	10.00		93	70-130			
4-Methyl-2-Pentanone	47.5		ug/L	50.00		95	70-130			
Acetone	48.2		ug/L	50.00		96	70-130			
Benzene	9.27		ug/L	10.00		93	70-130			
Bromobenzene	9.35		ug/L	10.00		94	70-130			
Bromochloromethane	8.77		ug/L	10.00		88	70-130			
Bromodichloromethane	9.39		ug/L	10.00		94	70-130			
Bromoform	8.67		ug/L	10.00		87	70-130			
Bromomethane	8.14		ug/L	10.00		81	70-130			
Carbon Disulfide	8.76		ug/L	10.00		88	70-130			
Carbon Tetrachloride	8.95		ug/L	10.00		90	70-130			
Chlorobenzene	9.11		ug/L	10.00		91	70-130			
Chloroethane	7.90		ug/L	10.00		79	70-130			
Chloroform	9.58		ug/L	10.00		96	70-130			
Chloromethane	8.24		ug/L	10.00		82	70-130			
cis-1,2-Dichloroethene	9.47		ug/L	10.00		95	70-130			
cis-1,3-Dichloropropene	9.11		ug/L	10.00		91	70-130			
Dibromochloromethane	8.76		ug/L	10.00		88	70-130			
Dibromomethane	9.48		ug/L	10.00		95	70-130			
Dichlorodifluoromethane	7.39		ug/L	10.00		74	70-130			
Diethyl Ether	8.59		ug/L	10.00		86	70-130			
Di-isopropyl ether	9.83		ug/L	10.00		98	70-130			
Ethyl tertiary-butyl ether	9.11		ug/L	10.00		91	70-130			
Ethylbenzene	9.35		ug/L	10.00		94	70-130			
Hexachlorobutadiene	9.75		ug/L	10.00		98	70-130			
Hexachloroethane	7.89		ug/L	10.00		79	70-130			
Isopropylbenzene	9.28		ug/L	10.00		93	70-130			
Methyl tert-Butyl Ether	8.89		ug/L	10.00		89	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

Methylene Chloride	9.24		ug/L	10.00		92	70-130			
Naphthalene	8.91		ug/L	10.00		89	70-130			
n-Butylbenzene	9.45		ug/L	10.00		94	70-130			
n-Propylbenzene	9.28		ug/L	10.00		93	70-130			
sec-Butylbenzene	9.24		ug/L	10.00		92	70-130			
Styrene	9.04		ug/L	10.00		90	70-130			
tert-Butylbenzene	9.09		ug/L	10.00		91	70-130			
Tertiary-amyl methyl ether	9.53		ug/L	10.00		95	70-130			
Tetrachloroethene	7.66		ug/L	10.00		77	70-130			
Tetrahydrofuran	8.70		ug/L	10.00		87	70-130			
Toluene	9.17		ug/L	10.00		92	70-130			
trans-1,2-Dichloroethene	9.68		ug/L	10.00		97	70-130			
trans-1,3-Dichloropropene	9.02		ug/L	10.00		90	70-130			
Trichloroethene	9.02		ug/L	10.00		90	70-130			
Trichlorofluoromethane	9.40		ug/L	10.00		94	70-130			
Vinyl Acetate	10.7		ug/L	10.00		107	70-130			
Vinyl Chloride	8.71		ug/L	10.00		87	70-130			
Xylene O	9.14		ug/L	10.00		91	70-130			
Xylene P,M	18.5		ug/L	20.00		93	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0251		mg/L	0.02500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0248		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0249		mg/L	0.02500		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.86		ug/L	10.00		89	70-130	1	25	
1,1,1-Trichloroethane	9.25		ug/L	10.00		92	70-130	1	25	
1,1,2,2-Tetrachloroethane	8.96		ug/L	10.00		90	70-130	4	25	
1,1,2-Trichloroethane	9.16		ug/L	10.00		92	70-130	1	25	
1,1-Dichloroethane	9.43		ug/L	10.00		94	70-130	0.1	25	
1,1-Dichloroethene	9.86		ug/L	10.00		99	70-130	0.1	25	
1,1-Dichloropropene	9.26		ug/L	10.00		93	70-130	1	25	
1,2,3-Trichlorobenzene	8.96		ug/L	10.00		90	70-130	4	25	
1,2,3-Trichloropropane	8.03		ug/L	10.00		80	70-130	6	25	
1,2,4-Trichlorobenzene	8.95		ug/L	10.00		90	70-130	5	25	
1,2,4-Trimethylbenzene	9.38		ug/L	10.00		94	70-130	0.3	25	
1,2-Dibromo-3-Chloropropane	8.71		ug/L	10.00		87	70-130	5	25	
1,2-Dibromoethane	8.86		ug/L	10.00		89	70-130	3	25	
1,2-Dichlorobenzene	8.87		ug/L	10.00		89	70-130	3	25	
1,2-Dichloroethane	9.19		ug/L	10.00		92	70-130	3	25	
1,2-Dichloropropane	9.24		ug/L	10.00		92	70-130	1	25	
1,3,5-Trimethylbenzene	9.06		ug/L	10.00		91	70-130	4	25	
1,3-Dichlorobenzene	9.02		ug/L	10.00		90	70-130	1	25	
1,3-Dichloropropane	9.39		ug/L	10.00		94	70-130	2	25	
1,4-Dichlorobenzene	9.08		ug/L	10.00		91	70-130	4	25	
1,4-Dioxane - Screen	216		ug/L	200.0		108	0-332	5	200	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

1-Chlorohexane	9.26		ug/L	10.00		93	70-130	1	25	
2,2-Dichloropropane	9.14		ug/L	10.00		91	70-130	1	25	
2-Butanone	47.9		ug/L	50.00		96	70-130	2	25	
2-Chlorotoluene	8.95		ug/L	10.00		90	70-130	3	25	
2-Hexanone	46.8		ug/L	50.00		94	70-130	3	25	
4-Chlorotoluene	9.01		ug/L	10.00		90	70-130	3	25	
4-Isopropyltoluene	9.03		ug/L	10.00		90	70-130	3	25	
4-Methyl-2-Pentanone	45.9		ug/L	50.00		92	70-130	3	25	
Acetone	46.7		ug/L	50.00		93	70-130	3	25	
Benzene	9.06		ug/L	10.00		91	70-130	2	25	
Bromobenzene	9.17		ug/L	10.00		92	70-130	2	25	
Bromochloromethane	8.74		ug/L	10.00		87	70-130	0.3	25	
Bromodichloromethane	9.29		ug/L	10.00		93	70-130	1	25	
Bromoform	8.33		ug/L	10.00		83	70-130	4	25	
Bromomethane	7.95		ug/L	10.00		80	70-130	2	25	
Carbon Disulfide	8.57		ug/L	10.00		86	70-130	2	25	
Carbon Tetrachloride	8.92		ug/L	10.00		89	70-130	0.3	25	
Chlorobenzene	9.03		ug/L	10.00		90	70-130	0.9	25	
Chloroethane	7.99		ug/L	10.00		80	70-130	1	25	
Chloroform	9.32		ug/L	10.00		93	70-130	3	25	
Chloromethane	8.01		ug/L	10.00		80	70-130	3	25	
cis-1,2-Dichloroethene	9.32		ug/L	10.00		93	70-130	2	25	
cis-1,3-Dichloropropene	8.94		ug/L	10.00		89	70-130	2	25	
Dibromochloromethane	8.61		ug/L	10.00		86	70-130	2	25	
Dibromomethane	9.14		ug/L	10.00		91	70-130	4	25	
Dichlorodifluoromethane	7.04		ug/L	10.00		70	70-130	5	25	
Diethyl Ether	8.29		ug/L	10.00		83	70-130	4	25	
Di-isopropyl ether	9.59		ug/L	10.00		96	70-130	2	25	
Ethyl tertiary-butyl ether	8.91		ug/L	10.00		89	70-130	2	25	
Ethylbenzene	9.18		ug/L	10.00		92	70-130	2	25	
Hexachlorobutadiene	9.12		ug/L	10.00		91	70-130	7	25	
Hexachloroethane	7.71		ug/L	10.00		77	70-130	2	25	
Isopropylbenzene	8.86		ug/L	10.00		89	70-130	5	25	
Methyl tert-Butyl Ether	8.80		ug/L	10.00		88	70-130	1	25	
Methylene Chloride	9.20		ug/L	10.00		92	70-130	0.4	25	
Naphthalene	8.46		ug/L	10.00		85	70-130	5	25	
n-Butylbenzene	9.05		ug/L	10.00		90	70-130	4	25	
n-Propylbenzene	9.08		ug/L	10.00		91	70-130	2	25	
sec-Butylbenzene	8.92		ug/L	10.00		89	70-130	4	25	
Styrene	8.89		ug/L	10.00		89	70-130	2	25	
tert-Butylbenzene	8.94		ug/L	10.00		89	70-130	2	25	
Tertiary-amyl methyl ether	9.32		ug/L	10.00		93	70-130	2	25	
Tetrachloroethene	7.61		ug/L	10.00		76	70-130	0.7	25	
Tetrahydrofuran	8.24		ug/L	10.00		82	70-130	5	25	
Toluene	9.11		ug/L	10.00		91	70-130	0.7	25	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

trans-1,2-Dichloroethene	9.51		ug/L	10.00		95	70-130	2	25	
trans-1,3-Dichloropropene	8.72		ug/L	10.00		87	70-130	3	25	
Trichloroethene	8.99		ug/L	10.00		90	70-130	0.3	25	
Trichlorofluoromethane	9.25		ug/L	10.00		92	70-130	2	25	
Vinyl Acetate	10.4		ug/L	10.00		104	70-130	4	25	
Vinyl Chloride	8.56		ug/L	10.00		86	70-130	2	25	
Xylene O	9.00		ug/L	10.00		90	70-130	2	25	
Xylene P,M	18.2		ug/L	20.00		91	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	0.0249		mg/L	0.02500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0247		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0249		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0247		mg/L	0.02500		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

Notes and Definitions

- U Analyte included in the analysis, but not detected
- 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
- F/V Final 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
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report
- RL Reporting Limit
- EDL Estimated Detection Limit
- MF Membrane Filtration
- MPN Most Probably Number
- TNTC Too numerous to Count
- CFU Colony Forming Units



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0209

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

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: RI00002

<http://www.maine.gov/dhhs/meecd/environmental-health/dwp/partners/labCert.shtml>

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML

ESS Project ID: 19J0209
 Date Received: 10/7/2019
 Project Due Date: 10/15/2019
 Days for Project: 5 Day

Shipped/Delivered Via: ESS Courier

- 1. Air bill manifest present? No
- Air No.: NA
- 2. Were custody seals present? No
- 3. Is radiation count <100 CPM? Yes
- 4. Is a Cooler Present? Yes
 Temp: 0.4 Iced with: Ice
- 5. Was COC signed and dated by client? Yes

- 6. Does COC match bottles? Yes
- 7. Is COC complete and correct? Yes
- 8. Were samples received intact? Yes
- 9. Were labs informed about short holds & rushes? Yes / No / NA
- 10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes No
 ESS Sample IDs: _____
 Analysis: _____
 TAT: _____

12. Were VOAs received? Yes No
 a. Air bubbles in aqueous VOAs? Yes No
 b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
 a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
 b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes No
 a. Was there a need to contact the client? Yes No
 Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	395865	Yes	No	Yes	VOA Vial - HCl	HCl	
01	395866	Yes	No	Yes	VOA Vial - HCl	HCl	
01	395867	Yes	No	Yes	VOA Vial - HCl	HCl	
02	395862	Yes	No	Yes	VOA Vial - HCl	HCl	
02	395863	Yes	No	Yes	VOA Vial - HCl	HCl	
02	395864	Yes	No	Yes	VOA Vial - HCl	HCl	
03	395859	Yes	No	Yes	VOA Vial - HCl	HCl	
03	395860	Yes	No	Yes	VOA Vial - HCl	HCl	
03	395861	Yes	No	Yes	VOA Vial - HCl	HCl	

2nd Review

- Were all containers scanned into storage/lab? Initials RL
- Are barcode labels on correct containers? Yes / No
 - Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
 - Are all Hex Chrome stickers attached? Yes / No / NA
 - Are all QC stickers attached? Yes / No / NA
 - Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: [Signature] Date & Time: 10/7/19 1451

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML ESS Project ID: 19J0209
By: [Signature] Date & Time: 10/7/19 1615
Delivered By: [Signature] 10/7/19 1615

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CERTIFICATE OF ANALYSIS

Dan Boynes
Sage Environmental, inc.
172 Armistice Boulevard
Pawtucket, RI 02860

RE: Waites Wharf Newport (S2935)
ESS Laboratory Work Order Number: 19J0210

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.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:31 pm, Oct 15, 2019

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 TNI and relative state standards, 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.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

SAMPLE RECEIPT

The following samples were received on October 07, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0210-01	SE-101 MW	Ground Water	8260B
19J0210-02	SE-102 MW	Ground Water	8260B
19J0210-03	SE-103 MW	Ground Water	8260B



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[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](#)



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

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
- 8015C - 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
- MADEP 18-2.1 - VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / 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
- 5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
1-Chlorohexane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
2-Butanone	ND (0.0100)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
2-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
2-Hexanone	ND (0.0100)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
4-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Acetone	ND (0.0100)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Benzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Bromobenzene	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Bromodichloromethane	ND (0.0006)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Bromoform	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Bromomethane	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Carbon Disulfide	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Chlorobenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Chloroethane	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Chloroform	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Chloromethane	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Dibromochloromethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Dibromomethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Diethyl Ether	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Di-isopropyl ether	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Ethylbenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Hexachloroethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Isopropylbenzene	0.0047 (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Methylene Chloride	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Naphthalene	0.0018 (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
n-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
n-Propylbenzene	0.0028 (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
sec-Butylbenzene	0.0033 (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Styrene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
tert-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Tetrachloroethene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-101 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Toluene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Trichloroethene	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Vinyl Acetate	ND (0.0050)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Vinyl Chloride	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Xylene O	ND (0.0010)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Xylene P,M	ND (0.0020)		8260B		1	10/09/19 2:26	C9J0167	CJ90864
Xylenes (Total)	ND (0.00200)		8260B		1	10/09/19 2:26		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	98 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	97 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
1-Chlorohexane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
2-Butanone	ND (0.0100)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
2-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
2-Hexanone	ND (0.0100)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
4-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Acetone	ND (0.0100)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Benzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Bromobenzene	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-102 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Bromodichloromethane	ND (0.0006)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Bromoform	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Bromomethane	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Carbon Disulfide	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Chlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Chloroethane	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Chloroform	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Chloromethane	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Dibromochloromethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Dibromomethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Diethyl Ether	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Di-isopropyl ether	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Ethylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Hexachloroethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Isopropylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Methylene Chloride	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Naphthalene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
n-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
n-Propylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
sec-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Styrene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
tert-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Tetrachloroethene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport
 Client Sample ID: SE-102 MW
 Date Sampled: 10/04/19 00:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
 ESS Laboratory Sample ID: 19J0210-02
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Toluene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Trichloroethene	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Vinyl Acetate	ND (0.0050)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Vinyl Chloride	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Xylene O	ND (0.0010)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Xylene P,M	ND (0.0020)		8260B		1	10/09/19 1:08	C9J0167	CJ90864
Xylenes (Total)	ND (0.00200)		8260B		1	10/09/19 1:08		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	98 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	98 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
1-Chlorohexane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
2-Butanone	ND (0.0100)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
2-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
2-Hexanone	ND (0.0100)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
4-Chlorotoluene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Acetone	ND (0.0100)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Benzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Bromobenzene	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Bromodichloromethane	ND (0.0006)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Bromoform	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Bromomethane	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Carbon Disulfide	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Chlorobenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Chloroethane	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Chloroform	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Chloromethane	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Dibromochloromethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Dibromomethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Diethyl Ether	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Di-isopropyl ether	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Ethylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Hexachloroethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Isopropylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Methylene Chloride	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Naphthalene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
n-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
n-Propylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
sec-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Styrene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
tert-Butylbenzene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Tetrachloroethene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport
Client Sample ID: SE-103 MW
Date Sampled: 10/04/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0210
ESS Laboratory Sample ID: 19J0210-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Toluene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Trichloroethene	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Vinyl Acetate	ND (0.0050)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Vinyl Chloride	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Xylene O	ND (0.0010)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Xylene P,M	ND (0.0020)		8260B		1	10/09/19 1:34	C9J0167	CJ90864
Xylenes (Total)	ND (0.00200)		8260B		1	10/09/19 1:34		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>99 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0204		mg/L	0.02500		82	70-130			
Surrogate: 4-Bromofluorobenzene	0.0277		mg/L	0.02500		111	70-130			
Surrogate: Dibromofluoromethane	0.0222		mg/L	0.02500		89	70-130			
Surrogate: Toluene-d8	0.0282		mg/L	0.02500		113	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.98		ug/L	10.00		90	70-130			
1,1,1-Trichloroethane	9.36		ug/L	10.00		94	70-130			
1,1,2,2-Tetrachloroethane	9.34		ug/L	10.00		93	70-130			
1,1,2-Trichloroethane	9.26		ug/L	10.00		93	70-130			
1,1-Dichloroethane	9.44		ug/L	10.00		94	70-130			
1,1-Dichloroethene	9.87		ug/L	10.00		99	70-130			
1,1-Dichloropropene	9.36		ug/L	10.00		94	70-130			
1,2,3-Trichlorobenzene	9.35		ug/L	10.00		94	70-130			
1,2,3-Trichloropropane	8.51		ug/L	10.00		85	70-130			
1,2,4-Trichlorobenzene	9.37		ug/L	10.00		94	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
 Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

1,2,4-Trimethylbenzene	9.41		ug/L	10.00		94	70-130			
1,2-Dibromo-3-Chloropropane	9.15		ug/L	10.00		92	70-130			
1,2-Dibromoethane	9.14		ug/L	10.00		91	70-130			
1,2-Dichlorobenzene	9.13		ug/L	10.00		91	70-130			
1,2-Dichloroethane	9.43		ug/L	10.00		94	70-130			
1,2-Dichloropropane	9.35		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	9.39		ug/L	10.00		94	70-130			
1,3-Dichlorobenzene	9.14		ug/L	10.00		91	70-130			
1,3-Dichloropropane	9.59		ug/L	10.00		96	70-130			
1,4-Dichlorobenzene	9.49		ug/L	10.00		95	70-130			
1,4-Dioxane - Screen	228		ug/L	200.0		114	0-332			
1-Chlorohexane	9.16		ug/L	10.00		92	70-130			
2,2-Dichloropropane	9.26		ug/L	10.00		93	70-130			
2-Butanone	48.7		ug/L	50.00		97	70-130			
2-Chlorotoluene	9.24		ug/L	10.00		92	70-130			
2-Hexanone	48.0		ug/L	50.00		96	70-130			
4-Chlorotoluene	9.32		ug/L	10.00		93	70-130			
4-Isopropyltoluene	9.30		ug/L	10.00		93	70-130			
4-Methyl-2-Pentanone	47.5		ug/L	50.00		95	70-130			
Acetone	48.2		ug/L	50.00		96	70-130			
Benzene	9.27		ug/L	10.00		93	70-130			
Bromobenzene	9.35		ug/L	10.00		94	70-130			
Bromochloromethane	8.77		ug/L	10.00		88	70-130			
Bromodichloromethane	9.39		ug/L	10.00		94	70-130			
Bromoform	8.67		ug/L	10.00		87	70-130			
Bromomethane	8.14		ug/L	10.00		81	70-130			
Carbon Disulfide	8.76		ug/L	10.00		88	70-130			
Carbon Tetrachloride	8.95		ug/L	10.00		90	70-130			
Chlorobenzene	9.11		ug/L	10.00		91	70-130			
Chloroethane	7.90		ug/L	10.00		79	70-130			
Chloroform	9.58		ug/L	10.00		96	70-130			
Chloromethane	8.24		ug/L	10.00		82	70-130			
cis-1,2-Dichloroethene	9.47		ug/L	10.00		95	70-130			
cis-1,3-Dichloropropene	9.11		ug/L	10.00		91	70-130			
Dibromochloromethane	8.76		ug/L	10.00		88	70-130			
Dibromomethane	9.48		ug/L	10.00		95	70-130			
Dichlorodifluoromethane	7.39		ug/L	10.00		74	70-130			
Diethyl Ether	8.59		ug/L	10.00		86	70-130			
Di-isopropyl ether	9.83		ug/L	10.00		98	70-130			
Ethyl tertiary-butyl ether	9.11		ug/L	10.00		91	70-130			
Ethylbenzene	9.35		ug/L	10.00		94	70-130			
Hexachlorobutadiene	9.75		ug/L	10.00		98	70-130			
Hexachloroethane	7.89		ug/L	10.00		79	70-130			
Isopropylbenzene	9.28		ug/L	10.00		93	70-130			
Methyl tert-Butyl Ether	8.89		ug/L	10.00		89	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

Methylene Chloride	9.24		ug/L	10.00		92	70-130			
Naphthalene	8.91		ug/L	10.00		89	70-130			
n-Butylbenzene	9.45		ug/L	10.00		94	70-130			
n-Propylbenzene	9.28		ug/L	10.00		93	70-130			
sec-Butylbenzene	9.24		ug/L	10.00		92	70-130			
Styrene	9.04		ug/L	10.00		90	70-130			
tert-Butylbenzene	9.09		ug/L	10.00		91	70-130			
Tertiary-amyl methyl ether	9.53		ug/L	10.00		95	70-130			
Tetrachloroethene	7.66		ug/L	10.00		77	70-130			
Tetrahydrofuran	8.70		ug/L	10.00		87	70-130			
Toluene	9.17		ug/L	10.00		92	70-130			
trans-1,2-Dichloroethene	9.68		ug/L	10.00		97	70-130			
trans-1,3-Dichloropropene	9.02		ug/L	10.00		90	70-130			
Trichloroethene	9.02		ug/L	10.00		90	70-130			
Trichlorofluoromethane	9.40		ug/L	10.00		94	70-130			
Vinyl Acetate	10.7		ug/L	10.00		107	70-130			
Vinyl Chloride	8.71		ug/L	10.00		87	70-130			
Xylene O	9.14		ug/L	10.00		91	70-130			
Xylene P,M	18.5		ug/L	20.00		93	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0251		mg/L	0.02500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0248		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0249		mg/L	0.02500		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.86		ug/L	10.00		89	70-130	1	25	
1,1,1-Trichloroethane	9.25		ug/L	10.00		92	70-130	1	25	
1,1,2,2-Tetrachloroethane	8.96		ug/L	10.00		90	70-130	4	25	
1,1,2-Trichloroethane	9.16		ug/L	10.00		92	70-130	1	25	
1,1-Dichloroethane	9.43		ug/L	10.00		94	70-130	0.1	25	
1,1-Dichloroethene	9.86		ug/L	10.00		99	70-130	0.1	25	
1,1-Dichloropropene	9.26		ug/L	10.00		93	70-130	1	25	
1,2,3-Trichlorobenzene	8.96		ug/L	10.00		90	70-130	4	25	
1,2,3-Trichloropropane	8.03		ug/L	10.00		80	70-130	6	25	
1,2,4-Trichlorobenzene	8.95		ug/L	10.00		90	70-130	5	25	
1,2,4-Trimethylbenzene	9.38		ug/L	10.00		94	70-130	0.3	25	
1,2-Dibromo-3-Chloropropane	8.71		ug/L	10.00		87	70-130	5	25	
1,2-Dibromoethane	8.86		ug/L	10.00		89	70-130	3	25	
1,2-Dichlorobenzene	8.87		ug/L	10.00		89	70-130	3	25	
1,2-Dichloroethane	9.19		ug/L	10.00		92	70-130	3	25	
1,2-Dichloropropane	9.24		ug/L	10.00		92	70-130	1	25	
1,3,5-Trimethylbenzene	9.06		ug/L	10.00		91	70-130	4	25	
1,3-Dichlorobenzene	9.02		ug/L	10.00		90	70-130	1	25	
1,3-Dichloropropane	9.39		ug/L	10.00		94	70-130	2	25	
1,4-Dichlorobenzene	9.08		ug/L	10.00		91	70-130	4	25	
1,4-Dioxane - Screen	216		ug/L	200.0		108	0-332	5	200	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

1-Chlorohexane	9.26		ug/L	10.00		93	70-130	1	25	
2,2-Dichloropropane	9.14		ug/L	10.00		91	70-130	1	25	
2-Butanone	47.9		ug/L	50.00		96	70-130	2	25	
2-Chlorotoluene	8.95		ug/L	10.00		90	70-130	3	25	
2-Hexanone	46.8		ug/L	50.00		94	70-130	3	25	
4-Chlorotoluene	9.01		ug/L	10.00		90	70-130	3	25	
4-Isopropyltoluene	9.03		ug/L	10.00		90	70-130	3	25	
4-Methyl-2-Pentanone	45.9		ug/L	50.00		92	70-130	3	25	
Acetone	46.7		ug/L	50.00		93	70-130	3	25	
Benzene	9.06		ug/L	10.00		91	70-130	2	25	
Bromobenzene	9.17		ug/L	10.00		92	70-130	2	25	
Bromochloromethane	8.74		ug/L	10.00		87	70-130	0.3	25	
Bromodichloromethane	9.29		ug/L	10.00		93	70-130	1	25	
Bromoform	8.33		ug/L	10.00		83	70-130	4	25	
Bromomethane	7.95		ug/L	10.00		80	70-130	2	25	
Carbon Disulfide	8.57		ug/L	10.00		86	70-130	2	25	
Carbon Tetrachloride	8.92		ug/L	10.00		89	70-130	0.3	25	
Chlorobenzene	9.03		ug/L	10.00		90	70-130	0.9	25	
Chloroethane	7.99		ug/L	10.00		80	70-130	1	25	
Chloroform	9.32		ug/L	10.00		93	70-130	3	25	
Chloromethane	8.01		ug/L	10.00		80	70-130	3	25	
cis-1,2-Dichloroethene	9.32		ug/L	10.00		93	70-130	2	25	
cis-1,3-Dichloropropene	8.94		ug/L	10.00		89	70-130	2	25	
Dibromochloromethane	8.61		ug/L	10.00		86	70-130	2	25	
Dibromomethane	9.14		ug/L	10.00		91	70-130	4	25	
Dichlorodifluoromethane	7.04		ug/L	10.00		70	70-130	5	25	
Diethyl Ether	8.29		ug/L	10.00		83	70-130	4	25	
Di-isopropyl ether	9.59		ug/L	10.00		96	70-130	2	25	
Ethyl tertiary-butyl ether	8.91		ug/L	10.00		89	70-130	2	25	
Ethylbenzene	9.18		ug/L	10.00		92	70-130	2	25	
Hexachlorobutadiene	9.12		ug/L	10.00		91	70-130	7	25	
Hexachloroethane	7.71		ug/L	10.00		77	70-130	2	25	
Isopropylbenzene	8.86		ug/L	10.00		89	70-130	5	25	
Methyl tert-Butyl Ether	8.80		ug/L	10.00		88	70-130	1	25	
Methylene Chloride	9.20		ug/L	10.00		92	70-130	0.4	25	
Naphthalene	8.46		ug/L	10.00		85	70-130	5	25	
n-Butylbenzene	9.05		ug/L	10.00		90	70-130	4	25	
n-Propylbenzene	9.08		ug/L	10.00		91	70-130	2	25	
sec-Butylbenzene	8.92		ug/L	10.00		89	70-130	4	25	
Styrene	8.89		ug/L	10.00		89	70-130	2	25	
tert-Butylbenzene	8.94		ug/L	10.00		89	70-130	2	25	
Tertiary-amyl methyl ether	9.32		ug/L	10.00		93	70-130	2	25	
Tetrachloroethene	7.61		ug/L	10.00		76	70-130	0.7	25	
Tetrahydrofuran	8.24		ug/L	10.00		82	70-130	5	25	
Toluene	9.11		ug/L	10.00		91	70-130	0.7	25	



CERTIFICATE OF ANALYSIS

Client Name: Sage Environmental, inc.
Client Project ID: Waites Wharf Newport

ESS Laboratory Work Order: 19J0210

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CJ90864 - 5030B

trans-1,2-Dichloroethene	9.51		ug/L	10.00		95	70-130	2	25	
trans-1,3-Dichloropropene	8.72		ug/L	10.00		87	70-130	3	25	
Trichloroethene	8.99		ug/L	10.00		90	70-130	0.3	25	
Trichlorofluoromethane	9.25		ug/L	10.00		92	70-130	2	25	
Vinyl Acetate	10.4		ug/L	10.00		104	70-130	4	25	
Vinyl Chloride	8.56		ug/L	10.00		86	70-130	2	25	
Xylene O	9.00		ug/L	10.00		90	70-130	2	25	
Xylene P,M	18.2		ug/L	20.00		91	70-130	2	25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0249</i>		mg/L	<i>0.02500</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0247</i>		mg/L	<i>0.02500</i>		<i>99</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0249</i>		mg/L	<i>0.02500</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0247</i>		mg/L	<i>0.02500</i>		<i>99</i>	<i>70-130</i>			



CERTIFICATE OF ANALYSIS

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Notes and Definitions

- U Analyte included in the analysis, but not detected
- 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
- F/V Final 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
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report
- RL Reporting Limit
- EDL Estimated Detection Limit
- MF Membrane Filtration
- MPN Most Probably Number
- TNTC Too numerous to Count
- CFU Colony Forming Units



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 19J0210

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

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: RI00002

<http://www.maine.gov/dhhs/meecd/environmental-health/dwp/partners/labCert.shtml>

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML

ESS Project ID: 19J0210
 Date Received: 10/7/2019
 Project Due Date: 10/15/2019
 Days for Project: 5 Day

Shipped/Delivered Via: ESS Courier

- 1. Air bill manifest present? No
- Air No.: NA
- 2. Were custody seals present? No
- 3. Is radiation count <100 CPM? Yes
- 4. Is a Cooler Present? Yes
 Temp: 0.4 Iced with: Ice
- 5. Was COC signed and dated by client? Yes

- 6. Does COC match bottles? Yes
- 7. Is COC complete and correct? Yes
- 8. Were samples received intact? Yes
- 9. Were labs informed about short holds & rushes? Yes / No / NA
- 10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes No
 ESS Sample IDs: _____
 Analysis: _____
 TAT: _____

12. Were VOAs received? Yes / No
 a. Air bubbles in aqueous VOAs? Yes / No
 b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
 a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
 b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
 a. Was there a need to contact the client? Yes / No
 Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	395874	Yes	No	Yes	VOA Vial - HCl	HCl	
01	395875	Yes	No	Yes	VOA Vial - HCl	HCl	
01	395876	Yes	No	Yes	VOA Vial - HCl	HCl	
02	395871	Yes	No	Yes	VOA Vial - HCl	HCl	
02	395872	Yes	No	Yes	VOA Vial - HCl	HCl	
02	395873	Yes	No	Yes	VOA Vial - HCl	HCl	
03	395868	Yes	No	Yes	VOA Vial - HCl	HCl	
03	395869	Yes	No	Yes	VOA Vial - HCl	HCl	
03	395870	Yes	No	Yes	VOA Vial - HCl	HCl	

2nd Review

- Were all containers scanned into storage/lab? Initials LC
- Are barcode labels on correct containers? Yes / No
- Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
- Are all Hex Chrome stickers attached? Yes / No / NA
- Are all QC stickers attached? Yes / No / NA
- Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: [Signature] Date & Time: 10/7/19 1:57

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Sage Environmental, Inc. - ML/ML ESS Project ID: 19J0210
By: [Signature] Date Received: 10/7/2019
Delivered Date & Time: 10/7/19 1616
By: [Signature] 10/7/19 1616

