

Textron, Inc.
Former Gorham Manufacturing Facility, Providence, RI
Remedial Action Completion Report: Phase II Area – Mashapaug Inner Cove,
Phase III Area – Northeast Upland And Parcel C
Project No.: 3652160001
February 12, 2016



APPENDIX H
IMPORTED SOIL ANALYTICAL RESULTS
(Provided on CD)



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1507354

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 8:32 am, Jul 28, 2015

Analytical Summary

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

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



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SAMPLE RECEIPT

The following samples were received on July 15, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on July 15, 2015 at 16:14.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1507354-02	L3 G.Lopes - 10% Organic	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



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PROJECT NARRATIVE

8270D Semi-Volatile Organic Compounds

- CYG0164-CCV1 [Calibration required quadratic regression \(Q\).](#)
N-Nitrosodimethylamine (64% @ 80-120%)
- CYG0164-CCV1 [Continuing Calibration recovery is below lower control limit \(C-\).](#)
Hexachlorocyclopentadiene (78% @ 80-120%), N-Nitrosodimethylamine (64% @ 80-120%)
- CYG0164-CCV1 [Initial Calibration Verification recovery is below lower control limit \(ICV-\).](#)
2-Nitroaniline , 3,3'-Dichlorobenzidine , 4-Chloroaniline , Hexachlorocyclopentadiene ,
N-Nitrosodimethylamine , Pyridine
- CYG0175-CCV1 [Calibration required quadratic regression \(Q\).](#)
N-Nitrosodimethylamine (71% @ 80-120%)
- CYG0175-CCV1 [Continuing Calibration recovery is above upper control limit \(C+\).](#)
2,4,6-Tribromophenol (124% @ 80-120%), 3,3'-Dichlorobenzidine (122% @ 80-120%), Fluoranthene
(123% @ 80-120%)
- CYG0175-CCV1 [Continuing Calibration recovery is below lower control limit \(C-\).](#)
Hexachlorocyclopentadiene (68% @ 80-120%), N-Nitrosodimethylamine (71% @ 80-120%)
- CYG0175-CCV1 [Initial Calibration Verification recovery is below lower control limit \(ICV-\).](#)
2-Nitroaniline , 3,3'-Dichlorobenzidine , 4-Chloroaniline , Hexachlorocyclopentadiene ,
N-Nitrosodimethylamine , Pyridine
- CYG0176-CCV1 [Continuing Calibration recovery is above upper control limit \(C+\).](#)
Aniline (122% @ 80-120%), bis(2-Ethylhexyl)phthalate (133% @ 80-120%), Butylbenzylphthalate (129%
@ 80-120%), Di-n-octylphthalate (156% @ 80-120%), Hexachlorocyclopentadiene (128% @ 80-120%)
- CYG0176-CCV1 [Initial Calibration Verification recovery is below lower control limit \(ICV-\).](#)
Hexachlorocyclopentadiene

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

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CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L3 G.Lopes - 10% Organic
Date Sampled: 07/15/15 15:25
Percent Solids: 76

ESS Laboratory Work Order: 1507354
ESS Laboratory Sample ID: 1507354-02
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	ND (2.81)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603
Barium	18.5 (2.81)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603
Cadmium	ND (0.56)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603
Chromium	4.40 (1.12)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603
Lead	14.7 (5.61)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603
Mercury	ND (0.042)		7471B		1	BJV	07/17/15 12:28	0.63	40	CG51605
Selenium	ND (5.61)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603
Silver	ND (0.56)		6010C		1	KJK	07/16/15 16:05	2.36	100	CG51603



CERTIFICATE OF ANALYSIS

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 Client Sample ID: L3 G.Lopes - 10% Organic
 Date Sampled: 07/15/15 15:25
 Percent Solids: 76
 Initial Volume: 4.1
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1507354
 ESS Laboratory Sample ID: 1507354-02
 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 (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,1,1-Trichloroethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,1,2,2-Tetrachloroethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,1,2-Trichloroethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,1-Dichloroethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,1-Dichloroethene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,1-Dichloropropene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2,3-Trichlorobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2,3-Trichloropropane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2,4-Trichlorobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2,4-Trimethylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2-Dibromo-3-Chloropropane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2-Dibromoethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2-Dichlorobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2-Dichloroethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,2-Dichloropropane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,3,5-Trimethylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,3-Dichlorobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,3-Dichloropropane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,4-Dichlorobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1,4-Dioxane	ND (0.162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
1-Chlorohexane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
2,2-Dichloropropane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
2-Butanone	ND (0.0808)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
2-Chlorotoluene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
2-Hexanone	ND (0.0808)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
4-Chlorotoluene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
4-Isopropyltoluene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
4-Methyl-2-Pentanone	ND (0.0808)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Acetone	ND (0.0808)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Benzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Bromobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642



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 Date Sampled: 07/15/15 15:25
 Percent Solids: 76
 Initial Volume: 4.1
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1507354
 ESS Laboratory Sample ID: 1507354-02
 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 (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Bromodichloromethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Bromoform	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Bromomethane	ND (0.0162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Carbon Disulfide	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Carbon Tetrachloride	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Chlorobenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Chloroethane	ND (0.0162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Chloroform	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Chloromethane	ND (0.0162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
cis-1,2-Dichloroethene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
cis-1,3-Dichloropropene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Dibromochloromethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Dibromomethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Dichlorodifluoromethane	ND (0.0162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Diethyl Ether	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Di-isopropyl ether	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Ethyl tertiary-butyl ether	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Ethylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Hexachlorobutadiene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Isopropylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Methyl tert-Butyl Ether	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Methylene Chloride	ND (0.0404)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Naphthalene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
n-Butylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
n-Propylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
sec-Butylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Styrene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
tert-Butylbenzene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Tertiary-amyl methyl ether	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Tetrachloroethene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Tetrahydrofuran	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642



CERTIFICATE OF ANALYSIS

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Client Sample ID: L3 G.Lopes - 10% Organic
Date Sampled: 07/15/15 15:25
Percent Solids: 76
Initial Volume: 4.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1507354
ESS Laboratory Sample ID: 1507354-02
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 (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
trans-1,2-Dichloroethene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
trans-1,3-Dichloropropene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Trichloroethene	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Trichlorofluoromethane	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Vinyl Acetate	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Vinyl Chloride	ND (0.0162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Xylene O	ND (0.0081)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Xylene P,M	ND (0.0162)		8260B Low		1	07/16/15 21:46	CYG0186	CG51642
Xylenes (Total)	ND (0.0162)		8260B Low		1	07/16/15 21:46		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>86 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>74 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>82 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L3 G.Lopes - 10% Organic
Date Sampled: 07/15/15 15:25
Percent Solids: 76
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1507354
ESS Laboratory Sample ID: 1507354-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 7/16/15 11:56

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	295 (51.5)		8100M		1	07/16/15 22:44	CYG0207	CG51510
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		94 %		40-140				



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Client Sample ID: L3 G.Lopes - 10% Organic
Date Sampled: 07/15/15 15:25
Percent Solids: 76
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1507354
ESS Laboratory Sample ID: 1507354-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 7/16/15 11:56

8270D Semi-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-Biphenyl	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
1,2,4-Trichlorobenzene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
1,2-Dichlorobenzene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
1,3-Dichlorobenzene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
1,4-Dichlorobenzene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,3,4,6-Tetrachlorophenol	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,4,5-Trichlorophenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,4,6-Trichlorophenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,4-Dichlorophenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,4-Dimethylphenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,4-Dinitrophenol	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,4-Dinitrotoluene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2,6-Dinitrotoluene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2-Chloronaphthalene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2-Chlorophenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2-Methylnaphthalene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2-Methylphenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2-Nitroaniline	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
2-Nitrophenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
3,3'-Dichlorobenzidine	ND (0.878)		8270D		1	07/16/15 19:31	CYG0175	CG51511
3+4-Methylphenol	ND (0.878)		8270D		1	07/16/15 19:31	CYG0175	CG51511
3-Nitroaniline	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4,6-Dinitro-2-Methylphenol	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4-Bromophenyl-phenylether	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4-Chloro-3-Methylphenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4-Chloroaniline	ND (0.878)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4-Chloro-phenyl-phenyl ether	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4-Nitroaniline	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
4-Nitrophenol	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Acenaphthene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Acenaphthylene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Acetophenone	ND (0.878)		8270D		1	07/16/15 19:31	CYG0175	CG51511



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L3 G.Lopes - 10% Organic
Date Sampled: 07/15/15 15:25
Percent Solids: 76
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1507354
ESS Laboratory Sample ID: 1507354-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 7/16/15 11:56

8270D Semi-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>
Aniline	ND (0.878)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Anthracene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Azobenzene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzo(a)anthracene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzo(a)pyrene	ND (0.220)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzo(b)fluoranthene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzo(g,h,i)perylene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzo(k)fluoranthene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzoic Acid	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Benzyl Alcohol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
bis(2-Chloroethoxy)methane	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
bis(2-Chloroethyl)ether	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
bis(2-chloroisopropyl)Ether	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
bis(2-Ethylhexyl)phthalate	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Butylbenzylphthalate	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Carbazole	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Chrysene	ND (0.220)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Dibenzo(a,h)Anthracene	ND (0.220)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Dibenzofuran	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Diethylphthalate	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Dimethylphthalate	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Di-n-butylphthalate	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Di-n-octylphthalate	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Fluoranthene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Fluorene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Hexachlorobenzene	ND (0.220)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Hexachlorobutadiene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Hexachlorocyclopentadiene	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Hexachloroethane	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Indeno(1,2,3-cd)Pyrene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Isophorone	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Naphthalene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: L3 G.Lopes - 10% Organic
 Date Sampled: 07/15/15 15:25
 Percent Solids: 76
 Initial Volume: 15.1
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1507354
 ESS Laboratory Sample ID: 1507354-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 7/16/15 11:56

8270D Semi-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>
Nitrobenzene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
N-Nitrosodimethylamine	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
N-Nitroso-Di-n-Propylamine	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
N-nitrosodiphenylamine	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Pentachlorophenol	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Phenanthrene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Phenol	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Pyrene	ND (0.438)		8270D		1	07/16/15 19:31	CYG0175	CG51511
Pyridine	ND (2.20)		8270D		1	07/16/15 19:31	CYG0175	CG51511

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	40 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	79 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	43 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	56 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	41 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	43 %		30-130
<i>Surrogate: Phenol-d6</i>	43 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	56 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L3 G.Lopes - 10% Organic
Date Sampled: 07/15/15 15:25
Percent Solids: 76

ESS Laboratory Work Order: 1507354
ESS Laboratory Sample ID: 1507354-02
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.71 (N/A)		9045		1	MJV	07/15/15 17:09	S.U.	CG51517
Corrosivity (pH) Sample Temp	Soil pH measured in water at 24.9 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

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 CG51603 - 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	107	9.43	mg/kg wet	133.0	80	70-130
Barium	174	9.43	mg/kg wet	229.0	76	73-126
Cadmium	90.2	1.89	mg/kg wet	123.0	73	73-127
Chromium	47.6	3.77	mg/kg wet	63.20	75	68-132
Lead	85.9	18.9	mg/kg wet	108.0	80	72-129
Selenium	57.1	18.9	mg/kg wet	81.40	70	64-136
Silver	62.0	1.89	mg/kg wet	74.80	83	80-120

LCS Dup

Arsenic	105	9.26	mg/kg wet	133.0	79	70-130	1	20
Barium	171	9.26	mg/kg wet	229.0	75	73-126	2	20
Cadmium	90.5	1.85	mg/kg wet	123.0	74	73-127	0.3	20
Chromium	47.8	3.70	mg/kg wet	63.20	76	68-132	0.4	20
Lead	84.5	18.5	mg/kg wet	108.0	78	72-129	2	20
Selenium	58.6	18.5	mg/kg wet	81.40	72	64-136	3	20
Silver	62.1	1.85	mg/kg wet	74.80	83	80-120	0.08	20

Batch CG51605 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	22.5	3.60	mg/kg wet	24.90	90	80-120
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LCS Dup

Mercury	22.8	3.88	mg/kg wet	24.90	92	80-120	1	20
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Reference

Mercury	0.859	0.183	mg/kg wet	1.000	86	70-130
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5035/8260B Volatile Organic Compounds / Low Level

Batch CG51642 - 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

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 CG51642 - 5035

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							
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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

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 CG51642 - 5035

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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0455		mg/kg wet	0.05000		91	70-130			
Surrogate: 4-Bromofluorobenzene	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Dibromofluoromethane	0.0437		mg/kg wet	0.05000		87	70-130			
Surrogate: Toluene-d8	0.0449		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,1-Trichloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2-Trichloroethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichlorobenzene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
1,2,3-Trichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,4-Trichlorobenzene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
1,2,4-Trimethylbenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130			
1,2-Dibromoethane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130			
1,2-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dichloroethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dichloropropane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,3,5-Trimethylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

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 CG51642 - 5035

1,3-Dichlorobenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichloropropane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
1,4-Dichlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,4-Dioxane	1.05	0.100	mg/kg wet	1.000		105	70-130			
1-Chlorohexane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
2,2-Dichloropropane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
2-Butanone	0.239	0.0500	mg/kg wet	0.2500		96	70-130			
2-Chlorotoluene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
2-Hexanone	0.230	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
4-Isopropyltoluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.223	0.0500	mg/kg wet	0.2500		89	70-130			
Acetone	0.267	0.0500	mg/kg wet	0.2500		107	70-130			
Benzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Bromobenzene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
Bromochloromethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
Bromodichloromethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Bromoform	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Bromomethane	0.0585	0.0100	mg/kg wet	0.05000		117	70-130			
Carbon Disulfide	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Chlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Chloroethane	0.0469	0.0100	mg/kg wet	0.05000		94	70-130			
Chloroform	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Chloromethane	0.0403	0.0100	mg/kg wet	0.05000		81	70-130			
cis-1,2-Dichloroethene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
cis-1,3-Dichloropropene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Dibromochloromethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Dibromomethane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Dichlorodifluoromethane	0.0427	0.0100	mg/kg wet	0.05000		85	70-130			
Diethyl Ether	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
Di-isopropyl ether	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Ethyl tertiary-butyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Hexachlorobutadiene	0.0581	0.0050	mg/kg wet	0.05000		116	70-130			
Isopropylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
Methyl tert-Butyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Methylene Chloride	0.0492	0.0250	mg/kg wet	0.05000		98	70-130			
Naphthalene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
n-Butylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
sec-Butylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
Styrene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
tert-Butylbenzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

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 CG51642 - 5035

Tetrachloroethene	0.0578	0.0050	mg/kg wet	0.05000		116	70-130			
Tetrahydrofuran	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Toluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Trichloroethene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Trichlorofluoromethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Vinyl Acetate	0.0629	0.0050	mg/kg wet	0.05000		126	70-130			
Vinyl Chloride	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
Xylene O	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Xylene P,M	0.108	0.0100	mg/kg wet	0.1000		108	70-130			
Xylenes (Total)	0.164	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0522		mg/kg wet	0.05000		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.0535		mg/kg wet	0.05000		107	70-130			
Surrogate: Dibromofluoromethane	0.0516		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0517		mg/kg wet	0.05000		103	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
1,1,1-Trichloroethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
1,1,2,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
1,1,2-Trichloroethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,1-Dichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	0.6	25	
1,1-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
1,1-Dichloropropene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,3-Trichlorobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	9	25	
1,2,3-Trichloropropane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
1,2,4-Trichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
1,2,4-Trimethylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130	3	25	
1,2-Dibromoethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	6	25	
1,2-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	7	25	
1,2-Dichloroethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	0.7	25	
1,2-Dichloropropane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	1	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
1,3-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	3	25	
1,4-Dichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,4-Dioxane	1.07	0.100	mg/kg wet	1.000		107	70-130	1	20	
1-Chlorohexane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
2,2-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
2-Butanone	0.241	0.0500	mg/kg wet	0.2500		96	70-130	0.8	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
2-Hexanone	0.232	0.0500	mg/kg wet	0.2500		93	70-130	0.6	25	
4-Chlorotoluene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
4-Isopropyltoluene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	6	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CG51642 - 5035

4-Methyl-2-Pentanone	0.226	0.0500	mg/kg wet	0.2500		90	70-130	1	25	
Acetone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	3	25	
Benzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Bromobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
Bromochloromethane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	4	25	
Bromodichloromethane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	1	25	
Bromoform	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
Bromomethane	0.0615	0.0100	mg/kg wet	0.05000		123	70-130	5	25	
Carbon Disulfide	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Carbon Tetrachloride	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
Chlorobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
Chloroethane	0.0473	0.0100	mg/kg wet	0.05000		95	70-130	0.8	25	
Chloroform	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
Chloromethane	0.0396	0.0100	mg/kg wet	0.05000		79	70-130	2	25	
cis-1,2-Dichloroethene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
cis-1,3-Dichloropropene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	1	25	
Dibromochloromethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Dibromomethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	3	25	
Dichlorodifluoromethane	0.0411	0.0100	mg/kg wet	0.05000		82	70-130	4	25	
Diethyl Ether	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
Di-isopropyl ether	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	0.3	25	
Ethyl tertiary-butyl ether	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
Hexachlorobutadiene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Isopropylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Methyl tert-Butyl Ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	0.5	25	
Methylene Chloride	0.0479	0.0250	mg/kg wet	0.05000		96	70-130	3	25	
Naphthalene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
n-Butylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
n-Propylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
sec-Butylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Styrene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
tert-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
Tertiary-amyl methyl ether	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Tetrachloroethene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Tetrahydrofuran	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	2	25	
Toluene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
trans-1,2-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	4	25	
trans-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
Trichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
Trichlorofluoromethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
Vinyl Acetate	0.0627	0.0050	mg/kg wet	0.05000		125	70-130	0.3	25	
Vinyl Chloride	0.0464	0.0100	mg/kg wet	0.05000		93	70-130	2	25	
Xylene O	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	5	25	
Xylene P,M	0.102	0.0100	mg/kg wet	0.1000		102	70-130	6	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 / Low Level

Batch CG51642 - [CALC]

Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0558		mg/kg wet	0.05000		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0531		mg/kg wet	0.05000		106	70-130			
Surrogate: Dibromofluoromethane	0.0531		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0517		mg/kg wet	0.05000		103	70-130			

8100M Total Petroleum Hydrocarbons

Batch CG51510 - 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	5.01		mg/kg wet	5.000		100	40-140			
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LCS

Decane (C10)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		112	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		112	40-140			
Hexacosane (C26)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Nonane (C9)	2.2	0.2	mg/kg wet	2.500		88	30-140			
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		106	40-140			
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Total Petroleum Hydrocarbons	38.0	37.5	mg/kg wet	35.00		109	40-140			
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140			

Surrogate: O-Terphenyl	5.31		mg/kg wet	5.000		106	40-140			
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LCS Dup

Decane (C10)	2.5	0.2	mg/kg wet	2.500		101	40-140	2	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		113	40-140	0.7	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CG51510 - 3546

Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		107	40-140	0.2	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		113	40-140	1	25	
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		115	40-140	1	25	
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		112	40-140	2	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	1	25	
Nonane (C9)	2.2	0.2	mg/kg wet	2.500		87	30-140	2	25	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		112	40-140	1	25	
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		112	40-140	1	25	
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		107	40-140	1	25	
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		110	40-140	2	25	
Total Petroleum Hydrocarbons	37.7	37.5	mg/kg wet	35.00		108	40-140	0.9	25	
Triacotane (C30)	2.8	0.2	mg/kg wet	2.500		112	40-140	1	25	

Surrogate: O-Terphenyl 5.26 mg/kg wet 5.000 105 40-140

8270D Semi-Volatile Organic Compounds

Batch CG51511 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							



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8270D Semi-Volatile Organic Compounds

Batch CG51511 - 3546

4-Nitroaniline	ND	0.333	mg/kg wet
4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet



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8270D Semi-Volatile Organic Compounds

Batch CG51511 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.37		mg/kg wet	3.333		71	30-130			
Surrogate: 2,4,6-Tribromophenol	3.94		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.31		mg/kg wet	5.000		66	30-130			
Surrogate: 2-Fluorobiphenyl	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	3.31		mg/kg wet	5.000		66	30-130			
Surrogate: Nitrobenzene-d5	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: Phenol-d6	3.20		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.27		mg/kg wet	3.333		68	30-130			

LCS

1,1-Biphenyl	3.04	0.333	mg/kg wet	3.333		91	40-140			
1,2,4-Trichlorobenzene	3.11	0.333	mg/kg wet	3.333		93	40-140			
1,2-Dichlorobenzene	2.78	0.333	mg/kg wet	3.333		84	40-140			
1,3-Dichlorobenzene	2.85	0.333	mg/kg wet	3.333		85	40-140			
1,4-Dichlorobenzene	2.79	0.333	mg/kg wet	3.333		84	40-140			
2,3,4,6-Tetrachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130			
2,4,5-Trichlorophenol	3.35	0.333	mg/kg wet	3.333		101	30-130			
2,4,6-Trichlorophenol	3.28	0.333	mg/kg wet	3.333		98	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	3.12	0.333	mg/kg wet	3.333		94	30-130			
2,4-Dinitrophenol	2.71	1.67	mg/kg wet	3.333		81	30-130			
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140			
2,6-Dinitrotoluene	3.08	0.333	mg/kg wet	3.333		92	40-140			
2-Chloronaphthalene	2.92	0.333	mg/kg wet	3.333		87	40-140			
2-Chlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2-Methylnaphthalene	2.72	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
2-Nitroaniline	2.59	0.333	mg/kg wet	3.333		78	40-140			
2-Nitrophenol	3.32	0.333	mg/kg wet	3.333		99	30-130			
3,3'-Dichlorobenzidine	3.30	0.667	mg/kg wet	3.333		99	40-140			
3+4-Methylphenol	5.10	0.667	mg/kg wet	6.667		77	30-130			
3-Nitroaniline	3.09	0.333	mg/kg wet	3.333		93	40-140			
4,6-Dinitro-2-Methylphenol	3.36	1.67	mg/kg wet	3.333		101	30-130			
4-Bromophenyl-phenylether	3.25	0.333	mg/kg wet	3.333		97	40-140			
4-Chloro-3-Methylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.54	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	3.05	0.333	mg/kg wet	3.333		92	40-140			
4-Nitroaniline	3.15	0.333	mg/kg wet	3.333		95	40-140			
4-Nitrophenol	3.00	1.67	mg/kg wet	3.333		90	30-130			
Acenaphthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Acenaphthylene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Acetophenone	2.56	0.667	mg/kg wet	3.333		77	40-140			
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140			
Anthracene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Azobenzene	2.96	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CG51511 - 3546

Benzo(a)anthracene	3.13	0.333	mg/kg wet	3.333		94	40-140			
Benzo(a)pyrene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	3.23	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	3.26	0.333	mg/kg wet	3.333		98	40-140			
Benzoic Acid	2.69	1.67	mg/kg wet	3.333		81	40-140			
Benzyl Alcohol	2.57	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Chloroethoxy)methane	2.79	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	2.58	0.333	mg/kg wet	3.333		77	40-140			
bis(2-chloroisopropyl)Ether	2.70	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Ethylhexyl)phthalate	2.72	0.333	mg/kg wet	3.333		82	40-140			
Butylbenzylphthalate	2.73	0.333	mg/kg wet	3.333		82	40-140			
Carbazole	3.26	0.333	mg/kg wet	3.333		98	40-140			
Chrysene	3.20	0.167	mg/kg wet	3.333		96	40-140			
Dibenzo(a,h)Anthracene	3.25	0.167	mg/kg wet	3.333		98	40-140			
Dibenzofuran	3.05	0.333	mg/kg wet	3.333		92	40-140			
Diethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Dimethylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140			
Di-n-butylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	2.73	0.333	mg/kg wet	3.333		82	40-140			
Fluoranthene	3.54	0.333	mg/kg wet	3.333		106	40-140			
Fluorene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	3.17	0.167	mg/kg wet	3.333		95	40-140			
Hexachlorobutadiene	3.18	0.333	mg/kg wet	3.333		96	40-140			
Hexachlorocyclopentadiene	3.01	1.67	mg/kg wet	3.333		90	40-140			
Hexachloroethane	2.81	0.333	mg/kg wet	3.333		84	40-140			
Indeno(1,2,3-cd)Pyrene	3.26	0.333	mg/kg wet	3.333		98	40-140			
Isophorone	2.74	0.333	mg/kg wet	3.333		82	40-140			
Naphthalene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Nitrobenzene	2.97	0.333	mg/kg wet	3.333		89	40-140			
N-Nitrosodimethylamine	1.89	0.333	mg/kg wet	3.333		57	40-140			
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	3.12	0.333	mg/kg wet	3.333		94	40-140			
Pentachlorophenol	2.96	1.67	mg/kg wet	3.333		89	30-130			
Phenanthrene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Phenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
Pyrene	2.46	0.333	mg/kg wet	3.333		74	40-140			
Pyridine	2.05	1.67	mg/kg wet	3.333		61	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.69		mg/kg wet	3.333		81	30-130			
Surrogate: 2,4,6-Tribromophenol	5.05		mg/kg wet	5.000		101	30-130			
Surrogate: 2-Chlorophenol-d4	3.74		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Fluorobiphenyl	3.07		mg/kg wet	3.333		92	30-130			
Surrogate: 2-Fluorophenol	3.71		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.84		mg/kg wet	3.333		85	30-130			
Surrogate: Phenol-d6	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.29		mg/kg wet	3.333		69	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CG51511 - 3546

LCS Dup

1,1-Biphenyl	2.78	0.333	mg/kg wet	3.333		83	40-140	9	30	
1,2,4-Trichlorobenzene	2.81	0.333	mg/kg wet	3.333		84	40-140	10	30	
1,2-Dichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	10	30	
1,3-Dichlorobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140	9	30	
1,4-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	9	30	
2,3,4,6-Tetrachlorophenol	3.08	1.67	mg/kg wet	3.333		92	30-130	7	30	
2,4,5-Trichlorophenol	3.10	0.333	mg/kg wet	3.333		93	30-130	8	30	
2,4,6-Trichlorophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	7	30	
2,4-Dichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	7	30	
2,4-Dimethylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130	9	30	
2,4-Dinitrophenol	2.59	1.67	mg/kg wet	3.333		78	30-130	5	30	
2,4-Dinitrotoluene	2.95	0.333	mg/kg wet	3.333		89	40-140	8	30	
2,6-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
2-Chloronaphthalene	2.68	0.333	mg/kg wet	3.333		80	40-140	8	30	
2-Chlorophenol	2.52	0.333	mg/kg wet	3.333		76	30-130	9	30	
2-Methylnaphthalene	2.50	0.333	mg/kg wet	3.333		75	40-140	8	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	7	30	
2-Nitroaniline	2.42	0.333	mg/kg wet	3.333		73	40-140	7	30	
2-Nitrophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	11	30	
3,3'-Dichlorobenzidine	2.87	0.667	mg/kg wet	3.333		86	40-140	14	30	
3+4-Methylphenol	4.87	0.667	mg/kg wet	6.667		73	30-130	5	30	
3-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	8	30	
4,6-Dinitro-2-Methylphenol	3.12	1.67	mg/kg wet	3.333		93	30-130	8	30	
4-Bromophenyl-phenylether	2.98	0.333	mg/kg wet	3.333		89	40-140	9	30	
4-Chloro-3-Methylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130	8	30	
4-Chloroaniline	2.20	0.667	mg/kg wet	3.333		66	40-140	15	30	
4-Chloro-phenyl-phenyl ether	2.81	0.333	mg/kg wet	3.333		84	40-140	8	30	
4-Nitroaniline	2.87	0.333	mg/kg wet	3.333		86	40-140	9	30	
4-Nitrophenol	2.77	1.67	mg/kg wet	3.333		83	30-130	8	30	
Acenaphthene	2.73	0.333	mg/kg wet	3.333		82	40-140	9	30	
Acenaphthylene	2.79	0.333	mg/kg wet	3.333		84	40-140	8	30	
Acetophenone	2.36	0.667	mg/kg wet	3.333		71	40-140	8	30	
Aniline	2.02	0.667	mg/kg wet	3.333		61	40-140	13	30	
Anthracene	2.94	0.333	mg/kg wet	3.333		88	40-140	8	30	
Azobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140	9	30	
Benzo(a)anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	7	30	
Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140	7	30	
Benzo(b)fluoranthene	2.83	0.333	mg/kg wet	3.333		85	40-140	3	30	
Benzo(g,h,i)perylene	2.97	0.333	mg/kg wet	3.333		89	40-140	8	30	
Benzo(k)fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	15	30	
Benzoic Acid	2.54	1.67	mg/kg wet	3.333		76	40-140	5	30	
Benzyl Alcohol	2.29	0.333	mg/kg wet	3.333		69	40-140	12	30	
bis(2-Chloroethoxy)methane	2.54	0.333	mg/kg wet	3.333		76	40-140	9	30	
bis(2-Chloroethyl)ether	2.41	0.333	mg/kg wet	3.333		72	40-140	7	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CG51511 - 3546

bis(2-chloroisopropyl)Ether	2.43	0.333	mg/kg wet	3.333		73	40-140	11	30	
bis(2-Ethylhexyl)phthalate	2.50	0.333	mg/kg wet	3.333		75	40-140	8	30	
Butylbenzylphthalate	2.53	0.333	mg/kg wet	3.333		76	40-140	8	30	
Carbazole	3.04	0.333	mg/kg wet	3.333		91	40-140	7	30	
Chrysene	2.94	0.167	mg/kg wet	3.333		88	40-140	9	30	
Dibenzo(a,h)Anthracene	2.99	0.167	mg/kg wet	3.333		90	40-140	9	30	
Dibenzofuran	2.81	0.333	mg/kg wet	3.333		84	40-140	8	30	
Diethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140	7	30	
Dimethylphthalate	2.76	0.333	mg/kg wet	3.333		83	40-140	7	30	
Di-n-butylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	8	30	
Di-n-octylphthalate	2.53	0.333	mg/kg wet	3.333		76	40-140	8	30	
Fluoranthene	3.28	0.333	mg/kg wet	3.333		98	40-140	8	30	
Fluorene	2.75	0.333	mg/kg wet	3.333		82	40-140	7	30	
Hexachlorobenzene	2.87	0.167	mg/kg wet	3.333		86	40-140	10	30	
Hexachlorobutadiene	2.87	0.333	mg/kg wet	3.333		86	40-140	10	30	
Hexachlorocyclopentadiene	2.74	1.67	mg/kg wet	3.333		82	40-140	9	30	
Hexachloroethane	2.54	0.333	mg/kg wet	3.333		76	40-140	10	30	
Indeno(1,2,3-cd)Pyrene	3.00	0.333	mg/kg wet	3.333		90	40-140	9	30	
Isophorone	2.52	0.333	mg/kg wet	3.333		76	40-140	9	30	
Naphthalene	2.69	0.333	mg/kg wet	3.333		81	40-140	9	30	
Nitrobenzene	2.68	0.333	mg/kg wet	3.333		80	40-140	10	30	
N-Nitrosodimethylamine	1.70	0.333	mg/kg wet	3.333		51	40-140	11	30	
N-Nitroso-Di-n-Propylamine	2.23	0.333	mg/kg wet	3.333		67	40-140	17	30	
N-nitrosodiphenylamine	2.84	0.333	mg/kg wet	3.333		85	40-140	9	30	
Pentachlorophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	10	30	
Phenanthrene	2.82	0.333	mg/kg wet	3.333		85	40-140	8	30	
Phenol	2.31	0.333	mg/kg wet	3.333		69	30-130	6	30	
Pyrene	2.26	0.333	mg/kg wet	3.333		68	40-140	8	30	
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.44		mg/kg wet	3.333		73	30-130			
Surrogate: 2,4,6-Tribromophenol	4.59		mg/kg wet	5.000		92	30-130			
Surrogate: 2-Chlorophenol-d4	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: 2-Fluorophenol	3.37		mg/kg wet	5.000		67	30-130			
Surrogate: Nitrobenzene-d5	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: Phenol-d6	3.30		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.33		mg/kg wet	3.333		70	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507354

Notes and Definitions

- Z-10 Soil pH measured in water at 24.9 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- ICV- Initial Calibration Verification recovery is below lower control limit (ICV-).
- D Diluted.
- C+ Continuing Calibration recovery is above upper control limit (C+).
- C- Continuing Calibration recovery is below lower control limit (C-).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1507354

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15070354
 Date Project Due: 7/22/15
 Days For Project: 5 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <input type="text" value="Cooler Temp: 16.9"/> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="text" value="Iced With: Ice"/> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: _____ | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: _____ | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: _____ | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: _____ | |

18. Was there need to call project manager to discuss status? If yes, please explain.
LL vials frozen @ 16¹⁴ JL 7/15/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	2	NP
2	Yes	40 ml - VOA	1	MeOH
2	Yes	40 ml - VOA	2	other
2	Yes	8 oz Soil Jar	2	NP
3	Yes	40 ml - VOA	1	MeOH
3	Yes	40 ml - VOA	2	other
3	Yes	8 oz Soil Jar	2	NP

Completed By: M. Hedd
 Reviewed By: gr ar

Date/Time: 7/15/15 11:08
 Date/Time: 7/15/15 16¹⁴

ESS Laboratory

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

CHAIN OF CUSTODY

Turn Time: 5 Days
Regulatory State: Rhode Island
 CT RCP MA MCP RGP DOD
Project #: 74-15-0002.134 Project Name: Textron Providence
Address: 500 Harrison Avenue, Suite 4R
City: Boston State: MA Zip Code: 02118 PO #:
Telephone Number: (857) 246-6812 Email Address: pleofanti@charter.us
Company Name: Charter Environmental

ESS Lab # **1507354** RI DEM RDEC

Reporting Limits: Electronic Deliverables Data Checker Other (Please Specify →) Excel

PH: Corrosivity 9045

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	VOC Low Level	SVOC	RCRA 8	TPH
1	7/15/15	1510	Grab	Soil	L2 G. Lopes- Loam	✓	✓	✓	✓	✓
2	7/15/15	1525	Grab	Soil	L3 G. Lopes- 10% Organic	✓	✓	✓	✓	✓
3	7/15/15	1540	Grab	Soil	L3 G. Lopes- 20% Organic	✓	✓	✓	✓	✓

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubittainer J-Jar O-Other P-Poly S-Sterile V-Vial J J V V J J J J
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 10 7 7 10 10 10 10
Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2SO3, 8-ZnAcAc, NaOH, 9-NH4Cl, 10-Other* 1 1 6 10 1 1 1 1

Number of Containers: 1 1 1 2 1

Sampled by: Charter Environmental
Comments: Please specify "Other" preservative and containers types in this space

Laboratory Use Only
 Cooler Present Drop Off Pickup
 Seals Intact Technician Hours →
Cooler Temperature: 16.9 Ice
Received by: (Signature, Date & Time) *M. Maid* 7/15/15 1600
Relinquished by: (Signature, Date & Time) *M. Maid* 7/15/15 1600



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1509425

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 4:34 pm, Sep 21, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

SAMPLE RECEIPT

The following samples were received on September 16, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on September 16, 2015 at 18:40.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509425-01	Lopes 10% + Sand 1	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1509425-01 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

1,4-Dichlorobenzene-D4 (43% @ 50-200%)

1509425-01RE1 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

1,4-Dichlorobenzene-D4 (47% @ 50-200%)

8100M Total Petroleum Hydrocarbons

CYI0182-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).

Hexadecane (C16) (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CYI0158-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (105% @ 80-120%)

CYI0181-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (82% @ 80-120%), Benzoic Acid (72% @ 80-120%)

CYI0181-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Benzoic Acid (28% @ 20%)

Total Metals

CI51706-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Mercury (31% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

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	5.36 (2.79)		6010C		1	KJK	09/18/15 0:29	2.22	100	CI51749
Barium	20.1 (2.79)		6010C		1	KJK	09/18/15 0:29	2.22	100	CI51749
Cadmium	ND (0.56)		6010C		1	KJK	09/18/15 0:29	2.22	100	CI51749
Chromium	5.88 (1.12)		6010C		1	KJK	09/18/15 0:29	2.22	100	CI51749
Lead	26.3 (5.58)		6010C		1	KJK	09/18/15 0:29	2.22	100	CI51749
Mercury	0.056 (0.038)		7471B		1	BJV	09/17/15 12:03	0.65	40	CI51706
Selenium	ND (11.2)		6010C		2	KJK	09/18/15 14:24	2.22	100	CI51749
Silver	ND (0.56)		6010C		1	KJK	09/18/15 0:29	2.22	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 3.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
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 (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,1,1-Trichloroethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,1,2,2-Tetrachloroethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,1,2-Trichloroethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,1-Dichloroethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,1-Dichloroethene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,1-Dichloropropene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2,3-Trichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2,3-Trichloropropane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2,4-Trichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2,4-Trimethylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2-Dibromo-3-Chloropropane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2-Dibromoethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2-Dichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2-Dichloroethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,2-Dichloropropane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,3,5-Trimethylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,3-Dichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,3-Dichloropropane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,4-Dichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1,4-Dioxane	ND (0.188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
1-Chlorohexane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
2,2-Dichloropropane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
2-Butanone	ND (0.0938)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
2-Chlorotoluene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
2-Hexanone	ND (0.0938)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
4-Chlorotoluene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
4-Isopropyltoluene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
4-Methyl-2-Pentanone	ND (0.0938)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Acetone	ND (0.0938)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Benzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Bromobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 3.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
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 (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Bromodichloromethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Bromoform	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Bromomethane	ND (0.0188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Carbon Disulfide	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Carbon Tetrachloride	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Chlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Chloroethane	ND (0.0188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Chloroform	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Chloromethane	ND (0.0188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
cis-1,2-Dichloroethene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
cis-1,3-Dichloropropene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Dibromochloromethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Dibromomethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Dichlorodifluoromethane	ND (0.0188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Diethyl Ether	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Di-isopropyl ether	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Ethyl tertiary-butyl ether	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Ethylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Hexachlorobutadiene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Isopropylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Methyl tert-Butyl Ether	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Methylene Chloride	ND (0.0469)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Naphthalene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
n-Butylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
n-Propylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
sec-Butylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Styrene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
tert-Butylbenzene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Tertiary-amyl methyl ether	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Tetrachloroethene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Tetrahydrofuran	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 3.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
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 (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
trans-1,2-Dichloroethene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
trans-1,3-Dichloropropene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Trichloroethene	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Trichlorofluoromethane	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Vinyl Acetate	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Vinyl Chloride	ND (0.0188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Xylene O	ND (0.0094)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Xylene P,M	ND (0.0188)		8260B Low		1	09/18/15 13:16	CYI0186	CI51730
Xylenes (Total)	ND (0.0188)		8260B Low		1	09/18/15 13:16		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>130 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>85 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>108 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:50

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	348 (48.1)		8100M		1	09/17/15 18:07	CY10190	CI51613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		92 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:10

8270D Semi-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-Biphenyl	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
1,2,4-Trichlorobenzene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
1,2-Dichlorobenzene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
1,3-Dichlorobenzene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
1,4-Dichlorobenzene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,3,4,6-Tetrachlorophenol	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,4,5-Trichlorophenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,4,6-Trichlorophenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,4-Dichlorophenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,4-Dimethylphenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,4-Dinitrophenol	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,4-Dinitrotoluene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2,6-Dinitrotoluene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2-Chloronaphthalene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2-Chlorophenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2-Methylnaphthalene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2-Methylphenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2-Nitroaniline	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
2-Nitrophenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
3,3'-Dichlorobenzidine	ND (0.837)		8270D		1	09/17/15 19:08	CYI0181	CI51614
3+4-Methylphenol	ND (0.837)		8270D		1	09/17/15 19:08	CYI0181	CI51614
3-Nitroaniline	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4,6-Dinitro-2-Methylphenol	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4-Bromophenyl-phenylether	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4-Chloro-3-Methylphenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4-Chloroaniline	ND (0.837)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4-Chloro-phenyl-phenyl ether	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4-Nitroaniline	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
4-Nitrophenol	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Acenaphthene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Acenaphthylene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Acetophenone	ND (0.837)		8270D		1	09/17/15 19:08	CYI0181	CI51614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:10

8270D Semi-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>
Aniline	ND (0.837)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Anthracene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Azobenzene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzo(a)anthracene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzo(a)pyrene	0.254 (0.210)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzo(b)fluoranthene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzo(g,h,i)perylene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzo(k)fluoranthene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzoic Acid	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Benzyl Alcohol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
bis(2-Chloroethoxy)methane	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
bis(2-Chloroethyl)ether	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
bis(2-chloroisopropyl)Ether	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
bis(2-Ethylhexyl)phthalate	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Butylbenzylphthalate	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Carbazole	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Chrysene	0.321 (0.210)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Dibenzo(a,h)Anthracene	ND (0.210)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Dibenzofuran	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Diethylphthalate	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Dimethylphthalate	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Di-n-butylphthalate	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Di-n-octylphthalate	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Fluoranthene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Fluorene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Hexachlorobenzene	ND (0.210)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Hexachlorobutadiene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Hexachlorocyclopentadiene	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Hexachloroethane	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Indeno(1,2,3-cd)Pyrene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Isophorone	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Naphthalene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:10

8270D Semi-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>
Nitrobenzene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
N-Nitrosodimethylamine	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
N-Nitroso-Di-n-Propylamine	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
N-nitrosodiphenylamine	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Pentachlorophenol	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Phenanthrene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Phenol	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Pyrene	ND (0.418)		8270D		1	09/17/15 19:08	CYI0181	CI51614
Pyridine	ND (2.10)		8270D		1	09/17/15 19:08	CYI0181	CI51614

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	72 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	67 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	68 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	67 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	66 %		30-130
<i>Surrogate: Phenol-d6</i>	70 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	67 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.74 (N/A)		9045		1	JLK	09/17/15 9:45	S.U.	CI51703
Corrosivity (pH) Sample Temp	Soil pH measured in water at 21.1 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 3.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01RE1
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 (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,1,1-Trichloroethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,1,2,2-Tetrachloroethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,1,2-Trichloroethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,1-Dichloroethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,1-Dichloroethene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,1-Dichloropropene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2,3-Trichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2,3-Trichloropropane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2,4-Trichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2,4-Trimethylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2-Dibromo-3-Chloropropane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2-Dibromoethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2-Dichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2-Dichloroethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,2-Dichloropropane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,3,5-Trimethylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,3-Dichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,3-Dichloropropane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,4-Dichlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1,4-Dioxane	ND (0.188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
1-Chlorohexane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
2,2-Dichloropropane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
2-Butanone	ND (0.0938)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
2-Chlorotoluene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
2-Hexanone	ND (0.0938)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
4-Chlorotoluene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
4-Isopropyltoluene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
4-Methyl-2-Pentanone	ND (0.0938)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Acetone	ND (0.0938)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Benzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Bromobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 3.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01RE1
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 (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Bromodichloromethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Bromoform	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Bromomethane	ND (0.0188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Carbon Disulfide	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Carbon Tetrachloride	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Chlorobenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Chloroethane	ND (0.0188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Chloroform	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Chloromethane	ND (0.0188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
cis-1,2-Dichloroethene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
cis-1,3-Dichloropropene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Dibromochloromethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Dibromomethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Dichlorodifluoromethane	ND (0.0188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Diethyl Ether	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Di-isopropyl ether	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Ethyl tertiary-butyl ether	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Ethylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Hexachlorobutadiene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Isopropylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Methyl tert-Butyl Ether	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Methylene Chloride	ND (0.0469)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Naphthalene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
n-Butylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
n-Propylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
sec-Butylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Styrene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
tert-Butylbenzene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Tertiary-amyl methyl ether	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Tetrachloroethene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Tetrahydrofuran	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 1
Date Sampled: 09/16/15 15:50
Percent Solids: 81
Initial Volume: 3.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509425
ESS Laboratory Sample ID: 1509425-01RE1
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 (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
trans-1,2-Dichloroethene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
trans-1,3-Dichloropropene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Trichloroethene	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Trichlorofluoromethane	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Vinyl Acetate	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Vinyl Chloride	ND (0.0188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Xylene O	ND (0.0094)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Xylene P,M	ND (0.0188)		8260B Low		1	09/18/15 16:07	CYI0186	CI51730
Xylenes (Total)	ND (0.0188)		8260B Low		1	09/18/15 16:07		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>115 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>80 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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 CI51706 - 245.1/7470A

Blank

Mercury ND 0.033 mg/kg wet

LCS

Mercury 28.8 3.96 mg/kg wet 24.90 116 80-120

LCS Dup

Mercury 21.1 3.74 mg/kg wet 24.90 85 80-120 31 20 D+

Batch CI51749 - 3005A

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 113 10.0 mg/kg wet 133.0 85 80-120
Barium 195 10.0 mg/kg wet 229.0 85 80-120
Cadmium 96.9 2.00 mg/kg wet 123.0 79 73-127
Chromium 52.1 4.00 mg/kg wet 63.20 82 80-120
Lead 92.1 20.0 mg/kg wet 108.0 85 80-120
Selenium 59.2 20.0 mg/kg wet 81.40 73 64-136
Silver 65.1 2.00 mg/kg wet 74.80 87 80-120

LCS Dup

Arsenic 111 9.26 mg/kg wet 133.0 84 80-120 1 20
Barium 201 9.26 mg/kg wet 229.0 88 80-120 3 20
Cadmium 97.4 1.85 mg/kg wet 123.0 79 73-127 0.5 20
Chromium 51.9 3.70 mg/kg wet 63.20 82 80-120 0.3 20
Lead 91.0 18.5 mg/kg wet 108.0 84 80-120 1 20
Selenium 60.1 18.5 mg/kg wet 81.40 74 64-136 1 20
Silver 65.5 1.85 mg/kg wet 74.80 88 80-120 0.6 20

5035/8260B Volatile Organic Compounds / Low Level

Batch CI51730 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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 CI51730 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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 CI51730 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0555		mg/kg wet	0.05000		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0459		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0496		mg/kg wet	0.05000		99	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,1,2,2-Tetrachloroethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,2-Trichloroethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
1,1-Dichloroethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
1,1-Dichloropropene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,3-Trichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,3-Trichloropropane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,4-Trichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromoethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dichloroethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloropropane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,3,5-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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 CI51730 - 5035

1,4-Dichlorobenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dioxane	1.01	0.100	mg/kg wet	1.000		101	70-130			
1-Chlorohexane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
2-Butanone	0.237	0.0500	mg/kg wet	0.2500		95	70-130			
2-Chlorotoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
2-Hexanone	0.245	0.0500	mg/kg wet	0.2500		98	70-130			
4-Chlorotoluene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
4-Isopropyltoluene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.222	0.0500	mg/kg wet	0.2500		89	70-130			
Acetone	0.318	0.0500	mg/kg wet	0.2500		127	70-130			
Benzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Bromobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Bromochloromethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Bromodichloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Bromoform	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0469	0.0100	mg/kg wet	0.05000		94	70-130			
Carbon Disulfide	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Carbon Tetrachloride	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0426	0.0100	mg/kg wet	0.05000		85	70-130			
Chloroform	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130			
cis-1,2-Dichloroethene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
cis-1,3-Dichloropropene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
Dibromochloromethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Dibromomethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Dichlorodifluoromethane	0.0460	0.0100	mg/kg wet	0.05000		92	70-130			
Diethyl Ether	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Di-isopropyl ether	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Ethyl tertiary-butyl ether	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Ethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Isopropylbenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Methyl tert-Butyl Ether	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0493	0.0250	mg/kg wet	0.05000		99	70-130			
Naphthalene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
n-Butylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
sec-Butylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Styrene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
tert-Butylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0411	0.0050	mg/kg wet	0.05000		82	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1509425

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 CI51730 - 5035

Toluene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
trans-1,2-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
trans-1,3-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130			
Trichloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Trichlorofluoromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0599	0.0050	mg/kg wet	0.05000		120	70-130			
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130			
Xylene O	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0972	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0504		mg/kg wet	0.05000		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0488		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,1,1-Trichloroethane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
1,1,2,2-Tetrachloroethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	0.2	25	
1,1,2-Trichloroethane	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	1	25	
1,1-Dichloroethane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
1,1-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	0.1	25	
1,1-Dichloropropene	0.0415	0.0050	mg/kg wet	0.05000		83	70-130	2	25	
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
1,2,3-Trichloropropane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,2,4-Trichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
1,2,4-Trimethylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.4	25	
1,2-Dibromo-3-Chloropropane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	0.1	25	
1,2-Dibromoethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.08	25	
1,2-Dichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	0.5	25	
1,2-Dichloroethane	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.2	25	
1,2-Dichloropropane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.5	25	
1,3,5-Trimethylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.7	25	
1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	0.3	25	
1,3-Dichloropropane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.3	25	
1,4-Dichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130	3	20	
1-Chlorohexane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.1	25	
2,2-Dichloropropane	0.0418	0.0050	mg/kg wet	0.05000		84	70-130	1	25	
2-Butanone	0.226	0.0500	mg/kg wet	0.2500		90	70-130	5	25	
2-Chlorotoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.4	25	
2-Hexanone	0.233	0.0500	mg/kg wet	0.2500		93	70-130	5	25	
4-Chlorotoluene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	1	25	
4-Isopropyltoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	0.09	25	
4-Methyl-2-Pentanone	0.222	0.0500	mg/kg wet	0.2500		89	70-130	0.06	25	
Acetone	0.248	0.0500	mg/kg wet	0.2500		99	70-130	25	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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 CI51730 - 5035

Benzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.9	25	
Bromochloromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.8	25	
Bromodichloromethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.1	25	
Bromoform	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Bromomethane	0.0428	0.0100	mg/kg wet	0.05000		86	70-130	9	25	
Carbon Disulfide	0.0431	0.0050	mg/kg wet	0.05000		86	70-130	0.6	25	
Carbon Tetrachloride	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	0.6	25	
Chlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	0.4	25	
Chloroethane	0.0435	0.0100	mg/kg wet	0.05000		87	70-130	2	25	
Chloroform	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
Chloromethane	0.0414	0.0100	mg/kg wet	0.05000		83	70-130	0.2	25	
cis-1,2-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.3	25	
cis-1,3-Dichloropropene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130	1	25	
Dibromochloromethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Dibromomethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	3	25	
Dichlorodifluoromethane	0.0445	0.0100	mg/kg wet	0.05000		89	70-130	3	25	
Diethyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.1	25	
Di-isopropyl ether	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	0.09	25	
Ethyl tertiary-butyl ether	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	0.9	25	
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	0.3	25	
Hexachlorobutadiene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.3	25	
Methyl tert-Butyl Ether	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
Methylene Chloride	0.0500	0.0250	mg/kg wet	0.05000		100	70-130	2	25	
Naphthalene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	0.7	25	
n-Butylbenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.9	25	
n-Propylbenzene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
sec-Butylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Styrene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.8	25	
tert-Butylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	0	25	
Tertiary-amyl methyl ether	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	0.4	25	
Tetrachloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	0.3	25	
Tetrahydrofuran	0.0432	0.0050	mg/kg wet	0.05000		86	70-130	5	25	
Toluene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
trans-1,2-Dichloroethene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.2	25	
trans-1,3-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	0	25	
Trichloroethene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130	2	25	
Trichlorofluoromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	0.04	25	
Vinyl Acetate	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	0.4	25	
Vinyl Chloride	0.0401	0.0100	mg/kg wet	0.05000		80	70-130	4	25	
Xylene O	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	0.6	25	
Xylene P,M	0.0966	0.0100	mg/kg wet	0.1000		97	70-130	0.6	25	
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0495		mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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 CI51730 - 5035

Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0483		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI51613 - 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	4.85		mg/kg wet	5.000		97	40-140			
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LCS

Decane (C10)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		102	40-140			
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Total Petroleum Hydrocarbons	33.8	37.5	mg/kg wet	35.00		97	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		100	40-140			

Surrogate: O-Terphenyl	4.57		mg/kg wet	5.000		91	40-140			
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LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500		87	40-140	6	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		98	40-140	1	25	
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		93	40-140	2	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1509425

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 CI51613 - 3546

Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		99	40-140	2	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140	0.9	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		106	40-140	3	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140	0.9	25	
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		77	30-140	5	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	0.4	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		98	40-140	0.006	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		101	40-140	4	25	
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140	2	25	
Triacotane (C30)	2.5	0.2	mg/kg wet	2.500		100	40-140	0.3	25	

Surrogate: O-Terphenyl

4.41 mg/kg wet 5.000 88 40-140

8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	mg/kg wet



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	1.90		mg/kg wet	3.333		57	30-130			
Surrogate: 2,4,6-Tribromophenol	2.97		mg/kg wet	5.000		59	30-130			
Surrogate: 2-Chlorophenol-d4	3.01		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	1.95		mg/kg wet	3.333		58	30-130			
Surrogate: 2-Fluorophenol	3.15		mg/kg wet	5.000		63	30-130			
Surrogate: Nitrobenzene-d5	1.95		mg/kg wet	3.333		58	30-130			
Surrogate: Phenol-d6	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.82		mg/kg wet	3.333		84	30-130			

LCS

1,1-Biphenyl	2.80	0.333	mg/kg wet	3.333		84	40-140			
1,2,4-Trichlorobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140			
1,2-Dichlorobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		77	40-140			
1,4-Dichlorobenzene	2.52	0.333	mg/kg wet	3.333		76	40-140			
2,3,4,6-Tetrachlorophenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	3.02	0.333	mg/kg wet	3.333		91	30-130			
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
2,4-Dichlorophenol	2.78	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dimethylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	3.30	0.333	mg/kg wet	3.333		99	40-140			
2,6-Dinitrotoluene	2.95	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.58	0.333	mg/kg wet	3.333		77	40-140			
2-Chlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.56	0.333	mg/kg wet	3.333		77	40-140			
2-Methylphenol	2.72	0.333	mg/kg wet	3.333		81	30-130			
2-Nitroaniline	2.53	0.333	mg/kg wet	3.333		76	40-140			
2-Nitrophenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
3,3'-Dichlorobenzidine	2.77	0.667	mg/kg wet	3.333		83	40-140			
3+4-Methylphenol	5.38	0.667	mg/kg wet	6.667		81	30-130			
3-Nitroaniline	3.23	0.333	mg/kg wet	3.333		97	40-140			
4,6-Dinitro-2-Methylphenol	2.80	1.67	mg/kg wet	3.333		84	30-130			
4-Bromophenyl-phenylether	3.11	0.333	mg/kg wet	3.333		93	40-140			
4-Chloro-3-Methylphenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
4-Chloroaniline	2.40	0.667	mg/kg wet	3.333		72	40-140			
4-Chloro-phenyl-phenyl ether	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.42	0.333	mg/kg wet	3.333		103	40-140			
4-Nitrophenol	2.39	1.67	mg/kg wet	3.333		72	30-130			
Acenaphthene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Acenaphthylene	2.75	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.72	0.667	mg/kg wet	3.333		82	40-140			
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140			
Anthracene	3.14	0.333	mg/kg wet	3.333		94	40-140			
Azobenzene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzo(a)anthracene	3.08	0.333	mg/kg wet	3.333		92	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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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 Semi-Volatile Organic Compounds

Batch CI51614 - 3546

Benzo(a)pyrene	3.22	0.167	mg/kg wet	3.333		97	40-140			
Benzo(b)fluoranthene	3.28	0.333	mg/kg wet	3.333		98	40-140			
Benzo(g,h,i)perylene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.72	1.67	mg/kg wet	3.333		82	40-140			
Benzyl Alcohol	2.45	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethoxy)methane	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	2.94	0.333	mg/kg wet	3.333		88	40-140			
bis(2-chloroisopropyl)Ether	2.60	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Ethylhexyl)phthalate	3.17	0.333	mg/kg wet	3.333		95	40-140			
Butylbenzylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Carbazole	3.22	0.333	mg/kg wet	3.333		97	40-140			
Chrysene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Dibenzo(a,h)Anthracene	3.21	0.167	mg/kg wet	3.333		96	40-140			
Dibenzofuran	2.76	0.333	mg/kg wet	3.333		83	40-140			
Diethylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140			
Dimethylphthalate	2.98	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.29	0.333	mg/kg wet	3.333		99	40-140			
Di-n-octylphthalate	3.08	0.333	mg/kg wet	3.333		92	40-140			
Fluoranthene	3.08	0.333	mg/kg wet	3.333		92	40-140			
Fluorene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Hexachlorobutadiene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Hexachlorocyclopentadiene	2.70	1.67	mg/kg wet	3.333		81	40-140			
Hexachloroethane	2.47	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	3.20	0.333	mg/kg wet	3.333		96	40-140			
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Nitrobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			
N-Nitrosodimethylamine	2.61	0.333	mg/kg wet	3.333		78	40-140			
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	3.03	0.333	mg/kg wet	3.333		91	40-140			
Pentachlorophenol	2.86	1.67	mg/kg wet	3.333		86	30-130			
Phenanthrene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Phenol	2.56	0.333	mg/kg wet	3.333		77	30-130			
Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Pyridine	2.23	1.67	mg/kg wet	3.333		67	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.35		mg/kg wet	3.333		70	30-130			
Surrogate: 2,4,6-Tribromophenol	3.94		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.74		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Fluorobiphenyl	2.55		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: Nitrobenzene-d5	2.50		mg/kg wet	3.333		75	30-130			
Surrogate: Phenol-d6	3.95		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	2.76		mg/kg wet	3.333		83	30-130			



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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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

LCS Dup

1,1-Biphenyl	2.63	0.333	mg/kg wet	3.333		79	40-140	6	30	
1,2,4-Trichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	16	30	
1,2-Dichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140	18	30	
1,3-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140	18	30	
1,4-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	18	30	
2,3,4,6-Tetrachlorophenol	2.39	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	2	30	
2,4,6-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	2	30	
2,4-Dichlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130	8	30	
2,4-Dimethylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130	7	30	
2,4-Dinitrophenol	2.43	1.67	mg/kg wet	3.333		73	30-130	0.2	30	
2,4-Dinitrotoluene	3.32	0.333	mg/kg wet	3.333		99	40-140	0.5	30	
2,6-Dinitrotoluene	2.92	0.333	mg/kg wet	3.333		88	40-140	1	30	
2-Chloronaphthalene	2.40	0.333	mg/kg wet	3.333		72	40-140	7	30	
2-Chlorophenol	2.27	0.333	mg/kg wet	3.333		68	30-130	14	30	
2-Methylnaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	11	30	
2-Methylphenol	2.42	0.333	mg/kg wet	3.333		73	30-130	12	30	
2-Nitroaniline	2.46	0.333	mg/kg wet	3.333		74	40-140	3	30	
2-Nitrophenol	2.46	0.333	mg/kg wet	3.333		74	30-130	16	30	
3,3'-Dichlorobenzidine	2.86	0.667	mg/kg wet	3.333		86	40-140	3	30	
3+4-Methylphenol	4.98	0.667	mg/kg wet	6.667		75	30-130	8	30	
3-Nitroaniline	3.24	0.333	mg/kg wet	3.333		97	40-140	0.5	30	
4,6-Dinitro-2-Methylphenol	2.83	1.67	mg/kg wet	3.333		85	30-130	1	30	
4-Bromophenyl-phenylether	3.03	0.333	mg/kg wet	3.333		91	40-140	3	30	
4-Chloro-3-Methylphenol	2.74	0.333	mg/kg wet	3.333		82	30-130	0.09	30	
4-Chloroaniline	2.22	0.667	mg/kg wet	3.333		66	40-140	8	30	
4-Chloro-phenyl-phenyl ether	2.85	0.333	mg/kg wet	3.333		86	40-140	3	30	
4-Nitroaniline	3.57	0.333	mg/kg wet	3.333		107	40-140	4	30	
4-Nitrophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	5	30	
Acenaphthene	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Acenaphthylene	2.67	0.333	mg/kg wet	3.333		80	40-140	3	30	
Acetophenone	2.37	0.667	mg/kg wet	3.333		71	40-140	14	30	
Aniline	2.06	0.667	mg/kg wet	3.333		62	40-140	11	30	
Anthracene	3.14	0.333	mg/kg wet	3.333		94	40-140	0.1	30	
Azobenzene	3.02	0.333	mg/kg wet	3.333		91	40-140	1	30	
Benzo(a)anthracene	3.02	0.333	mg/kg wet	3.333		91	40-140	2	30	
Benzo(a)pyrene	3.16	0.167	mg/kg wet	3.333		95	40-140	2	30	
Benzo(b)fluoranthene	3.19	0.333	mg/kg wet	3.333		96	40-140	3	30	
Benzo(g,h,i)perylene	3.19	0.333	mg/kg wet	3.333		96	40-140	0.4	30	
Benzo(k)fluoranthene	3.16	0.333	mg/kg wet	3.333		95	40-140	3	30	
Benzoic Acid	2.77	1.67	mg/kg wet	3.333		83	40-140	2	30	
Benzyl Alcohol	2.21	0.333	mg/kg wet	3.333		66	40-140	10	30	
bis(2-Chloroethoxy)methane	2.46	0.333	mg/kg wet	3.333		74	40-140	13	30	
bis(2-Chloroethyl)ether	2.48	0.333	mg/kg wet	3.333		74	40-140	17	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

bis(2-chloroisopropyl)Ether	2.19	0.333	mg/kg wet	3.333		66	40-140	17	30	
bis(2-Ethylhexyl)phthalate	3.08	0.333	mg/kg wet	3.333		92	40-140	3	30	
Butylbenzylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	2	30	
Carbazole	3.26	0.333	mg/kg wet	3.333		98	40-140	1	30	
Chrysene	3.10	0.167	mg/kg wet	3.333		93	40-140	1	30	
Dibenzo(a,h)Anthracene	3.23	0.167	mg/kg wet	3.333		97	40-140	0.7	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		80	40-140	3	30	
Diethylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	3	30	
Dimethylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140	1	30	
Di-n-butylphthalate	3.24	0.333	mg/kg wet	3.333		97	40-140	1	30	
Di-n-octylphthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	2	30	
Fluoranthene	3.10	0.333	mg/kg wet	3.333		93	40-140	0.7	30	
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140	1	30	
Hexachlorobenzene	2.84	0.167	mg/kg wet	3.333		85	40-140	1	30	
Hexachlorobutadiene	2.15	0.333	mg/kg wet	3.333		65	40-140	17	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	13	30	
Hexachloroethane	2.06	0.333	mg/kg wet	3.333		62	40-140	18	30	
Indeno(1,2,3-cd)Pyrene	3.17	0.333	mg/kg wet	3.333		95	40-140	1	30	
Isophorone	2.44	0.333	mg/kg wet	3.333		73	40-140	9	30	
Naphthalene	2.27	0.333	mg/kg wet	3.333		68	40-140	14	30	
Nitrobenzene	2.29	0.333	mg/kg wet	3.333		69	40-140	14	30	
N-Nitrosodimethylamine	2.19	0.333	mg/kg wet	3.333		66	40-140	17	30	
N-Nitroso-Di-n-Propylamine	2.34	0.333	mg/kg wet	3.333		70	40-140	12	30	
N-nitrosodiphenylamine	3.01	0.333	mg/kg wet	3.333		90	40-140	0.8	30	
Pentachlorophenol	2.85	1.67	mg/kg wet	3.333		86	30-130	0.3	30	
Phenanthrene	3.05	0.333	mg/kg wet	3.333		91	40-140	0.5	30	
Phenol	2.28	0.333	mg/kg wet	3.333		68	30-130	12	30	
Pyrene	3.04	0.333	mg/kg wet	3.333		91	40-140	2	30	
Pyridine	1.86	1.67	mg/kg wet	3.333		56	40-140	18	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.94		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.31		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.11		mg/kg wet	3.333		63	30-130			
Surrogate: Phenol-d6	3.41		mg/kg wet	5.000		68	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		79	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

Notes and Definitions

- Z-10 Soil pH measured in water at 21.1 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509425

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15090425
 Date Project Due: 9/21/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <input type="text" value="Cooler Temp: 23.1"/> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="text" value="Iced With: Ice"/> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: _____ | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: _____ | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: _____ | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: _____ | |

18. Was there need to call project manager to discuss status? If yes, please explain.

LL vials frozen @ 1840 JF 9/16/15

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature]
 Reviewed By: [Signature]

Date/Time: 9/16/15 1442
 Date/Time: 9/16/15 1835



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1509427

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 4:35 pm, Sep 21, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

SAMPLE RECEIPT

The following samples were received on September 16, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on September 16, 2015 at 16:30.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509427-01	Lopes 10% + Sand 3	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

PROJECT NARRATIVE

8100M Total Petroleum Hydrocarbons

CYI0182-CCV3 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)
Hexadecane (C16) (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CYI0158-CCV1 [Calibration required quadratic regression \(Q\).](#)
2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (105% @ 80-120%)

CYI0181-CCV1 [Calibration required quadratic regression \(Q\).](#)
2,4-Dinitrophenol (82% @ 80-120%), Benzoic Acid (72% @ 80-120%)

CYI0181-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)
Benzoic Acid (28% @ 20%)

Total Metals

CI51706-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)
Mercury (31% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

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	3.47 (2.57)		6010C		1	KJK	09/18/15 0:37	2.56	100	CI51749
Barium	21.7 (2.57)		6010C		1	KJK	09/18/15 0:37	2.56	100	CI51749
Cadmium	ND (0.51)		6010C		1	KJK	09/18/15 0:37	2.56	100	CI51749
Chromium	6.53 (1.03)		6010C		1	KJK	09/18/15 0:37	2.56	100	CI51749
Lead	24.7 (5.14)		6010C		1	KJK	09/18/15 0:37	2.56	100	CI51749
Mercury	0.043 (0.039)		7471B		1	BJV	09/17/15 12:06	0.66	40	CI51706
Selenium	ND (10.3)		6010C		2	KJK	09/18/15 14:34	2.56	100	CI51749
Silver	ND (0.51)		6010C		1	KJK	09/18/15 0:37	2.56	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 3.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
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 (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,1,1-Trichloroethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,1,2,2-Tetrachloroethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,1,2-Trichloroethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,1-Dichloroethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,1-Dichloroethene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,1-Dichloropropene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2,3-Trichlorobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2,3-Trichloropropane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2,4-Trichlorobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2,4-Trimethylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2-Dibromo-3-Chloropropane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2-Dibromoethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2-Dichlorobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2-Dichloroethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,2-Dichloropropane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,3,5-Trimethylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,3-Dichlorobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,3-Dichloropropane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,4-Dichlorobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1,4-Dioxane	ND (0.169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
1-Chlorohexane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
2,2-Dichloropropane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
2-Butanone	ND (0.0843)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
2-Chlorotoluene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
2-Hexanone	ND (0.0843)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
4-Chlorotoluene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
4-Isopropyltoluene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
4-Methyl-2-Pentanone	ND (0.0843)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Acetone	ND (0.0843)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Benzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Bromobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 3.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
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 (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Bromodichloromethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Bromoform	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Bromomethane	ND (0.0169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Carbon Disulfide	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Carbon Tetrachloride	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Chlorobenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Chloroethane	ND (0.0169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Chloroform	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Chloromethane	ND (0.0169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
cis-1,2-Dichloroethene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
cis-1,3-Dichloropropene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Dibromochloromethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Dibromomethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Dichlorodifluoromethane	ND (0.0169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Diethyl Ether	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Di-isopropyl ether	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Ethyl tertiary-butyl ether	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Ethylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Hexachlorobutadiene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Isopropylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Methyl tert-Butyl Ether	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Methylene Chloride	ND (0.0421)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Naphthalene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
n-Butylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
n-Propylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
sec-Butylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Styrene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
tert-Butylbenzene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Tertiary-amyl methyl ether	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Tetrachloroethene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Tetrahydrofuran	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 3.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
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 (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
trans-1,2-Dichloroethene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
trans-1,3-Dichloropropene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Trichloroethene	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Trichlorofluoromethane	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Vinyl Acetate	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Vinyl Chloride	ND (0.0169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Xylene O	ND (0.0084)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Xylene P,M	ND (0.0169)		8260B Low		1	09/18/15 14:42	CYI0186	CI51730
Xylenes (Total)	ND (0.0169)		8260B Low		1	09/18/15 14:42		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>118 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:50

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	206 (50.6)		8100M		1	09/17/15 19:27	CY10190	CI51613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		92 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:10

8270D Semi-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-Biphenyl	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
1,2,4-Trichlorobenzene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
1,2-Dichlorobenzene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
1,3-Dichlorobenzene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
1,4-Dichlorobenzene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,3,4,6-Tetrachlorophenol	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,4,5-Trichlorophenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,4,6-Trichlorophenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,4-Dichlorophenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,4-Dimethylphenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,4-Dinitrophenol	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,4-Dinitrotoluene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2,6-Dinitrotoluene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2-Chloronaphthalene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2-Chlorophenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2-Methylnaphthalene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2-Methylphenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2-Nitroaniline	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
2-Nitrophenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
3,3'-Dichlorobenzidine	ND (0.920)		8270D		1	09/17/15 16:03	CYI0181	CI51614
3+4-Methylphenol	ND (0.920)		8270D		1	09/17/15 16:03	CYI0181	CI51614
3-Nitroaniline	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4,6-Dinitro-2-Methylphenol	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4-Bromophenyl-phenylether	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4-Chloro-3-Methylphenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4-Chloroaniline	ND (0.920)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4-Chloro-phenyl-phenyl ether	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4-Nitroaniline	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
4-Nitrophenol	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Acenaphthene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Acenaphthylene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Acetophenone	ND (0.920)		8270D		1	09/17/15 16:03	CYI0181	CI51614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:10

8270D Semi-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>
Aniline	ND (0.920)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Anthracene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Azobenzene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzo(a)anthracene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzo(a)pyrene	ND (0.230)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzo(b)fluoranthene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzo(g,h,i)perylene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzo(k)fluoranthene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzoic Acid	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Benzyl Alcohol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
bis(2-Chloroethoxy)methane	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
bis(2-Chloroethyl)ether	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
bis(2-chloroisopropyl)Ether	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
bis(2-Ethylhexyl)phthalate	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Butylbenzylphthalate	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Carbazole	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Chrysene	0.268 (0.230)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Dibenzo(a,h)Anthracene	ND (0.230)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Dibenzofuran	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Diethylphthalate	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Dimethylphthalate	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Di-n-butylphthalate	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Di-n-octylphthalate	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Fluoranthene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Fluorene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Hexachlorobenzene	ND (0.230)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Hexachlorobutadiene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Hexachlorocyclopentadiene	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Hexachloroethane	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Indeno(1,2,3-cd)Pyrene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Isophorone	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Naphthalene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/17/15 10:10

8270D Semi-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>
Nitrobenzene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
N-Nitrosodimethylamine	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
N-Nitroso-Di-n-Propylamine	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
N-nitrosodiphenylamine	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Pentachlorophenol	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Phenanthrene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Phenol	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Pyrene	ND (0.459)		8270D		1	09/17/15 16:03	CYI0181	CI51614
Pyridine	ND (2.30)		8270D		1	09/17/15 16:03	CYI0181	CI51614

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>72 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>68 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>67 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>77 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 3
Date Sampled: 09/16/15 15:58
Percent Solids: 76

ESS Laboratory Work Order: 1509427
ESS Laboratory Sample ID: 1509427-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.90 (N/A)		9045		1	JLK	09/17/15 9:45	S.U.	CI51703
Corrosivity (pH) Sample Temp	Soil pH measured in water at 21 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51706 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet							
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LCS

Mercury	28.8	3.96	mg/kg wet	24.90		116	80-120			
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LCS Dup

Mercury	21.1	3.74	mg/kg wet	24.90		85	80-120	31	20	D+
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Batch CI51749 - 3005A

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	113	10.0	mg/kg wet	133.0		85	80-120			
Barium	195	10.0	mg/kg wet	229.0		85	80-120			
Cadmium	96.9	2.00	mg/kg wet	123.0		79	73-127			
Chromium	52.1	4.00	mg/kg wet	63.20		82	80-120			
Lead	92.1	20.0	mg/kg wet	108.0		85	80-120			
Selenium	59.2	20.0	mg/kg wet	81.40		73	64-136			
Silver	65.1	2.00	mg/kg wet	74.80		87	80-120			

LCS Dup

Arsenic	111	9.26	mg/kg wet	133.0		84	80-120	1	20	
Barium	201	9.26	mg/kg wet	229.0		88	80-120	3	20	
Cadmium	97.4	1.85	mg/kg wet	123.0		79	73-127	0.5	20	
Chromium	51.9	3.70	mg/kg wet	63.20		82	80-120	0.3	20	
Lead	91.0	18.5	mg/kg wet	108.0		84	80-120	1	20	
Selenium	60.1	18.5	mg/kg wet	81.40		74	64-136	1	20	
Silver	65.5	1.85	mg/kg wet	74.80		88	80-120	0.6	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CI51730 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51730 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51730 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0555		mg/kg wet	0.05000		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0459		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0496		mg/kg wet	0.05000		99	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,1,2,2-Tetrachloroethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,2-Trichloroethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
1,1-Dichloroethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
1,1-Dichloropropene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,3-Trichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,3-Trichloropropane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,4-Trichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromoethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dichloroethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloropropane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,3,5-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51730 - 5035

1,4-Dichlorobenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dioxane	1.01	0.100	mg/kg wet	1.000		101	70-130			
1-Chlorohexane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
2-Butanone	0.237	0.0500	mg/kg wet	0.2500		95	70-130			
2-Chlorotoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
2-Hexanone	0.245	0.0500	mg/kg wet	0.2500		98	70-130			
4-Chlorotoluene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
4-Isopropyltoluene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.222	0.0500	mg/kg wet	0.2500		89	70-130			
Acetone	0.318	0.0500	mg/kg wet	0.2500		127	70-130			
Benzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Bromobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Bromochloromethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Bromodichloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Bromoform	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0469	0.0100	mg/kg wet	0.05000		94	70-130			
Carbon Disulfide	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Carbon Tetrachloride	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0426	0.0100	mg/kg wet	0.05000		85	70-130			
Chloroform	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130			
cis-1,2-Dichloroethene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
cis-1,3-Dichloropropene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
Dibromochloromethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Dibromomethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Dichlorodifluoromethane	0.0460	0.0100	mg/kg wet	0.05000		92	70-130			
Diethyl Ether	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Di-isopropyl ether	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Ethyl tertiary-butyl ether	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Ethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Isopropylbenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Methyl tert-Butyl Ether	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0493	0.0250	mg/kg wet	0.05000		99	70-130			
Naphthalene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
n-Butylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
sec-Butylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Styrene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
tert-Butylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0411	0.0050	mg/kg wet	0.05000		82	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51730 - 5035

Toluene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
trans-1,2-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
trans-1,3-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130			
Trichloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Trichlorofluoromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0599	0.0050	mg/kg wet	0.05000		120	70-130			
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130			
Xylene O	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0972	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0504		mg/kg wet	0.05000		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0488		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,1,1-Trichloroethane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
1,1,2,2-Tetrachloroethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	0.2	25	
1,1,2-Trichloroethane	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	1	25	
1,1-Dichloroethane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
1,1-Dichloroethene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	0.1	25	
1,1-Dichloropropene	0.0415	0.0050	mg/kg wet	0.05000		83	70-130	2	25	
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
1,2,3-Trichloropropane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,2,4-Trichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
1,2,4-Trimethylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.4	25	
1,2-Dibromo-3-Chloropropane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	0.1	25	
1,2-Dibromoethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.08	25	
1,2-Dichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	0.5	25	
1,2-Dichloroethane	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.2	25	
1,2-Dichloropropane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.5	25	
1,3,5-Trimethylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.7	25	
1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	0.3	25	
1,3-Dichloropropane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.3	25	
1,4-Dichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130	3	20	
1-Chlorohexane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.1	25	
2,2-Dichloropropane	0.0418	0.0050	mg/kg wet	0.05000		84	70-130	1	25	
2-Butanone	0.226	0.0500	mg/kg wet	0.2500		90	70-130	5	25	
2-Chlorotoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.4	25	
2-Hexanone	0.233	0.0500	mg/kg wet	0.2500		93	70-130	5	25	
4-Chlorotoluene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	1	25	
4-Isopropyltoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	0.09	25	
4-Methyl-2-Pentanone	0.222	0.0500	mg/kg wet	0.2500		89	70-130	0.06	25	
Acetone	0.248	0.0500	mg/kg wet	0.2500		99	70-130	25	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51730 - 5035

Benzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.9	25	
Bromochloromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.8	25	
Bromodichloromethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.1	25	
Bromoform	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Bromomethane	0.0428	0.0100	mg/kg wet	0.05000		86	70-130	9	25	
Carbon Disulfide	0.0431	0.0050	mg/kg wet	0.05000		86	70-130	0.6	25	
Carbon Tetrachloride	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	0.6	25	
Chlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	0.4	25	
Chloroethane	0.0435	0.0100	mg/kg wet	0.05000		87	70-130	2	25	
Chloroform	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
Chloromethane	0.0414	0.0100	mg/kg wet	0.05000		83	70-130	0.2	25	
cis-1,2-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.3	25	
cis-1,3-Dichloropropene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130	1	25	
Dibromochloromethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Dibromomethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	3	25	
Dichlorodifluoromethane	0.0445	0.0100	mg/kg wet	0.05000		89	70-130	3	25	
Diethyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.1	25	
Di-isopropyl ether	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	0.09	25	
Ethyl tertiary-butyl ether	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	0.9	25	
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	0.3	25	
Hexachlorobutadiene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.3	25	
Methyl tert-Butyl Ether	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
Methylene Chloride	0.0500	0.0250	mg/kg wet	0.05000		100	70-130	2	25	
Naphthalene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	0.7	25	
n-Butylbenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.9	25	
n-Propylbenzene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
sec-Butylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Styrene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.8	25	
tert-Butylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	0	25	
Tertiary-amyl methyl ether	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	0.4	25	
Tetrachloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	0.3	25	
Tetrahydrofuran	0.0432	0.0050	mg/kg wet	0.05000		86	70-130	5	25	
Toluene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
trans-1,2-Dichloroethene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.2	25	
trans-1,3-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	0	25	
Trichloroethene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130	2	25	
Trichlorofluoromethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	0.04	25	
Vinyl Acetate	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	0.4	25	
Vinyl Chloride	0.0401	0.0100	mg/kg wet	0.05000		80	70-130	4	25	
Xylene O	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	0.6	25	
Xylene P,M	0.0966	0.0100	mg/kg wet	0.1000		97	70-130	0.6	25	
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0495		mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51730 - 5035

Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0483		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI51613 - 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	4.85		mg/kg wet	5.000		97	40-140			
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LCS

Decane (C10)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		102	40-140			
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Total Petroleum Hydrocarbons	33.8	37.5	mg/kg wet	35.00		97	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		100	40-140			

Surrogate: O-Terphenyl	4.57		mg/kg wet	5.000		91	40-140			
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LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500		87	40-140	6	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		98	40-140	1	25	
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		93	40-140	2	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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 CI51613 - 3546

Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		99	40-140	2	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140	0.9	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		106	40-140	3	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140	0.9	25	
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		77	30-140	5	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	0.4	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		98	40-140	0.006	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		101	40-140	4	25	
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140	2	25	
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		100	40-140	0.3	25	

Surrogate: O-Terphenyl 4.41 mg/kg wet 5.000 88 40-140

8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	mg/kg wet



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1509427

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	1.90		mg/kg wet	3.333		57	30-130			
Surrogate: 2,4,6-Tribromophenol	2.97		mg/kg wet	5.000		59	30-130			
Surrogate: 2-Chlorophenol-d4	3.01		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	1.95		mg/kg wet	3.333		58	30-130			
Surrogate: 2-Fluorophenol	3.15		mg/kg wet	5.000		63	30-130			
Surrogate: Nitrobenzene-d5	1.95		mg/kg wet	3.333		58	30-130			
Surrogate: Phenol-d6	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.82		mg/kg wet	3.333		84	30-130			

LCS

1,1-Biphenyl	2.80	0.333	mg/kg wet	3.333		84	40-140			
1,2,4-Trichlorobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140			
1,2-Dichlorobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		77	40-140			
1,4-Dichlorobenzene	2.52	0.333	mg/kg wet	3.333		76	40-140			
2,3,4,6-Tetrachlorophenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	3.02	0.333	mg/kg wet	3.333		91	30-130			
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
2,4-Dichlorophenol	2.78	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dimethylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	3.30	0.333	mg/kg wet	3.333		99	40-140			
2,6-Dinitrotoluene	2.95	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.58	0.333	mg/kg wet	3.333		77	40-140			
2-Chlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.56	0.333	mg/kg wet	3.333		77	40-140			
2-Methylphenol	2.72	0.333	mg/kg wet	3.333		81	30-130			
2-Nitroaniline	2.53	0.333	mg/kg wet	3.333		76	40-140			
2-Nitrophenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
3,3'-Dichlorobenzidine	2.77	0.667	mg/kg wet	3.333		83	40-140			
3+4-Methylphenol	5.38	0.667	mg/kg wet	6.667		81	30-130			
3-Nitroaniline	3.23	0.333	mg/kg wet	3.333		97	40-140			
4,6-Dinitro-2-Methylphenol	2.80	1.67	mg/kg wet	3.333		84	30-130			
4-Bromophenyl-phenylether	3.11	0.333	mg/kg wet	3.333		93	40-140			
4-Chloro-3-Methylphenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
4-Chloroaniline	2.40	0.667	mg/kg wet	3.333		72	40-140			
4-Chloro-phenyl-phenyl ether	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.42	0.333	mg/kg wet	3.333		103	40-140			
4-Nitrophenol	2.39	1.67	mg/kg wet	3.333		72	30-130			
Acenaphthene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Acenaphthylene	2.75	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.72	0.667	mg/kg wet	3.333		82	40-140			
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140			
Anthracene	3.14	0.333	mg/kg wet	3.333		94	40-140			
Azobenzene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzo(a)anthracene	3.08	0.333	mg/kg wet	3.333		92	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1509427

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

Benzo(a)pyrene	3.22	0.167	mg/kg wet	3.333		97	40-140			
Benzo(b)fluoranthene	3.28	0.333	mg/kg wet	3.333		98	40-140			
Benzo(g,h,i)perylene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.72	1.67	mg/kg wet	3.333		82	40-140			
Benzyl Alcohol	2.45	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethoxy)methane	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	2.94	0.333	mg/kg wet	3.333		88	40-140			
bis(2-chloroisopropyl)Ether	2.60	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Ethylhexyl)phthalate	3.17	0.333	mg/kg wet	3.333		95	40-140			
Butylbenzylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Carbazole	3.22	0.333	mg/kg wet	3.333		97	40-140			
Chrysene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Dibenzo(a,h)Anthracene	3.21	0.167	mg/kg wet	3.333		96	40-140			
Dibenzofuran	2.76	0.333	mg/kg wet	3.333		83	40-140			
Diethylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140			
Dimethylphthalate	2.98	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.29	0.333	mg/kg wet	3.333		99	40-140			
Di-n-octylphthalate	3.08	0.333	mg/kg wet	3.333		92	40-140			
Fluoranthene	3.08	0.333	mg/kg wet	3.333		92	40-140			
Fluorene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Hexachlorobutadiene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Hexachlorocyclopentadiene	2.70	1.67	mg/kg wet	3.333		81	40-140			
Hexachloroethane	2.47	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	3.20	0.333	mg/kg wet	3.333		96	40-140			
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Nitrobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			
N-Nitrosodimethylamine	2.61	0.333	mg/kg wet	3.333		78	40-140			
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	3.03	0.333	mg/kg wet	3.333		91	40-140			
Pentachlorophenol	2.86	1.67	mg/kg wet	3.333		86	30-130			
Phenanthrene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Phenol	2.56	0.333	mg/kg wet	3.333		77	30-130			
Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Pyridine	2.23	1.67	mg/kg wet	3.333		67	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.35		mg/kg wet	3.333		70	30-130			
Surrogate: 2,4,6-Tribromophenol	3.94		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.74		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Fluorobiphenyl	2.55		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: Nitrobenzene-d5	2.50		mg/kg wet	3.333		75	30-130			
Surrogate: Phenol-d6	3.95		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	2.76		mg/kg wet	3.333		83	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1509427

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

LCS Dup

1,1-Biphenyl	2.63	0.333	mg/kg wet	3.333		79	40-140	6	30	
1,2,4-Trichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	16	30	
1,2-Dichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140	18	30	
1,3-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140	18	30	
1,4-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	18	30	
2,3,4,6-Tetrachlorophenol	2.39	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	2	30	
2,4,6-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	2	30	
2,4-Dichlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130	8	30	
2,4-Dimethylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130	7	30	
2,4-Dinitrophenol	2.43	1.67	mg/kg wet	3.333		73	30-130	0.2	30	
2,4-Dinitrotoluene	3.32	0.333	mg/kg wet	3.333		99	40-140	0.5	30	
2,6-Dinitrotoluene	2.92	0.333	mg/kg wet	3.333		88	40-140	1	30	
2-Chloronaphthalene	2.40	0.333	mg/kg wet	3.333		72	40-140	7	30	
2-Chlorophenol	2.27	0.333	mg/kg wet	3.333		68	30-130	14	30	
2-Methylnaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	11	30	
2-Methylphenol	2.42	0.333	mg/kg wet	3.333		73	30-130	12	30	
2-Nitroaniline	2.46	0.333	mg/kg wet	3.333		74	40-140	3	30	
2-Nitrophenol	2.46	0.333	mg/kg wet	3.333		74	30-130	16	30	
3,3'-Dichlorobenzidine	2.86	0.667	mg/kg wet	3.333		86	40-140	3	30	
3+4-Methylphenol	4.98	0.667	mg/kg wet	6.667		75	30-130	8	30	
3-Nitroaniline	3.24	0.333	mg/kg wet	3.333		97	40-140	0.5	30	
4,6-Dinitro-2-Methylphenol	2.83	1.67	mg/kg wet	3.333		85	30-130	1	30	
4-Bromophenyl-phenylether	3.03	0.333	mg/kg wet	3.333		91	40-140	3	30	
4-Chloro-3-Methylphenol	2.74	0.333	mg/kg wet	3.333		82	30-130	0.09	30	
4-Chloroaniline	2.22	0.667	mg/kg wet	3.333		66	40-140	8	30	
4-Chloro-phenyl-phenyl ether	2.85	0.333	mg/kg wet	3.333		86	40-140	3	30	
4-Nitroaniline	3.57	0.333	mg/kg wet	3.333		107	40-140	4	30	
4-Nitrophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	5	30	
Acenaphthene	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Acenaphthylene	2.67	0.333	mg/kg wet	3.333		80	40-140	3	30	
Acetophenone	2.37	0.667	mg/kg wet	3.333		71	40-140	14	30	
Aniline	2.06	0.667	mg/kg wet	3.333		62	40-140	11	30	
Anthracene	3.14	0.333	mg/kg wet	3.333		94	40-140	0.1	30	
Azobenzene	3.02	0.333	mg/kg wet	3.333		91	40-140	1	30	
Benzo(a)anthracene	3.02	0.333	mg/kg wet	3.333		91	40-140	2	30	
Benzo(a)pyrene	3.16	0.167	mg/kg wet	3.333		95	40-140	2	30	
Benzo(b)fluoranthene	3.19	0.333	mg/kg wet	3.333		96	40-140	3	30	
Benzo(g,h,i)perylene	3.19	0.333	mg/kg wet	3.333		96	40-140	0.4	30	
Benzo(k)fluoranthene	3.16	0.333	mg/kg wet	3.333		95	40-140	3	30	
Benzoic Acid	2.77	1.67	mg/kg wet	3.333		83	40-140	2	30	
Benzyl Alcohol	2.21	0.333	mg/kg wet	3.333		66	40-140	10	30	
bis(2-Chloroethoxy)methane	2.46	0.333	mg/kg wet	3.333		74	40-140	13	30	
bis(2-Chloroethyl)ether	2.48	0.333	mg/kg wet	3.333		74	40-140	17	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI51614 - 3546

bis(2-chloroisopropyl)Ether	2.19	0.333	mg/kg wet	3.333		66	40-140	17	30	
bis(2-Ethylhexyl)phthalate	3.08	0.333	mg/kg wet	3.333		92	40-140	3	30	
Butylbenzylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	2	30	
Carbazole	3.26	0.333	mg/kg wet	3.333		98	40-140	1	30	
Chrysene	3.10	0.167	mg/kg wet	3.333		93	40-140	1	30	
Dibenzo(a,h)Anthracene	3.23	0.167	mg/kg wet	3.333		97	40-140	0.7	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		80	40-140	3	30	
Diethylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	3	30	
Dimethylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140	1	30	
Di-n-butylphthalate	3.24	0.333	mg/kg wet	3.333		97	40-140	1	30	
Di-n-octylphthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	2	30	
Fluoranthene	3.10	0.333	mg/kg wet	3.333		93	40-140	0.7	30	
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140	1	30	
Hexachlorobenzene	2.84	0.167	mg/kg wet	3.333		85	40-140	1	30	
Hexachlorobutadiene	2.15	0.333	mg/kg wet	3.333		65	40-140	17	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	13	30	
Hexachloroethane	2.06	0.333	mg/kg wet	3.333		62	40-140	18	30	
Indeno(1,2,3-cd)Pyrene	3.17	0.333	mg/kg wet	3.333		95	40-140	1	30	
Isophorone	2.44	0.333	mg/kg wet	3.333		73	40-140	9	30	
Naphthalene	2.27	0.333	mg/kg wet	3.333		68	40-140	14	30	
Nitrobenzene	2.29	0.333	mg/kg wet	3.333		69	40-140	14	30	
N-Nitrosodimethylamine	2.19	0.333	mg/kg wet	3.333		66	40-140	17	30	
N-Nitroso-Di-n-Propylamine	2.34	0.333	mg/kg wet	3.333		70	40-140	12	30	
N-nitrosodiphenylamine	3.01	0.333	mg/kg wet	3.333		90	40-140	0.8	30	
Pentachlorophenol	2.85	1.67	mg/kg wet	3.333		86	30-130	0.3	30	
Phenanthrene	3.05	0.333	mg/kg wet	3.333		91	40-140	0.5	30	
Phenol	2.28	0.333	mg/kg wet	3.333		68	30-130	12	30	
Pyrene	3.04	0.333	mg/kg wet	3.333		91	40-140	2	30	
Pyridine	1.86	1.67	mg/kg wet	3.333		56	40-140	18	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.94		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.31		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.11		mg/kg wet	3.333		63	30-130			
Surrogate: Phenol-d6	3.41		mg/kg wet	5.000		68	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		79	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

Notes and Definitions

- Z-10 Soil pH measured in water at 21 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509427

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15090427
 Date Project Due: 9/21/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- 1. Air Bill Manifest Present? * No
- Air No.:
- 2. Were Custody Seals Present? No
- 3. Were Custody Seals Intact? N/A
- 4. Is Radiation count < 100 CPM? Yes
- 5. Is a cooler present? Yes
- Cooler Temp: 23.1
- Iced With: Ice
- 6. Was COC included with samples? Yes
- 7. Was COC signed and dated by client? Yes
- 8. Does the COC match the sample Yes
- 9. Is COC complete and correct? Yes

- 10. Are the samples properly preserved? Yes
- 11. Proper sample containers used? Yes
- 12. Any air bubbles in the VOA vials? N/A
- 13. Holding times exceeded? No
- 14. Sufficient sample volumes? Yes
- 15. Any Subcontracting needed? No
- 16. Are ESS labels on correct containers? Yes No
- 17. Were samples received intact? Yes No
- ESS Sample IDs: _____
- Sub Lab: _____
- Analysis: _____
- TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.
LL vials frozen @ 1840 JE 9/16/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature] Date/Time: 9/16/15 1657
 Reviewed By: [Signature] Date/Time: 9/16/15 1835

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

CHAIN OF CUSTODY

Turn Time: 2-3 Days
 Reporting Limits: RI DEM RDEC
 ESS Lab #: 1509427

Regulatory State: Rhode Island
 Is this project for any of the following?
 CT RCP MA MCP RGP DOD

Project#: 74-15-0002.134 Project Name: Textron Providence
 Address: 500 Harrison Avenue, Suite 4R PO #
 City: Boston State: MA Zip Code: 02118 Email Address: pleofanti@charter.us

Company Name: Charter Environmental
 Contact Person: Paul J. Leofanti, Jr.

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis										
						PH: Corrosivity 9045	VOC	VOC Low Level	SVOC	RCRA 8	TPH					
1	9/16/15	1558	Grab	Soil	Lopes 10% +sand 3	X	X	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 J V V J J J J
 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 7 10 10 10
 Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAc, NaOH, 9-NH4Cl, 10-Other* 1 1 6 10 1 1 1

Laboratory Use Only
 Cooler Present: YES Drop Off
 Seals Intact: NO Pickup
 Cooler Temperature: 33.1 34.4 9/16/15 Technician Hours →
 Received by: (Signature, Date & Time) [Signature] 9/16/15
 Relinquished by: (Signature, Date & Time) [Signature] 9/16/15

Sampled by: M. Polisky-Thielsch
 Comments: Please specify "Other" preservative and containers types in this space
 Please CC: mpolsky@thielsch.com
 Number of Containers: 1 1 1 2 1



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1509625

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 3:14 pm, Sep 28, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

SAMPLE RECEIPT

The following samples were received on September 23, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on September 23, 2015 at 16:53.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509625-01	Lopes 10% + Sand 4	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI52424-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (131% @ 70-130%)

8270D Semi-Volatile Organic Compounds

CYI0253-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (89% @ 80-120%), bis(2-Ethylhexyl)phthalate (98% @ 80-120%)
CYI0253-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzoic Acid (27% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

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	3.76 (2.69)		6010C		1	KJK	09/23/15 21:50	2.1	100	CI52330
Barium	19.7 (2.69)		6010C		1	KJK	09/23/15 21:50	2.1	100	CI52330
Cadmium	ND (0.54)		6010C		1	KJK	09/23/15 21:50	2.1	100	CI52330
Chromium	6.49 (1.08)		6010C		1	KJK	09/23/15 21:50	2.1	100	CI52330
Lead	25.6 (5.38)		6010C		1	KJK	09/23/15 21:50	2.1	100	CI52330
Mercury	0.049 (0.035)		7471B		1	PJP	09/24/15 12:21	0.64	40	CI52329
Selenium	ND (10.8)		6010C		2	KJK	09/24/15 13:43	2.1	100	CI52330
Silver	ND (0.54)		6010C		1	KJK	09/23/15 21:50	2.1	100	CI52330



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
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 (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1,4-Dioxane	ND (0.0869)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
1-Chlorohexane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
2-Butanone	ND (0.0434)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
2-Chlorotoluene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
2-Hexanone	ND (0.0434)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
4-Chlorotoluene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
4-Methyl-2-Pentanone	ND (0.0434)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Acetone	ND (0.0434)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Benzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Bromobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
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 (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Bromodichloromethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Bromoform	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Bromomethane	ND (0.0087)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Carbon Disulfide	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Chlorobenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Chloroethane	ND (0.0087)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Chloroform	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Chloromethane	ND (0.0087)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Dibromochloromethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Dibromomethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Diethyl Ether	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Di-isopropyl ether	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Ethylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Isopropylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Methylene Chloride	ND (0.0217)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Naphthalene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
n-Butylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
n-Propylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
sec-Butylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Styrene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
tert-Butylbenzene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Tetrachloroethene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Tetrahydrofuran	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes 10% + Sand 4
 Date Sampled: 09/23/15 15:15
 Percent Solids: 89
 Initial Volume: 6.5
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1509625
 ESS Laboratory Sample ID: 1509625-01
 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 (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Trichloroethene	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Vinyl Acetate	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Vinyl Chloride	ND (0.0087)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Xylene O	ND (0.0043)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Xylene P,M	ND (0.0087)		8260B Low		1	09/24/15 14:00	CYI0270	CI52424
Xylenes (Total)	ND (0.0087)		8260B Low		1	09/24/15 14:00		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>80 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>93 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/24/15 12:30

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	221 (44.1)		8100M		1	09/24/15 20:37	CY10276	CI52416
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		85 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/23/15 17:58

8270D Semi-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-Biphenyl	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
1,2,4-Trichlorobenzene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
1,2-Dichlorobenzene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
1,3-Dichlorobenzene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
1,4-Dichlorobenzene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,3,4,6-Tetrachlorophenol	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,4,5-Trichlorophenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,4,6-Trichlorophenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,4-Dichlorophenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,4-Dimethylphenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,4-Dinitrophenol	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,4-Dinitrotoluene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2,6-Dinitrotoluene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2-Chloronaphthalene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2-Chlorophenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2-Methylnaphthalene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2-Methylphenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2-Nitroaniline	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
2-Nitrophenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
3,3'-Dichlorobenzidine	ND (0.796)		8270D		1	09/23/15 23:47	CYI0253	CI52319
3+4-Methylphenol	ND (0.796)		8270D		1	09/23/15 23:47	CYI0253	CI52319
3-Nitroaniline	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4,6-Dinitro-2-Methylphenol	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4-Bromophenyl-phenylether	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4-Chloro-3-Methylphenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4-Chloroaniline	ND (0.796)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4-Chloro-phenyl-phenyl ether	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4-Nitroaniline	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
4-Nitrophenol	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Acenaphthene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Acenaphthylene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Acetophenone	ND (0.796)		8270D		1	09/23/15 23:47	CYI0253	CI52319



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/23/15 17:58

8270D Semi-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>
Aniline	ND (0.796)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Anthracene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Azobenzene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzo(a)anthracene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzo(a)pyrene	0.255 (0.199)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzo(b)fluoranthene	0.405 (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzo(g,h,i)perylene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzo(k)fluoranthene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzoic Acid	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Benzyl Alcohol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
bis(2-Chloroethoxy)methane	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
bis(2-Chloroethyl)ether	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
bis(2-chloroisopropyl)Ether	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
bis(2-Ethylhexyl)phthalate	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Butylbenzylphthalate	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Carbazole	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Chrysene	0.316 (0.199)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Dibenzo(a,h)Anthracene	ND (0.199)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Dibenzofuran	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Diethylphthalate	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Dimethylphthalate	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Di-n-butylphthalate	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Di-n-octylphthalate	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Fluoranthene	0.437 (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Fluorene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Hexachlorobenzene	ND (0.199)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Hexachlorobutadiene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Hexachlorocyclopentadiene	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Hexachloroethane	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Indeno(1,2,3-cd)Pyrene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Isophorone	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Naphthalene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/23/15 17:58

8270D Semi-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>
Nitrobenzene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
N-Nitrosodimethylamine	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
N-Nitroso-Di-n-Propylamine	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
N-nitrosodiphenylamine	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Pentachlorophenol	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Phenanthrene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Phenol	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Pyrene	ND (0.397)		8270D		1	09/23/15 23:47	CYI0253	CI52319
Pyridine	ND (1.99)		8270D		1	09/23/15 23:47	CYI0253	CI52319

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	91 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	64 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	71 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	57 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	65 %		30-130
<i>Surrogate: Phenol-d6</i>	59 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	72 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 4
Date Sampled: 09/23/15 15:15
Percent Solids: 89

ESS Laboratory Work Order: 1509625
ESS Laboratory Sample ID: 1509625-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.10 (N/A)		9045		1	EEM	09/23/15 17:50	S.U.	CI52339
Corrosivity (pH) Sample Temp	Soil pH measured in water at 21.7 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52329 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	31.7	3.88	mg/kg wet	24.90	127	51-149
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LCS Dup

Mercury	33.4	3.41	mg/kg wet	24.90	134	51-149	5	20
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Batch CI52330 - 3005A

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	108	9.80	mg/kg wet	133.0	82	80-120
Barium	180	9.80	mg/kg wet	229.0	79	73-126
Cadmium	94.7	1.96	mg/kg wet	123.0	77	73-127
Chromium	51.7	3.92	mg/kg wet	63.20	82	80-120
Lead	91.0	19.6	mg/kg wet	108.0	84	80-120
Selenium	60.9	19.6	mg/kg wet	81.40	75	64-136
Silver	63.1	1.96	mg/kg wet	74.80	84	80-120

LCS Dup

Arsenic	106	9.80	mg/kg wet	133.0	80	80-120	2	20
Barium	184	9.80	mg/kg wet	229.0	80	73-126	2	20
Cadmium	92.2	1.96	mg/kg wet	123.0	75	73-127	3	20
Chromium	50.4	3.92	mg/kg wet	63.20	80	80-120	2	20
Lead	87.9	19.6	mg/kg wet	108.0	81	80-120	3	20
Selenium	61.8	19.6	mg/kg wet	81.40	76	64-136	2	20
Silver	62.1	1.96	mg/kg wet	74.80	83	80-120	2	20

5035/8260B Volatile Organic Compounds / Low Level

Batch CI52424 - 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: Charter Environmental, Inc.
 Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52424 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52424 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0465		mg/kg wet	0.05000		93	70-130			
Surrogate: 4-Bromofluorobenzene	0.0412		mg/kg wet	0.05000		82	70-130			
Surrogate: Dibromofluoromethane	0.0439		mg/kg wet	0.05000		88	70-130			
Surrogate: Toluene-d8	0.0451		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0427	0.0050	mg/kg wet	0.05000		85	70-130			
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2-Trichloroethane	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,1-Dichloroethane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
1,1-Dichloroethene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
1,1-Dichloropropene	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
1,2,3-Trichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trichlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trimethylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dibromo-3-Chloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,3-Dichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52424 - 5035

1,4-Dichlorobenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dioxane	0.962	0.100	mg/kg wet	1.000		96	70-130			
1-Chlorohexane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
2,2-Dichloropropane	0.0410	0.0050	mg/kg wet	0.05000		82	70-130			
2-Butanone	0.226	0.0500	mg/kg wet	0.2500		90	70-130			
2-Chlorotoluene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
2-Hexanone	0.232	0.0500	mg/kg wet	0.2500		93	70-130			
4-Chlorotoluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
4-Isopropyltoluene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
4-Methyl-2-Pentanone	0.221	0.0500	mg/kg wet	0.2500		88	70-130			
Acetone	0.251	0.0500	mg/kg wet	0.2500		100	70-130			
Benzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Bromobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Bromodichloromethane	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromomethane	0.0417	0.0100	mg/kg wet	0.05000		83	70-130			
Carbon Disulfide	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Carbon Tetrachloride	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
Chlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Chloroethane	0.0415	0.0100	mg/kg wet	0.05000		83	70-130			
Chloroform	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Chloromethane	0.0389	0.0100	mg/kg wet	0.05000		78	70-130			
cis-1,2-Dichloroethene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
cis-1,3-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
Dibromochloromethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dibromomethane	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Dichlorodifluoromethane	0.0444	0.0100	mg/kg wet	0.05000		89	70-130			
Diethyl Ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Di-isopropyl ether	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Ethyl tertiary-butyl ether	0.0407	0.0050	mg/kg wet	0.05000		81	70-130			
Ethylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Hexachlorobutadiene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Isopropylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Methylene Chloride	0.0496	0.0250	mg/kg wet	0.05000		99	70-130			
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
n-Butylbenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
n-Propylbenzene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
sec-Butylbenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Styrene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
tert-Butylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Tertiary-amyl methyl ether	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Tetrachloroethene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Tetrahydrofuran	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52424 - 5035

Toluene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
trans-1,2-Dichloroethene	0.0427	0.0050	mg/kg wet	0.05000		85	70-130			
trans-1,3-Dichloropropene	0.0409	0.0050	mg/kg wet	0.05000		82	70-130			
Trichloroethene	0.0407	0.0050	mg/kg wet	0.05000		81	70-130			
Trichlorofluoromethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Vinyl Acetate	0.0595	0.0050	mg/kg wet	0.05000		119	70-130			
Vinyl Chloride	0.0406	0.0100	mg/kg wet	0.05000		81	70-130			
Xylene O	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Xylene P,M	0.0914	0.0100	mg/kg wet	0.1000		91	70-130			
Xylenes (Total)	0.138	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0470		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0446		mg/kg wet	0.05000		89	70-130			
Surrogate: Dibromofluoromethane	0.0471		mg/kg wet	0.05000		94	70-130			
Surrogate: Toluene-d8	0.0431		mg/kg wet	0.05000		86	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.7	25	
1,1,1-Trichloroethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.04	25	
1,1,2-Trichloroethane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	4	25	
1,1-Dichloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
1,1-Dichloroethene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
1,1-Dichloropropene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	8	25	
1,2,3-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,2,3-Trichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
1,2,4-Trichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
1,2,4-Trimethylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,2-Dibromo-3-Chloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
1,2-Dibromoethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
1,2-Dichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.1	25	
1,2-Dichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
1,2-Dichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,3-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.7	25	
1,3-Dichloropropane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.6	25	
1,4-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130	6	20	
1-Chlorohexane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
2,2-Dichloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	6	25	
2-Butanone	0.240	0.0500	mg/kg wet	0.2500		96	70-130	6	25	
2-Chlorotoluene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
2-Hexanone	0.226	0.0500	mg/kg wet	0.2500		90	70-130	3	25	
4-Chlorotoluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
4-Isopropyltoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
4-Methyl-2-Pentanone	0.220	0.0500	mg/kg wet	0.2500		88	70-130	0.4	25	
Acetone	0.258	0.0500	mg/kg wet	0.2500		103	70-130	3	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CI52424 - 5035										
Benzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	6	25	
Bromobenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	0.5	25	
Bromochloromethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Bromodichloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Bromoform	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Bromomethane	0.0444	0.0100	mg/kg wet	0.05000		89	70-130	6	25	
Carbon Disulfide	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
Carbon Tetrachloride	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Chlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Chloroethane	0.0465	0.0100	mg/kg wet	0.05000		93	70-130	11	25	
Chloroform	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
Chloromethane	0.0434	0.0100	mg/kg wet	0.05000		87	70-130	11	25	
cis-1,2-Dichloroethene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	7	25	
cis-1,3-Dichloropropene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Dibromochloromethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	0.08	25	
Dibromomethane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
Dichlorodifluoromethane	0.0453	0.0100	mg/kg wet	0.05000		91	70-130	2	25	
Diethyl Ether	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
Di-isopropyl ether	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	11	25	
Ethyl tertiary-butyl ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	8	25	
Ethylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Hexachlorobutadiene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
Methyl tert-Butyl Ether	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	4	25	
Methylene Chloride	0.0528	0.0250	mg/kg wet	0.05000		106	70-130	6	25	
Naphthalene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	3	25	
n-Butylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
n-Propylbenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
sec-Butylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	0.6	25	
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Tertiary-amyl methyl ether	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
Tetrachloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	0.5	25	
Tetrahydrofuran	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
Toluene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	4	25	
trans-1,2-Dichloroethene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
trans-1,3-Dichloropropene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	6	25	
Trichloroethene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	5	25	
Trichlorofluoromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
Vinyl Acetate	0.0655	0.0050	mg/kg wet	0.05000		131	70-130	10	25	B+
Vinyl Chloride	0.0441	0.0100	mg/kg wet	0.05000		88	70-130	8	25	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Xylene P,M	0.0918	0.0100	mg/kg wet	0.1000		92	70-130	0.5	25	
Xylenes (Total)	0.138	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0491		mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52424 - 5035

Surrogate: 4-Bromofluorobenzene	0.0448		mg/kg wet	0.05000		90	70-130			
Surrogate: Dibromofluoromethane	0.0489		mg/kg wet	0.05000		98	70-130			
Surrogate: Toluene-d8	0.0434		mg/kg wet	0.05000		87	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52416 - 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	4.83		mg/kg wet	5.000		97	40-140			
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LCS

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Docosane (C22)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		82	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Hexacosane (C26)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	1.9	0.2	mg/kg wet	2.500		76	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Tetracosane (C24)	1.9	0.2	mg/kg wet	2.500		74	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Total Petroleum Hydrocarbons	27.2	37.5	mg/kg wet	35.00		78	40-140			
Triacontane (C30)	1.9	0.2	mg/kg wet	2.500		75	40-140			

Surrogate: O-Terphenyl	3.98		mg/kg wet	5.000		80	40-140			
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LCS Dup

Decane (C10)	2.1	0.2	mg/kg wet	2.500		85	40-140	16	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		96	40-140	17	25	
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		93	40-140	12	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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 CI52416 - 3546

Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		95	40-140	13	25	
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		94	40-140	18	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		98	40-140	12	25	
Nonadecane (C19)	2.7	0.2	mg/kg wet	2.500		110	40-140	18	25	
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		76	30-140	14	25	
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		90	40-140	18	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		98	40-140	14	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140	17	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		98	40-140	14	25	
Total Petroleum Hydrocarbons	32.7	37.5	mg/kg wet	35.00		93	40-140	18	25	
Triacotane (C30)	2.2	0.2	mg/kg wet	2.500		89	40-140	17	25	

Surrogate: O-Terphenyl 4.50 mg/kg wet 5.000 90 40-140

8270D Semi-Volatile Organic Compounds

Batch CI52319 - 3546

Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52319 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52319 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.44		mg/kg wet	3.333		73	30-130			
Surrogate: 2,4,6-Tribromophenol	4.25		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Chlorophenol-d4	3.70		mg/kg wet	5.000		74	30-130			
Surrogate: 2-Fluorobiphenyl	2.45		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: Nitrobenzene-d5	2.35		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.77		mg/kg wet	5.000		75	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			

LCS

1,1-Biphenyl	1.98	0.333	mg/kg wet	3.333		60	40-140			
1,2,4-Trichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140			
1,2-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140			
1,3-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		63	40-140			
1,4-Dichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140			
2,3,4,6-Tetrachlorophenol	2.42	1.67	mg/kg wet	3.333		73	30-130			
2,4,5-Trichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2,4,6-Trichlorophenol	2.44	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dichlorophenol	2.24	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dimethylphenol	2.18	0.333	mg/kg wet	3.333		65	30-130			
2,4-Dinitrophenol	2.16	1.67	mg/kg wet	3.333		65	30-130			
2,4-Dinitrotoluene	2.53	0.333	mg/kg wet	3.333		76	40-140			
2,6-Dinitrotoluene	2.50	0.333	mg/kg wet	3.333		75	40-140			
2-Chloronaphthalene	1.84	0.333	mg/kg wet	3.333		55	40-140			
2-Chlorophenol	2.05	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.02	0.333	mg/kg wet	3.333		61	40-140			
2-Methylphenol	2.03	0.333	mg/kg wet	3.333		61	30-130			
2-Nitroaniline	2.03	0.333	mg/kg wet	3.333		61	40-140			
2-Nitrophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
3,3'-Dichlorobenzidine	2.00	0.667	mg/kg wet	3.333		60	40-140			
3+4-Methylphenol	4.04	0.667	mg/kg wet	6.667		61	30-130			
3-Nitroaniline	2.40	0.333	mg/kg wet	3.333		72	40-140			
4,6-Dinitro-2-Methylphenol	2.31	1.67	mg/kg wet	3.333		69	30-130			
4-Bromophenyl-phenylether	2.54	0.333	mg/kg wet	3.333		76	40-140			
4-Chloro-3-Methylphenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
4-Chloroaniline	1.84	0.667	mg/kg wet	3.333		55	40-140			
4-Chloro-phenyl-phenyl ether	2.19	0.333	mg/kg wet	3.333		66	40-140			
4-Nitroaniline	2.28	0.333	mg/kg wet	3.333		68	40-140			
4-Nitrophenol	2.12	1.67	mg/kg wet	3.333		64	30-130			
Acenaphthene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Acenaphthylene	2.27	0.333	mg/kg wet	3.333		68	40-140			
Acetophenone	2.05	0.667	mg/kg wet	3.333		61	40-140			
Aniline	1.84	0.667	mg/kg wet	3.333		55	40-140			
Anthracene	2.45	0.333	mg/kg wet	3.333		74	40-140			
Azobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
Benzo(a)anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52319 - 3546

Benzo(a)pyrene	2.71	0.167	mg/kg wet	3.333		81	40-140			
Benzo(b)fluoranthene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Benzo(g,h,i)perylene	2.59	0.333	mg/kg wet	3.333		78	40-140			
Benzo(k)fluoranthene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Benzoic Acid	2.04	1.67	mg/kg wet	3.333		61	40-140			
Benzyl Alcohol	1.69	0.333	mg/kg wet	3.333		51	40-140			
bis(2-Chloroethoxy)methane	2.13	0.333	mg/kg wet	3.333		64	40-140			
bis(2-Chloroethyl)ether	2.07	0.333	mg/kg wet	3.333		62	40-140			
bis(2-chloroisopropyl)Ether	2.04	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Ethylhexyl)phthalate	2.55	0.333	mg/kg wet	3.333		76	40-140			
Butylbenzylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140			
Carbazole	2.41	0.333	mg/kg wet	3.333		72	40-140			
Chrysene	2.64	0.167	mg/kg wet	3.333		79	40-140			
Dibenzo(a,h)Anthracene	2.71	0.167	mg/kg wet	3.333		81	40-140			
Dibenzofuran	2.13	0.333	mg/kg wet	3.333		64	40-140			
Diethylphthalate	2.46	0.333	mg/kg wet	3.333		74	40-140			
Dimethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140			
Di-n-butylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140			
Di-n-octylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140			
Fluoranthene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Fluorene	2.27	0.333	mg/kg wet	3.333		68	40-140			
Hexachlorobenzene	2.47	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Hexachlorocyclopentadiene	2.19	1.67	mg/kg wet	3.333		66	40-140			
Hexachloroethane	1.88	0.333	mg/kg wet	3.333		56	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.11	0.333	mg/kg wet	3.333		63	40-140			
Naphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140			
Nitrobenzene	2.01	0.333	mg/kg wet	3.333		60	40-140			
N-Nitrosodimethylamine	2.02	0.333	mg/kg wet	3.333		61	40-140			
N-Nitroso-Di-n-Propylamine	1.89	0.333	mg/kg wet	3.333		57	40-140			
N-nitrosodiphenylamine	2.37	0.333	mg/kg wet	3.333		71	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.33	0.333	mg/kg wet	3.333		70	40-140			
Phenol	2.59	0.333	mg/kg wet	3.333		78	30-130			
Pyrene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Pyridine	1.72	1.67	mg/kg wet	3.333		52	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.19		mg/kg wet	3.333		66	30-130			
Surrogate: 2,4,6-Tribromophenol	4.15		mg/kg wet	5.000		83	30-130			
Surrogate: 2-Chlorophenol-d4	3.17		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.19		mg/kg wet	3.333		66	30-130			
Surrogate: 2-Fluorophenol	3.37		mg/kg wet	5.000		67	30-130			
Surrogate: Nitrobenzene-d5	2.15		mg/kg wet	3.333		65	30-130			
Surrogate: Phenol-d6	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: p-Terphenyl-d14	3.14		mg/kg wet	3.333		94	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52319 - 3546

LCS Dup

1,1-Biphenyl	1.94	0.333	mg/kg wet	3.333		58	40-140	2	30	
1,2,4-Trichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	6	30	
1,2-Dichlorobenzene	1.88	0.333	mg/kg wet	3.333		56	40-140	10	30	
1,3-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	7	30	
1,4-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	8	30	
2,3,4,6-Tetrachlorophenol	2.33	1.67	mg/kg wet	3.333		70	30-130	4	30	
2,4,5-Trichlorophenol	2.34	0.333	mg/kg wet	3.333		70	30-130	1	30	
2,4,6-Trichlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130	5	30	
2,4-Dichlorophenol	2.24	0.333	mg/kg wet	3.333		67	30-130	0.4	30	
2,4-Dimethylphenol	2.13	0.333	mg/kg wet	3.333		64	30-130	2	30	
2,4-Dinitrophenol	1.93	1.67	mg/kg wet	3.333		58	30-130	11	30	
2,4-Dinitrotoluene	2.29	0.333	mg/kg wet	3.333		69	40-140	10	30	
2,6-Dinitrotoluene	2.33	0.333	mg/kg wet	3.333		70	40-140	7	30	
2-Chloronaphthalene	1.76	0.333	mg/kg wet	3.333		53	40-140	4	30	
2-Chlorophenol	1.92	0.333	mg/kg wet	3.333		58	30-130	6	30	
2-Methylnaphthalene	1.93	0.333	mg/kg wet	3.333		58	40-140	4	30	
2-Methylphenol	1.98	0.333	mg/kg wet	3.333		59	30-130	2	30	
2-Nitroaniline	2.00	0.333	mg/kg wet	3.333		60	40-140	1	30	
2-Nitrophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	4	30	
3,3'-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140	17	30	
3+4-Methylphenol	4.62	0.667	mg/kg wet	6.667		69	30-130	13	30	
3-Nitroaniline	2.38	0.333	mg/kg wet	3.333		71	40-140	0.9	30	
4,6-Dinitro-2-Methylphenol	2.44	1.67	mg/kg wet	3.333		73	30-130	5	30	
4-Bromophenyl-phenylether	2.60	0.333	mg/kg wet	3.333		78	40-140	2	30	
4-Chloro-3-Methylphenol	2.29	0.333	mg/kg wet	3.333		69	30-130	3	30	
4-Chloroaniline	2.00	0.667	mg/kg wet	3.333		60	40-140	8	30	
4-Chloro-phenyl-phenyl ether	2.13	0.333	mg/kg wet	3.333		64	40-140	3	30	
4-Nitroaniline	2.32	0.333	mg/kg wet	3.333		70	40-140	2	30	
4-Nitrophenol	1.97	1.67	mg/kg wet	3.333		59	30-130	7	30	
Acenaphthene	2.18	0.333	mg/kg wet	3.333		65	40-140	3	30	
Acenaphthylene	2.23	0.333	mg/kg wet	3.333		67	40-140	2	30	
Acetophenone	1.97	0.667	mg/kg wet	3.333		59	40-140	4	30	
Aniline	1.84	0.667	mg/kg wet	3.333		55	40-140	0.2	30	
Anthracene	2.39	0.333	mg/kg wet	3.333		72	40-140	3	30	
Azobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140	0.1	30	
Benzo(a)anthracene	2.68	0.333	mg/kg wet	3.333		80	40-140	2	30	
Benzo(a)pyrene	2.63	0.167	mg/kg wet	3.333		79	40-140	3	30	
Benzo(b)fluoranthene	2.48	0.333	mg/kg wet	3.333		74	40-140	5	30	
Benzo(g,h,i)perylene	2.57	0.333	mg/kg wet	3.333		77	40-140	0.7	30	
Benzo(k)fluoranthene	2.61	0.333	mg/kg wet	3.333		78	40-140	0.6	30	
Benzoic Acid	1.60	1.67	mg/kg wet	3.333		48	40-140	24	30	
Benzyl Alcohol	1.92	0.333	mg/kg wet	3.333		58	40-140	13	30	
bis(2-Chloroethoxy)methane	2.06	0.333	mg/kg wet	3.333		62	40-140	4	30	
bis(2-Chloroethyl)ether	1.94	0.333	mg/kg wet	3.333		58	40-140	7	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52319 - 3546

bis(2-chloroisopropyl)Ether	1.96	0.333	mg/kg wet	3.333		59	40-140	4	30	
bis(2-Ethylhexyl)phthalate	2.52	0.333	mg/kg wet	3.333		75	40-140	1	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140	1	30	
Carbazole	2.38	0.333	mg/kg wet	3.333		71	40-140	1	30	
Chrysene	2.60	0.167	mg/kg wet	3.333		78	40-140	1	30	
Dibenzo(a,h)Anthracene	2.66	0.167	mg/kg wet	3.333		80	40-140	2	30	
Dibenzofuran	2.07	0.333	mg/kg wet	3.333		62	40-140	3	30	
Diethylphthalate	2.22	0.333	mg/kg wet	3.333		67	40-140	10	30	
Dimethylphthalate	2.49	0.333	mg/kg wet	3.333		75	40-140	3	30	
Di-n-butylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140	0.4	30	
Di-n-octylphthalate	2.59	0.333	mg/kg wet	3.333		78	40-140	0.8	30	
Fluoranthene	2.60	0.333	mg/kg wet	3.333		78	40-140	2	30	
Fluorene	2.15	0.333	mg/kg wet	3.333		64	40-140	5	30	
Hexachlorobenzene	2.46	0.167	mg/kg wet	3.333		74	40-140	0.2	30	
Hexachlorobutadiene	2.08	0.333	mg/kg wet	3.333		63	40-140	7	30	
Hexachlorocyclopentadiene	2.09	1.67	mg/kg wet	3.333		63	40-140	5	30	
Hexachloroethane	1.73	0.333	mg/kg wet	3.333		52	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	2.71	0.333	mg/kg wet	3.333		81	40-140	1	30	
Isophorone	2.05	0.333	mg/kg wet	3.333		61	40-140	3	30	
Naphthalene	1.95	0.333	mg/kg wet	3.333		58	40-140	7	30	
Nitrobenzene	1.87	0.333	mg/kg wet	3.333		56	40-140	7	30	
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	11	30	
N-Nitroso-Di-n-Propylamine	1.77	0.333	mg/kg wet	3.333		53	40-140	7	30	
N-nitrosodiphenylamine	2.38	0.333	mg/kg wet	3.333		71	40-140	0.7	30	
Pentachlorophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	2	30	
Phenanthrene	2.29	0.333	mg/kg wet	3.333		69	40-140	2	30	
Phenol	2.37	0.333	mg/kg wet	3.333		71	30-130	9	30	
Pyrene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pyridine	1.55	1.67	mg/kg wet	3.333		47	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.94		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	4.14		mg/kg wet	5.000		83	30-130			
Surrogate: 2-Chlorophenol-d4	2.96		mg/kg wet	5.000		59	30-130			
Surrogate: 2-Fluorobiphenyl	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: 2-Fluorophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.00		mg/kg wet	3.333		60	30-130			
Surrogate: Phenol-d6	3.27		mg/kg wet	5.000		65	30-130			
Surrogate: p-Terphenyl-d14	3.11		mg/kg wet	3.333		93	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

Notes and Definitions

- Z-10 Soil pH measured in water at 21.7 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509625

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
Client Project ID: _____
Shipped/Delivered Via: Other

ESS Project ID: 15090625
Date Project Due: 9/28/15
Days For Project: 3 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

* No

10. Are the samples properly preserved?

Yes

Air No.:

11. Proper sample containers used?

Yes

2. Were Custody Seals Present?

No

12. Any air bubbles in the VOA vials?

N/A

3. Were Custody Seals Intact?

N/A

13. Holding times exceeded?

No

4. Is Radiation count < 100 CPM?

Yes

14. Sufficient sample volumes?

Yes

5. Is a cooler present?

Yes

15. Any Subcontracting needed?

No

Cooler Temp: 20.6

16. Are ESS labels on correct containers? Yes | No

Iced With: Ice

17. Were samples received intact? Yes | No

6. Was COC included with samples?

Yes

ESS Sample IDs: _____

7. Was COC signed and dated by client?

Yes

Sub Lab: _____

8. Does the COC match the sample

Yes

Analysis: _____

9. Is COC complete and correct?

Yes

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

LL vials frozen @ 1653 JL 9/23/15

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature]

Date/Time: 9/23/15 1610

Reviewed By: [Signature]

Date/Time: 9/23/15 1653

ESS Laboratory

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

CHAIN OF CUSTODY

Turn Time 3 Days
Regulatory State Rhode Island
Is this project for any of the following?
OCT RCP O MA MCP O RGP O DOD

Project # 74-15-0002.134
Project Name Textron Providence

Address 500 Harrison Avenue, Suite 4R

City Boston State MA
Zip Code 02118 PO #

Telephone Number (857) 246-6812
FAX Number
Email Address pleofanti@charter.us

Sample ID

Sample Matrix

ESS Lab ID 1 Collection Date 9/23 Collection Time 1515 Sample Type Grab

Sample Matrix Soil

Sample Type Grab

Lopes 10% +sand 4

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubittainer J-Jar O-Other P-Poly S-Sterile V-Vial J J J J
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 7 10 10 10
Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAce, NaOH, 9-NH4Cl, 10-Other 1 1 6 10 1 1 1

Laboratory Use Only

Cooler Present: Yes O Drop Off O Pickup
Seals Intact: 20.6 ° 14 Technician Hours ->

Cooler Temperature: 20.6 ° 14

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time) 9/23/15 1605

Sampled by: M. Polsky-Thielsch

Comments:

Please specify "Other" preservative and containers types in this space

Please CC: mpolsky@thielsch.com

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

ESS Lab # 1509625

Reporting Limits RI DEM RDEC

Electronic Deliverables [X] Data Checker [X] Other (Please Specify ->) [X] Excel

Analysis pH: Corrosivity 9045 [X] VOC [X] VOC Low Level [X] SVOC [X] RCRA 8 [X] TPH [X]

Number of Containers: 1 1 1 2 1



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1509748

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 3:27 pm, Oct 02, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

SAMPLE RECEIPT

The following samples were received on September 29, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on September 29, 2015 at 13:05.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509748-01	Lopes 10% + Sand 6	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI53024-BS1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (145% @ 70-130%)

CI53024-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (148% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYI0333-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

Decane (C10) (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CYI0300-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (101% @ 80-120%), bis(2-Ethylhexyl)phthalate (108% @ 80-120%)

CYI0300-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

Di-n-butylphthalate (21% @ 20%)

CYI0300-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

N-Nitrosodimethylamine (24% @ 20%), Pyridine (27% @ 20%)

CYI0335-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (58% @ 80-120%)

CYI0335-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

bis(2-Chloroethyl)ether (25% @ 20%)

CYI0335-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (24% @ 20%), Benzoic Acid (42% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
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	3.87 (2.37)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830
Barium	16.7 (2.37)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830
Cadmium	ND (0.47)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830
Chromium	6.45 (0.95)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830
Lead	20.4 (4.74)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830
Mercury	ND (0.031)		7471B		1	BJV	09/30/15 11:58	0.67	40	CI52936
Selenium	ND (4.74)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830
Silver	ND (0.47)		6010C		1	KJK	09/29/15 20:48	2.2	100	CI52830



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
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 (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,1,2,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1,4-Dioxane	ND (0.0841)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
1-Chlorohexane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
2-Butanone	ND (0.0421)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
2-Chlorotoluene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
2-Hexanone	ND (0.0421)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
4-Chlorotoluene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
4-Methyl-2-Pentanone	ND (0.0421)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Acetone	ND (0.0421)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Benzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Bromobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
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 (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Bromodichloromethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Bromoform	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Bromomethane	ND (0.0084)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Carbon Disulfide	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Chlorobenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Chloroethane	ND (0.0084)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Chloroform	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Chloromethane	ND (0.0084)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Dibromochloromethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Dibromomethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Diethyl Ether	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Di-isopropyl ether	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Ethylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Isopropylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Methylene Chloride	ND (0.0210)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Naphthalene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
n-Butylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
n-Propylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
sec-Butylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Styrene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
tert-Butylbenzene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Tetrachloroethene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Tetrahydrofuran	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
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 (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Trichloroethene	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Vinyl Acetate	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Vinyl Chloride	ND (0.0084)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Xylene O	ND (0.0042)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Xylene P,M	ND (0.0084)		8260B Low		1	09/30/15 13:03	CYI0339	CI53024
Xylenes (Total)	ND (0.0084)		8260B Low		1	09/30/15 13:03		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>78 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>87 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>97 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/29/15 17:10

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	267 (40.5)		8100M		1	09/30/15 10:29	CY10333	CI52912
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>94 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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-Biphenyl	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
1,2,4-Trichlorobenzene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
1,2-Dichlorobenzene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
1,3-Dichlorobenzene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
1,4-Dichlorobenzene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,3,4,6-Tetrachlorophenol	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,4,5-Trichlorophenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,4,6-Trichlorophenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,4-Dichlorophenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,4-Dimethylphenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,4-Dinitrophenol	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,4-Dinitrotoluene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2,6-Dinitrotoluene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2-Chloronaphthalene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2-Chlorophenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2-Methylnaphthalene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2-Methylphenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2-Nitroaniline	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
2-Nitrophenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
3,3'-Dichlorobenzidine	ND (0.715)		8270D		1	09/30/15 10:06	CYI0335	CI52818
3+4-Methylphenol	ND (0.715)		8270D		1	09/30/15 10:06	CYI0335	CI52818
3-Nitroaniline	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4,6-Dinitro-2-Methylphenol	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4-Bromophenyl-phenylether	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4-Chloro-3-Methylphenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4-Chloroaniline	ND (0.715)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4-Chloro-phenyl-phenyl ether	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4-Nitroaniline	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
4-Nitrophenol	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Acenaphthene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Acenaphthylene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Acetophenone	ND (0.715)		8270D		1	09/30/15 10:06	CYI0335	CI52818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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>
Aniline	ND (0.715)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Anthracene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Azobenzene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzo(a)anthracene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzo(a)pyrene	0.231 (0.179)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzo(b)fluoranthene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzo(g,h,i)perylene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzo(k)fluoranthene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzoic Acid	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Benzyl Alcohol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
bis(2-Chloroethoxy)methane	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
bis(2-Chloroethyl)ether	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
bis(2-chloroisopropyl)Ether	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
bis(2-Ethylhexyl)phthalate	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Butylbenzylphthalate	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Carbazole	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Chrysene	0.293 (0.179)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Dibenzo(a,h)Anthracene	ND (0.179)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Dibenzofuran	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Diethylphthalate	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Dimethylphthalate	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Di-n-butylphthalate	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Di-n-octylphthalate	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Fluoranthene	0.419 (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Fluorene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Hexachlorobenzene	ND (0.179)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Hexachlorobutadiene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Hexachlorocyclopentadiene	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Hexachloroethane	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Indeno(1,2,3-cd)Pyrene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Isophorone	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Naphthalene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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>
Nitrobenzene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
N-Nitrosodimethylamine	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
N-Nitroso-Di-n-Propylamine	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
N-nitrosodiphenylamine	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Pentachlorophenol	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Phenanthrene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Phenol	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Pyrene	ND (0.357)		8270D		1	09/30/15 10:06	CYI0335	CI52818
Pyridine	ND (1.79)		8270D		1	09/30/15 10:06	CYI0335	CI52818

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>39 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>57 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>48 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>50 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>48 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>47 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>55 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>58 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 6
Date Sampled: 09/29/15 09:40
Percent Solids: 96

ESS Laboratory Work Order: 1509748
ESS Laboratory Sample ID: 1509748-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.63 (N/A)		9045		1	JLK	09/29/15 15:25	S.U.	CI52938
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.5 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 CI52830 - 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	134	9.80	mg/kg wet	133.0	101	80-120
Barium	211	9.80	mg/kg wet	229.0	92	80-120
Cadmium	113	1.96	mg/kg wet	123.0	92	80-120
Chromium	62.4	3.92	mg/kg wet	63.20	99	80-120
Lead	106	19.6	mg/kg wet	108.0	98	80-120
Selenium	73.9	19.6	mg/kg wet	81.40	91	80-120
Silver	76.2	1.96	mg/kg wet	74.80	102	80-120

LCS Dup

Arsenic	143	9.80	mg/kg wet	133.0	108	80-120	7	20
Barium	226	9.80	mg/kg wet	229.0	99	80-120	7	20
Cadmium	121	1.96	mg/kg wet	123.0	98	80-120	6	20
Chromium	65.6	3.92	mg/kg wet	63.20	104	80-120	5	20
Lead	116	19.6	mg/kg wet	108.0	107	80-120	9	20
Selenium	74.2	19.6	mg/kg wet	81.40	91	80-120	0.5	20
Silver	81.2	1.96	mg/kg wet	74.80	109	80-120	6	20

Batch CI52936 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	26.5	3.81	mg/kg wet	24.90	106	80-120
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LCS Dup

Mercury	26.3	3.74	mg/kg wet	24.90	106	80-120	0.5	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI53024 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 C153024 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 C153024 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0427		mg/kg wet	0.05000		85	70-130			
Surrogate: Dibromofluoromethane	0.0414		mg/kg wet	0.05000		83	70-130			
Surrogate: Toluene-d8	0.0459		mg/kg wet	0.05000		92	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,1,2,2-Tetrachloroethane	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloropropene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
1,2-Dibromoethane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 C153024 - 5035

1,4-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,4-Dioxane	0.943	0.100	mg/kg wet	1.000		94	70-130			
1-Chlorohexane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2,2-Dichloropropane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
2-Butanone	0.219	0.0500	mg/kg wet	0.2500		88	70-130			
2-Chlorotoluene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
2-Hexanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
4-Isopropyltoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.236	0.0500	mg/kg wet	0.2500		94	70-130			
Acetone	0.233	0.0500	mg/kg wet	0.2500		93	70-130			
Benzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromochloromethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Bromodichloromethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Bromomethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Carbon Disulfide	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Carbon Tetrachloride	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Chlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130			
Chloroform	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Chloromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130			
cis-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Dibromochloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Dichlorodifluoromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
Ethyl tertiary-butyl ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Ethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Hexachlorobutadiene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Methylene Chloride	0.0526	0.0250	mg/kg wet	0.05000		105	70-130			
Naphthalene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
n-Propylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	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	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrachloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 C153024 - 5035

Toluene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
trans-1,3-Dichloropropene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Trichloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Trichlorofluoromethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Vinyl Acetate	0.0726	0.0050	mg/kg wet	0.05000		145	70-130			B+
Vinyl Chloride	0.0492	0.0100	mg/kg wet	0.05000		98	70-130			
Xylene O	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0957	0.0100	mg/kg wet	0.1000		96	70-130			
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0493		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
1,1,1-Trichloroethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,1,2,2-Tetrachloroethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	4	25	
1,1,2-Trichloroethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	0.7	25	
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,1-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
1,1-Dichloropropene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
1,2,3-Trichloropropane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
1,2,4-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.6	25	
1,2,4-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
1,2-Dibromo-3-Chloropropane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	4	25	
1,2-Dibromoethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.7	25	
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
1,2-Dichloroethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
1,2-Dichloropropane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
1,3,5-Trimethylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	0.5	25	
1,3-Dichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	0.2	25	
1,3-Dichloropropane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.4	25	
1,4-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130	9	20	
1-Chlorohexane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
2,2-Dichloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130	4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	0.2	25	
2-Hexanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130	10	25	
4-Chlorotoluene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.4	25	
4-Isopropyltoluene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	0.8	25	
4-Methyl-2-Pentanone	0.252	0.0500	mg/kg wet	0.2500		101	70-130	7	25	
Acetone	0.251	0.0500	mg/kg wet	0.2500		100	70-130	7	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 C153024 - 5035

Benzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
Bromobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	0.7	25	
Bromochloromethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.8	25	
Bromodichloromethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Bromoform	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Bromomethane	0.0448	0.0100	mg/kg wet	0.05000		90	70-130	3	25	
Carbon Disulfide	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Carbon Tetrachloride	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloroethane	0.0476	0.0100	mg/kg wet	0.05000		95	70-130	5	25	
Chloroform	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
Chloromethane	0.0479	0.0100	mg/kg wet	0.05000		96	70-130	1	25	
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
cis-1,3-Dichloropropene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
Dibromochloromethane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	0.6	25	
Dibromomethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.3	25	
Dichlorodifluoromethane	0.0483	0.0100	mg/kg wet	0.05000		97	70-130	3	25	
Diethyl Ether	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.8	25	
Di-isopropyl ether	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
Ethyl tertiary-butyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.7	25	
Ethylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Hexachlorobutadiene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
Isopropylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.2	25	
Methyl tert-Butyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	1	25	
Methylene Chloride	0.0546	0.0250	mg/kg wet	0.05000		109	70-130	4	25	
Naphthalene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
n-Butylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	0.5	25	
sec-Butylbenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.4	25	
Styrene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	0.1	25	
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Tetrachloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
Tetrahydrofuran	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
Toluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
trans-1,2-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
trans-1,3-Dichloropropene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Trichloroethene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Vinyl Acetate	0.0740	0.0050	mg/kg wet	0.05000		148	70-130	2	25	B+
Vinyl Chloride	0.0480	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Xylene O	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130	2	25	
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0525		mg/kg wet	0.05000		105	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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 CI53024 - 5035

Surrogate: 4-Bromofluorobenzene	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0467		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0495		mg/kg wet	0.05000		99	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52912 - 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	4.13		mg/kg wet	5.000		83	40-140			
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LCS

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Total Petroleum Hydrocarbons	29.8	37.5	mg/kg wet	35.00		85	40-140			
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		84	40-140			

Surrogate: O-Terphenyl	4.22		mg/kg wet	5.000		84	40-140			
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LCS Dup

Decane (C10)	1.8	0.2	mg/kg wet	2.500		70	40-140	5	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		84	40-140	2	25	
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140	0.7	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CI52912 - 3546										
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		84	40-140	2	25	
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		63	30-140	4	25	
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		83	40-140	1	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140	2	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		78	40-140	2	25	
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		85	40-140	0.2	25	
Total Petroleum Hydrocarbons	28.9	37.5	mg/kg wet	35.00		83	40-140	3	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		82	40-140	2	25	

Surrogate: *O-Terphenyl* 4.04 mg/kg wet 5.000 81 40-140

8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.37		mg/kg wet	3.333		71	30-130			
Surrogate: 2,4,6-Tribromophenol	3.77		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Fluorobiphenyl	2.35		mg/kg wet	3.333		71	30-130			
Surrogate: 2-Fluorophenol	3.37		mg/kg wet	5.000		67	30-130			
Surrogate: Nitrobenzene-d5	2.38		mg/kg wet	3.333		71	30-130			
Surrogate: Phenol-d6	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: p-Terphenyl-d14	3.10		mg/kg wet	3.333		93	30-130			

LCS

1,1-Biphenyl	2.38	0.333	mg/kg wet	3.333		71	40-140			
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140			
2,3,4,6-Tetrachlorophenol	2.77	1.67	mg/kg wet	3.333		83	30-130			
2,4,5-Trichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130			
2,4,6-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2,4-Dichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dimethylphenol	2.79	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dinitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
2,4-Dinitrotoluene	3.06	0.333	mg/kg wet	3.333		92	40-140			
2,6-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.19	0.333	mg/kg wet	3.333		66	40-140			
2-Chlorophenol	2.62	0.333	mg/kg wet	3.333		79	30-130			
2-Methylnaphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140			
2-Methylphenol	2.64	0.333	mg/kg wet	3.333		79	30-130			
2-Nitroaniline	2.56	0.333	mg/kg wet	3.333		77	40-140			
2-Nitrophenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
3,3'-Dichlorobenzidine	2.32	0.667	mg/kg wet	3.333		70	40-140			
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130			
3-Nitroaniline	2.96	0.333	mg/kg wet	3.333		89	40-140			
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140			
4-Chloro-3-Methylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.50	0.667	mg/kg wet	3.333		75	40-140			
4-Chloro-phenyl-phenyl ether	2.59	0.333	mg/kg wet	3.333		78	40-140			
4-Nitroaniline	2.78	0.333	mg/kg wet	3.333		84	40-140			
4-Nitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
Acenaphthene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.66	0.667	mg/kg wet	3.333		80	40-140			
Aniline	2.33	0.667	mg/kg wet	3.333		70	40-140			
Anthracene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Azobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)anthracene	2.97	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Benzo(a)pyrene	2.97	0.167	mg/kg wet	3.333		89	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Benzoic Acid	2.69	1.67	mg/kg wet	3.333		81	40-140			
Benzyl Alcohol	2.54	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Chloroethoxy)methane	2.70	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Chloroethyl)ether	2.58	0.333	mg/kg wet	3.333		78	40-140			
bis(2-chloroisopropyl)Ether	2.62	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Ethylhexyl)phthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Butylbenzylphthalate	3.46	0.333	mg/kg wet	3.333		104	40-140			
Carbazole	2.83	0.333	mg/kg wet	3.333		85	40-140			
Chrysene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Dibenzo(a,h)Anthracene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Dibenzofuran	2.55	0.333	mg/kg wet	3.333		77	40-140			
Diethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Dimethylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140			
Di-n-butylphthalate	3.38	0.333	mg/kg wet	3.333		101	40-140			
Di-n-octylphthalate	3.31	0.333	mg/kg wet	3.333		99	40-140			
Fluoranthene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorobenzene	2.43	0.167	mg/kg wet	3.333		73	40-140			
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorocyclopentadiene	2.34	1.67	mg/kg wet	3.333		70	40-140			
Hexachloroethane	2.38	0.333	mg/kg wet	3.333		71	40-140			
Indeno(1,2,3-cd)Pyrene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Isophorone	2.69	0.333	mg/kg wet	3.333		81	40-140			
Naphthalene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Nitrobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
N-Nitrosodimethylamine	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	2.58	0.333	mg/kg wet	3.333		77	40-140			
Pentachlorophenol	2.59	1.67	mg/kg wet	3.333		78	30-130			
Phenanthrene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Phenol	3.24	0.333	mg/kg wet	3.333		97	30-130			
Pyrene	3.32	0.333	mg/kg wet	3.333		100	40-140			
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.94		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.90		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.84		mg/kg wet	5.000		77	30-130			
Surrogate: Nitrobenzene-d5	2.58		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	4.18		mg/kg wet	5.000		84	30-130			
Surrogate: p-Terphenyl-d14	3.39		mg/kg wet	3.333		102	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

LCS Dup

1,1-Biphenyl	2.26	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2,4-Trichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	6	30	
1,2-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	13	30	
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140	13	30	
1,4-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	14	30	
2,3,4,6-Tetrachlorophenol	2.66	1.67	mg/kg wet	3.333		80	30-130	4	30	
2,4,5-Trichlorophenol	2.68	0.333	mg/kg wet	3.333		81	30-130	3	30	
2,4,6-Trichlorophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	6	30	
2,4-Dichlorophenol	2.64	0.333	mg/kg wet	3.333		79	30-130	4	30	
2,4-Dimethylphenol	2.61	0.333	mg/kg wet	3.333		78	30-130	7	30	
2,4-Dinitrophenol	2.75	1.67	mg/kg wet	3.333		83	30-130	0.3	30	
2,4-Dinitrotoluene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.8	30	
2,6-Dinitrotoluene	2.84	0.333	mg/kg wet	3.333		85	40-140	3	30	
2-Chloronaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	5	30	
2-Chlorophenol	2.42	0.333	mg/kg wet	3.333		73	30-130	8	30	
2-Methylnaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	6	30	
2-Methylphenol	2.46	0.333	mg/kg wet	3.333		74	30-130	7	30	
2-Nitroaniline	2.44	0.333	mg/kg wet	3.333		73	40-140	5	30	
2-Nitrophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
3,3'-Dichlorobenzidine	2.49	0.667	mg/kg wet	3.333		75	40-140	7	30	
3+4-Methylphenol	6.04	0.667	mg/kg wet	6.667		91	30-130	6	30	
3-Nitroaniline	3.02	0.333	mg/kg wet	3.333		91	40-140	2	30	
4,6-Dinitro-2-Methylphenol	2.71	1.67	mg/kg wet	3.333		81	30-130	2	30	
4-Bromophenyl-phenylether	2.45	0.333	mg/kg wet	3.333		74	40-140	7	30	
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		83	30-130	4	30	
4-Chloroaniline	2.56	0.667	mg/kg wet	3.333		77	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.50	0.333	mg/kg wet	3.333		75	40-140	4	30	
4-Nitroaniline	2.78	0.333	mg/kg wet	3.333		83	40-140	0.3	30	
4-Nitrophenol	2.73	1.67	mg/kg wet	3.333		82	30-130	0.9	30	
Acenaphthene	2.61	0.333	mg/kg wet	3.333		78	40-140	4	30	
Acenaphthylene	2.62	0.333	mg/kg wet	3.333		79	40-140	4	30	
Acetophenone	2.45	0.667	mg/kg wet	3.333		73	40-140	8	30	
Aniline	2.19	0.667	mg/kg wet	3.333		66	40-140	6	30	
Anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140	4	30	
Azobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	7	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	4	30	
Benzo(a)pyrene	2.82	0.167	mg/kg wet	3.333		85	40-140	5	30	
Benzo(b)fluoranthene	2.82	0.333	mg/kg wet	3.333		84	40-140	4	30	
Benzo(g,h,i)perylene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
Benzo(k)fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	7	30	
Benzoic Acid	2.66	1.67	mg/kg wet	3.333		80	40-140	1	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	11	30	
bis(2-Chloroethoxy)methane	2.52	0.333	mg/kg wet	3.333		76	40-140	7	30	
bis(2-Chloroethyl)ether	2.43	0.333	mg/kg wet	3.333		73	40-140	6	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

bis(2-chloroisopropyl)Ether	2.35	0.333	mg/kg wet	3.333		70	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	6	30	
Butylbenzylphthalate	3.27	0.333	mg/kg wet	3.333		98	40-140	6	30	
Carbazole	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Chrysene	2.83	0.167	mg/kg wet	3.333		85	40-140	5	30	
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140	3	30	
Dibenzofuran	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	3	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	4	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	4	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Fluoranthene	2.91	0.333	mg/kg wet	3.333		87	40-140	4	30	
Fluorene	2.64	0.333	mg/kg wet	3.333		79	40-140	4	30	
Hexachlorobenzene	2.40	0.167	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorobutadiene	2.27	0.333	mg/kg wet	3.333		68	40-140	10	30	
Hexachlorocyclopentadiene	2.14	1.67	mg/kg wet	3.333		64	40-140	9	30	
Hexachloroethane	2.04	0.333	mg/kg wet	3.333		61	40-140	15	30	
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140	4	30	
Isophorone	2.53	0.333	mg/kg wet	3.333		76	40-140	6	30	
Naphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140	7	30	
Nitrobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	7	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.43	0.333	mg/kg wet	3.333		73	40-140	8	30	
N-nitrosodiphenylamine	2.48	0.333	mg/kg wet	3.333		75	40-140	4	30	
Pentachlorophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	3	30	
Phenanthrene	2.52	0.333	mg/kg wet	3.333		75	40-140	4	30	
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130	9	30	
Pyrene	3.08	0.333	mg/kg wet	3.333		92	40-140	8	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	16	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2,4,6-Tribromophenol	3.85		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.65		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Fluorobiphenyl	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorophenol	3.49		mg/kg wet	5.000		70	30-130			
Surrogate: Nitrobenzene-d5	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: Phenol-d6	3.83		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.22		mg/kg wet	3.333		96	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

Notes and Definitions

- Z-10 Soil pH measured in water at 22.5 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509748

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15090748
 Date Project Due: 10/2/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- 1. Air Bill Manifest Present? * No
- Air No.:
- 2. Were Custody Seals Present? No
- 3. Were Custody Seals Intact? N/A
- 4. Is Radiation count < 100 CPM? Yes
- 5. Is a cooler present? Yes
- Cooler Temp: 6.1
- Iced With: Ice
- 6. Was COC included with samples? Yes
- 7. Was COC signed and dated by client? Yes
- 8. Does the COC match the sample Yes
- 9. Is COC complete and correct? Yes

- 10. Are the samples properly preserved? Yes
- 11. Proper sample containers used? Yes
- 12. Any air bubbles in the VOA vials? N/A
- 13. Holding times exceeded? No
- 14. Sufficient sample volumes? Yes
- 15. Any Subcontracting needed? No
- 16. Are ESS labels on correct containers? Yes | No
- 17. Were samples received intact? Yes | No
- ESS Sample IDs: _____
- Sub Lab: _____
- Analysis: _____
- TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

LL VIALS FROZEN @ 1305 JL 9/29/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	2	NP
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other

Completed By: [Signature]
 Reviewed By: [Signature]

Date/Time: 9/29/15 1132
 Date/Time: 9/29/15 1305

ESS Lab # **1509748**

CHAIN OF CUSTODY

Turn Time **3** Days
 Regulatory State **Rhode Island**
 Reporting Limits **RI DEM RDEC**

Is this project for any of the following?
 OCT RCP MA MCP RGP DOD

Electronnic Deliverables Data Checker Other (Please Specify →) Excel

Company Name **Charter Environmental**
 Project # **74-15-0002.134** Project Name **Texttron Providence**
 Contact Person **Paul J. Leofanti, Jr.** Address **500 Harrison Avenue, Suite 4R**
 City **Boston** State **MA** Zip Code **02118** PO #
 Telephone Number **(857) 246-6812** FAX Number Email Address **pleofanti@charter.us**

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PH: Corrosivity 9045	VOC	VOC Low Level	SVOC	RCRA 8	TPH
1	9/29/15	9:50	Grab	Soil	Lopes 10% +sand 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Analysis: **VOC Low Level**, **SVOC**, **RCRA 8**, **TPH**, **PH: Corrosivity 9045**

Number of Containers: **1** **1** **1** **2** **1**

Container Type: **AC-Air Cassette** **AG-Amber Glass** **B-BOD Bottle** **C-Cubitainer** **J-Jar** **O-Other** **P-Poly** **S-Sterile** **V-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**

Preservation Code: **1-Non Preserved**, **2-HCl**, **3-H2SO4**, **4-HNO3**, **5-NaOH**, **6-MeOH**, **7-Na2S2O3**, **8-ZnAcce**, **NaOH**, **9-NH4Cl**, **10-Other**

Number of Containers: **1** **1** **1** **2** **1**

Sampled by: **G. Gilbert-Thielsch**

Comments: **Please specify "Other" preservative and containers types in this space**

Please CC: **mpolsky@thielsch.com**

Cooler Present: **Yes** Drop Off Pickup

Seals Intact: Technician Hours →

Cooler Temperature: **6.1° 108**

Relinquished by: **[Signature]** 9-29-15 11:00 AM
 Relinquished by: **[Signature]** 9/29/15 11:20

Received by: **[Signature]** (Signature, Date & Time)
 Relinquished by: **[Signature]** (Signature, Date & Time)



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1509750

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 3:29 pm, Oct 02, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

SAMPLE RECEIPT

The following samples were received on September 29, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on September 29, 2015 at 13:05.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509750-01	Lopes 10% + Sand 8	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI53024-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (145% @ 70-130%)

CI53024-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (148% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYI0333-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)

Decane (C10) (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CYI0300-CCV1 [Calibration required quadratic regression \(Q\).](#)

2,4-Dinitrophenol (101% @ 80-120%), bis(2-Ethylhexyl)phthalate (108% @ 80-120%)

CYI0300-CCV1 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Di-n-butylphthalate (21% @ 20%)

CYI0300-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)

N-Nitrosodimethylamine (24% @ 20%), Pyridine (27% @ 20%)

CYI0335-CCV1 [Calibration required quadratic regression \(Q\).](#)

2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (58% @ 80-120%)

CYI0335-CCV1 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

bis(2-Chloroethyl)ether (25% @ 20%)

CYI0335-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)

2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (24% @ 20%), Benzoic Acid (42% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
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	3.72 (2.61)		6010C		1	KJK	09/30/15 0:40	2.1	100	CI52937
Barium	17.5 (2.61)		6010C		1	KJK	09/30/15 0:40	2.1	100	CI52937
Cadmium	ND (0.52)		6010C		1	KJK	09/30/15 0:40	2.1	100	CI52937
Chromium	6.73 (1.05)		6010C		1	KJK	09/30/15 0:40	2.1	100	CI52937
Lead	23.6 (5.23)		6010C		1	KJK	09/30/15 0:40	2.1	100	CI52937
Mercury	0.038 (0.034)		7471B		1	BJV	09/30/15 12:02	0.63	40	CI52936
Selenium	ND (10.5)		6010C		2	KJK	09/30/15 15:26	2.1	100	CI52937
Silver	ND (0.52)		6010C		1	KJK	09/30/15 0:40	2.1	100	CI52937



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
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	09/30/15 14:00	CYI0339	CI53024
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,1,2,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1,4-Dioxane	ND (0.0871)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
1-Chlorohexane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
2-Butanone	ND (0.0435)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
2-Chlorotoluene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
2-Hexanone	ND (0.0435)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
4-Chlorotoluene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
4-Methyl-2-Pentanone	ND (0.0435)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Acetone	ND (0.0435)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Benzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Bromobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
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	09/30/15 14:00	CYI0339	CI53024
Bromodichloromethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Bromoform	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Bromomethane	ND (0.0087)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Carbon Disulfide	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Chlorobenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Chloroethane	ND (0.0087)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Chloroform	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Chloromethane	ND (0.0087)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Dibromochloromethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Dibromomethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Diethyl Ether	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Di-isopropyl ether	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Ethylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Isopropylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Methylene Chloride	ND (0.0218)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Naphthalene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
n-Butylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
n-Propylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
sec-Butylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Styrene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
tert-Butylbenzene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Tetrachloroethene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Tetrahydrofuran	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
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	09/30/15 14:00	CYI0339	CI53024
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Trichloroethene	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Vinyl Acetate	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Vinyl Chloride	ND (0.0087)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Xylene O	ND (0.0044)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Xylene P,M	ND (0.0087)		8260B Low		1	09/30/15 14:00	CYI0339	CI53024
Xylenes (Total)	ND (0.0087)		8260B Low		1	09/30/15 14:00		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>116 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>78 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>97 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/29/15 17:10

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	187 (42.2)		8100M		1	09/30/15 11:47	CY10333	CI52912
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		91 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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-Biphenyl	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
1,2,4-Trichlorobenzene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
1,2-Dichlorobenzene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
1,3-Dichlorobenzene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
1,4-Dichlorobenzene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,3,4,6-Tetrachlorophenol	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,4,5-Trichlorophenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,4,6-Trichlorophenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,4-Dichlorophenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,4-Dimethylphenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,4-Dinitrophenol	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,4-Dinitrotoluene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2,6-Dinitrotoluene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2-Chloronaphthalene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2-Chlorophenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2-Methylnaphthalene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2-Methylphenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2-Nitroaniline	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
2-Nitrophenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
3,3'-Dichlorobenzidine	ND (0.704)		8270D		1	09/30/15 11:20	CYI0335	CI52818
3+4-Methylphenol	ND (0.704)		8270D		1	09/30/15 11:20	CYI0335	CI52818
3-Nitroaniline	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4,6-Dinitro-2-Methylphenol	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4-Bromophenyl-phenylether	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4-Chloro-3-Methylphenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4-Chloroaniline	ND (0.704)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4-Chloro-phenyl-phenyl ether	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4-Nitroaniline	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
4-Nitrophenol	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Acenaphthene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Acenaphthylene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Acetophenone	ND (0.704)		8270D		1	09/30/15 11:20	CYI0335	CI52818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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>
Aniline	ND (0.704)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Anthracene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Azobenzene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzo(a)anthracene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzo(a)pyrene	0.223 (0.176)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzo(b)fluoranthene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzo(g,h,i)perylene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzo(k)fluoranthene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzoic Acid	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Benzyl Alcohol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
bis(2-Chloroethoxy)methane	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
bis(2-Chloroethyl)ether	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
bis(2-chloroisopropyl)Ether	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
bis(2-Ethylhexyl)phthalate	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Butylbenzylphthalate	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Carbazole	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Chrysene	0.268 (0.176)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Dibenzo(a,h)Anthracene	ND (0.176)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Dibenzofuran	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Diethylphthalate	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Dimethylphthalate	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Di-n-butylphthalate	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Di-n-octylphthalate	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Fluoranthene	0.358 (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Fluorene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Hexachlorobenzene	ND (0.176)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Hexachlorobutadiene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Hexachlorocyclopentadiene	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Hexachloroethane	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Indeno(1,2,3-cd)Pyrene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Isophorone	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Naphthalene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes 10% + Sand 8
 Date Sampled: 09/29/15 10:20
 Percent Solids: 91
 Initial Volume: 15.6
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1509750
 ESS Laboratory Sample ID: 1509750-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 9/29/15 15:19

8270D Semi-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>
Nitrobenzene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
N-Nitrosodimethylamine	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
N-Nitroso-Di-n-Propylamine	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
N-nitrosodiphenylamine	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Pentachlorophenol	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Phenanthrene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Phenol	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Pyrene	ND (0.351)		8270D		1	09/30/15 11:20	CYI0335	CI52818
Pyridine	ND (1.76)		8270D		1	09/30/15 11:20	CYI0335	CI52818

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	51 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	62 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	61 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	60 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	61 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	61 %		30-130
<i>Surrogate: Phenol-d6</i>	68 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	60 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 8
Date Sampled: 09/29/15 10:20
Percent Solids: 91

ESS Laboratory Work Order: 1509750
ESS Laboratory Sample ID: 1509750-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.93 (N/A)		9045		1	JLK	09/29/15 15:25	S.U.	CI52938
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.8 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 CI52936 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet							
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LCS

Mercury	26.5	3.81	mg/kg wet	24.90		106	80-120			
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LCS Dup

Mercury	26.3	3.74	mg/kg wet	24.90		106	80-120	0.5	20	
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Batch CI52937 - 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	121	8.93	mg/kg wet	133.0		91	80-120			
Barium	221	8.93	mg/kg wet	229.0		97	80-120			
Cadmium	107	1.79	mg/kg wet	123.0		87	80-120			
Chromium	56.6	3.57	mg/kg wet	63.20		89	80-120			
Lead	100	17.9	mg/kg wet	108.0		93	80-120			
Selenium	65.6	17.9	mg/kg wet	81.40		81	80-120			
Silver	71.8	1.79	mg/kg wet	74.80		96	80-120			

LCS Dup

Arsenic	116	8.77	mg/kg wet	133.0		87	80-120	4	20	
Barium	199	8.77	mg/kg wet	229.0		87	80-120	11	20	
Cadmium	103	1.75	mg/kg wet	123.0		84	80-120	4	20	
Chromium	55.4	3.51	mg/kg wet	63.20		88	80-120	2	20	
Lead	99.2	17.5	mg/kg wet	108.0		92	80-120	1	20	
Selenium	66.1	17.5	mg/kg wet	81.40		81	80-120	0.7	20	
Silver	68.8	1.75	mg/kg wet	74.80		92	80-120	4	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CI53024 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 C153024 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 C153024 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0427		mg/kg wet	0.05000		85	70-130			
Surrogate: Dibromofluoromethane	0.0414		mg/kg wet	0.05000		83	70-130			
Surrogate: Toluene-d8	0.0459		mg/kg wet	0.05000		92	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,1,2,2-Tetrachloroethane	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloropropene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
1,2-Dibromoethane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 C153024 - 5035

1,4-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,4-Dioxane	0.943	0.100	mg/kg wet	1.000		94	70-130			
1-Chlorohexane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2,2-Dichloropropane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
2-Butanone	0.219	0.0500	mg/kg wet	0.2500		88	70-130			
2-Chlorotoluene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
2-Hexanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
4-Isopropyltoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.236	0.0500	mg/kg wet	0.2500		94	70-130			
Acetone	0.233	0.0500	mg/kg wet	0.2500		93	70-130			
Benzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromochloromethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Bromodichloromethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Bromomethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Carbon Disulfide	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Carbon Tetrachloride	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Chlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130			
Chloroform	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Chloromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130			
cis-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Dibromochloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Dichlorodifluoromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
Ethyl tertiary-butyl ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Ethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Hexachlorobutadiene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Methylene Chloride	0.0526	0.0250	mg/kg wet	0.05000		105	70-130			
Naphthalene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
n-Propylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	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	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrachloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 C153024 - 5035

Toluene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
trans-1,3-Dichloropropene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Trichloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Trichlorofluoromethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Vinyl Acetate	0.0726	0.0050	mg/kg wet	0.05000		145	70-130			B+
Vinyl Chloride	0.0492	0.0100	mg/kg wet	0.05000		98	70-130			
Xylene O	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0957	0.0100	mg/kg wet	0.1000		96	70-130			
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0493		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
1,1,1-Trichloroethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,1,2,2-Tetrachloroethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	4	25	
1,1,2-Trichloroethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	0.7	25	
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,1-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
1,1-Dichloropropene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
1,2,3-Trichloropropane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
1,2,4-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.6	25	
1,2,4-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
1,2-Dibromo-3-Chloropropane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	4	25	
1,2-Dibromoethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.7	25	
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
1,2-Dichloroethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
1,2-Dichloropropane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
1,3,5-Trimethylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	0.5	25	
1,3-Dichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	0.2	25	
1,3-Dichloropropane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.4	25	
1,4-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130	9	20	
1-Chlorohexane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
2,2-Dichloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130	4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	0.2	25	
2-Hexanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130	10	25	
4-Chlorotoluene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.4	25	
4-Isopropyltoluene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	0.8	25	
4-Methyl-2-Pentanone	0.252	0.0500	mg/kg wet	0.2500		101	70-130	7	25	
Acetone	0.251	0.0500	mg/kg wet	0.2500		100	70-130	7	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 C153024 - 5035

Benzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
Bromobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	0.7	25	
Bromochloromethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.8	25	
Bromodichloromethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Bromoform	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Bromomethane	0.0448	0.0100	mg/kg wet	0.05000		90	70-130	3	25	
Carbon Disulfide	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Carbon Tetrachloride	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloroethane	0.0476	0.0100	mg/kg wet	0.05000		95	70-130	5	25	
Chloroform	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
Chloromethane	0.0479	0.0100	mg/kg wet	0.05000		96	70-130	1	25	
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
cis-1,3-Dichloropropene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
Dibromochloromethane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	0.6	25	
Dibromomethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.3	25	
Dichlorodifluoromethane	0.0483	0.0100	mg/kg wet	0.05000		97	70-130	3	25	
Diethyl Ether	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.8	25	
Di-isopropyl ether	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
Ethyl tertiary-butyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.7	25	
Ethylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Hexachlorobutadiene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
Isopropylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.2	25	
Methyl tert-Butyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	1	25	
Methylene Chloride	0.0546	0.0250	mg/kg wet	0.05000		109	70-130	4	25	
Naphthalene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
n-Butylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	0.5	25	
sec-Butylbenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.4	25	
Styrene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	0.1	25	
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Tetrachloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
Tetrahydrofuran	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
Toluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
trans-1,2-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
trans-1,3-Dichloropropene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Trichloroethene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Vinyl Acetate	0.0740	0.0050	mg/kg wet	0.05000		148	70-130	2	25	B+
Vinyl Chloride	0.0480	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Xylene O	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130	2	25	
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0525		mg/kg wet	0.05000		105	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 CI53024 - 5035

Surrogate: 4-Bromofluorobenzene	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0467		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0495		mg/kg wet	0.05000		99	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52912 - 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	4.13		mg/kg wet	5.000		83	40-140			
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LCS

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Total Petroleum Hydrocarbons	29.8	37.5	mg/kg wet	35.00		85	40-140			
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		84	40-140			

Surrogate: O-Terphenyl	4.22		mg/kg wet	5.000		84	40-140			
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LCS Dup

Decane (C10)	1.8	0.2	mg/kg wet	2.500		70	40-140	5	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		84	40-140	2	25	
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140	0.7	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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 CI52912 - 3546

Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		84	40-140	2	25	
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		63	30-140	4	25	
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		83	40-140	1	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140	2	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		78	40-140	2	25	
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		85	40-140	0.2	25	
Total Petroleum Hydrocarbons	28.9	37.5	mg/kg wet	35.00		83	40-140	3	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		82	40-140	2	25	

Surrogate: O-Terphenyl 4.04 mg/kg wet 5.000 81 40-140

8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.37		mg/kg wet	3.333		71	30-130			
Surrogate: 2,4,6-Tribromophenol	3.77		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Fluorobiphenyl	2.35		mg/kg wet	3.333		71	30-130			
Surrogate: 2-Fluorophenol	3.37		mg/kg wet	5.000		67	30-130			
Surrogate: Nitrobenzene-d5	2.38		mg/kg wet	3.333		71	30-130			
Surrogate: Phenol-d6	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: p-Terphenyl-d14	3.10		mg/kg wet	3.333		93	30-130			

LCS

1,1-Biphenyl	2.38	0.333	mg/kg wet	3.333		71	40-140			
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140			
2,3,4,6-Tetrachlorophenol	2.77	1.67	mg/kg wet	3.333		83	30-130			
2,4,5-Trichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130			
2,4,6-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2,4-Dichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dimethylphenol	2.79	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dinitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
2,4-Dinitrotoluene	3.06	0.333	mg/kg wet	3.333		92	40-140			
2,6-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.19	0.333	mg/kg wet	3.333		66	40-140			
2-Chlorophenol	2.62	0.333	mg/kg wet	3.333		79	30-130			
2-Methylnaphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140			
2-Methylphenol	2.64	0.333	mg/kg wet	3.333		79	30-130			
2-Nitroaniline	2.56	0.333	mg/kg wet	3.333		77	40-140			
2-Nitrophenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
3,3'-Dichlorobenzidine	2.32	0.667	mg/kg wet	3.333		70	40-140			
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130			
3-Nitroaniline	2.96	0.333	mg/kg wet	3.333		89	40-140			
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140			
4-Chloro-3-Methylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.50	0.667	mg/kg wet	3.333		75	40-140			
4-Chloro-phenyl-phenyl ether	2.59	0.333	mg/kg wet	3.333		78	40-140			
4-Nitroaniline	2.78	0.333	mg/kg wet	3.333		84	40-140			
4-Nitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
Acenaphthene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.66	0.667	mg/kg wet	3.333		80	40-140			
Aniline	2.33	0.667	mg/kg wet	3.333		70	40-140			
Anthracene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Azobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)anthracene	2.97	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Benzo(a)pyrene	2.97	0.167	mg/kg wet	3.333		89	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Benzoic Acid	2.69	1.67	mg/kg wet	3.333		81	40-140			
Benzyl Alcohol	2.54	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Chloroethoxy)methane	2.70	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Chloroethyl)ether	2.58	0.333	mg/kg wet	3.333		78	40-140			
bis(2-chloroisopropyl)Ether	2.62	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Ethylhexyl)phthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Butylbenzylphthalate	3.46	0.333	mg/kg wet	3.333		104	40-140			
Carbazole	2.83	0.333	mg/kg wet	3.333		85	40-140			
Chrysene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Dibenzo(a,h)Anthracene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Dibenzofuran	2.55	0.333	mg/kg wet	3.333		77	40-140			
Diethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Dimethylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140			
Di-n-butylphthalate	3.38	0.333	mg/kg wet	3.333		101	40-140			
Di-n-octylphthalate	3.31	0.333	mg/kg wet	3.333		99	40-140			
Fluoranthene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorobenzene	2.43	0.167	mg/kg wet	3.333		73	40-140			
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorocyclopentadiene	2.34	1.67	mg/kg wet	3.333		70	40-140			
Hexachloroethane	2.38	0.333	mg/kg wet	3.333		71	40-140			
Indeno(1,2,3-cd)Pyrene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Isophorone	2.69	0.333	mg/kg wet	3.333		81	40-140			
Naphthalene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Nitrobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
N-Nitrosodimethylamine	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	2.58	0.333	mg/kg wet	3.333		77	40-140			
Pentachlorophenol	2.59	1.67	mg/kg wet	3.333		78	30-130			
Phenanthrene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Phenol	3.24	0.333	mg/kg wet	3.333		97	30-130			
Pyrene	3.32	0.333	mg/kg wet	3.333		100	40-140			
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.94		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.90		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.84		mg/kg wet	5.000		77	30-130			
Surrogate: Nitrobenzene-d5	2.58		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	4.18		mg/kg wet	5.000		84	30-130			
Surrogate: p-Terphenyl-d14	3.39		mg/kg wet	3.333		102	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

LCS Dup

1,1-Biphenyl	2.26	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2,4-Trichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	6	30	
1,2-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	13	30	
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140	13	30	
1,4-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	14	30	
2,3,4,6-Tetrachlorophenol	2.66	1.67	mg/kg wet	3.333		80	30-130	4	30	
2,4,5-Trichlorophenol	2.68	0.333	mg/kg wet	3.333		81	30-130	3	30	
2,4,6-Trichlorophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	6	30	
2,4-Dichlorophenol	2.64	0.333	mg/kg wet	3.333		79	30-130	4	30	
2,4-Dimethylphenol	2.61	0.333	mg/kg wet	3.333		78	30-130	7	30	
2,4-Dinitrophenol	2.75	1.67	mg/kg wet	3.333		83	30-130	0.3	30	
2,4-Dinitrotoluene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.8	30	
2,6-Dinitrotoluene	2.84	0.333	mg/kg wet	3.333		85	40-140	3	30	
2-Chloronaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	5	30	
2-Chlorophenol	2.42	0.333	mg/kg wet	3.333		73	30-130	8	30	
2-Methylnaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	6	30	
2-Methylphenol	2.46	0.333	mg/kg wet	3.333		74	30-130	7	30	
2-Nitroaniline	2.44	0.333	mg/kg wet	3.333		73	40-140	5	30	
2-Nitrophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
3,3'-Dichlorobenzidine	2.49	0.667	mg/kg wet	3.333		75	40-140	7	30	
3+4-Methylphenol	6.04	0.667	mg/kg wet	6.667		91	30-130	6	30	
3-Nitroaniline	3.02	0.333	mg/kg wet	3.333		91	40-140	2	30	
4,6-Dinitro-2-Methylphenol	2.71	1.67	mg/kg wet	3.333		81	30-130	2	30	
4-Bromophenyl-phenylether	2.45	0.333	mg/kg wet	3.333		74	40-140	7	30	
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		83	30-130	4	30	
4-Chloroaniline	2.56	0.667	mg/kg wet	3.333		77	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.50	0.333	mg/kg wet	3.333		75	40-140	4	30	
4-Nitroaniline	2.78	0.333	mg/kg wet	3.333		83	40-140	0.3	30	
4-Nitrophenol	2.73	1.67	mg/kg wet	3.333		82	30-130	0.9	30	
Acenaphthene	2.61	0.333	mg/kg wet	3.333		78	40-140	4	30	
Acenaphthylene	2.62	0.333	mg/kg wet	3.333		79	40-140	4	30	
Acetophenone	2.45	0.667	mg/kg wet	3.333		73	40-140	8	30	
Aniline	2.19	0.667	mg/kg wet	3.333		66	40-140	6	30	
Anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140	4	30	
Azobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	7	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	4	30	
Benzo(a)pyrene	2.82	0.167	mg/kg wet	3.333		85	40-140	5	30	
Benzo(b)fluoranthene	2.82	0.333	mg/kg wet	3.333		84	40-140	4	30	
Benzo(g,h,i)perylene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
Benzo(k)fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	7	30	
Benzoic Acid	2.66	1.67	mg/kg wet	3.333		80	40-140	1	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	11	30	
bis(2-Chloroethoxy)methane	2.52	0.333	mg/kg wet	3.333		76	40-140	7	30	
bis(2-Chloroethyl)ether	2.43	0.333	mg/kg wet	3.333		73	40-140	6	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

bis(2-chloroisopropyl)Ether	2.35	0.333	mg/kg wet	3.333		70	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	6	30	
Butylbenzylphthalate	3.27	0.333	mg/kg wet	3.333		98	40-140	6	30	
Carbazole	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Chrysene	2.83	0.167	mg/kg wet	3.333		85	40-140	5	30	
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140	3	30	
Dibenzofuran	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	3	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	4	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	4	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Fluoranthene	2.91	0.333	mg/kg wet	3.333		87	40-140	4	30	
Fluorene	2.64	0.333	mg/kg wet	3.333		79	40-140	4	30	
Hexachlorobenzene	2.40	0.167	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorobutadiene	2.27	0.333	mg/kg wet	3.333		68	40-140	10	30	
Hexachlorocyclopentadiene	2.14	1.67	mg/kg wet	3.333		64	40-140	9	30	
Hexachloroethane	2.04	0.333	mg/kg wet	3.333		61	40-140	15	30	
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140	4	30	
Isophorone	2.53	0.333	mg/kg wet	3.333		76	40-140	6	30	
Naphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140	7	30	
Nitrobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	7	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.43	0.333	mg/kg wet	3.333		73	40-140	8	30	
N-nitrosodiphenylamine	2.48	0.333	mg/kg wet	3.333		75	40-140	4	30	
Pentachlorophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	3	30	
Phenanthrene	2.52	0.333	mg/kg wet	3.333		75	40-140	4	30	
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130	9	30	
Pyrene	3.08	0.333	mg/kg wet	3.333		92	40-140	8	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	16	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2,4,6-Tribromophenol	3.85		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.65		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Fluorobiphenyl	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorophenol	3.49		mg/kg wet	5.000		70	30-130			
Surrogate: Nitrobenzene-d5	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: Phenol-d6	3.83		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.22		mg/kg wet	3.333		96	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

Notes and Definitions

- Z-10 Soil pH measured in water at 22.8 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509750

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15090750
 Date Project Due: 10/2/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|---|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <input type="text" value="Cooler Temp: 6.1"/> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="text" value="Iced With: Ice"/> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: _____ | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: _____ | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: _____ | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: _____ | |

18. Was there need to call project manager to discuss status? If yes, please explain.

LL vials frozen @ 1305 JL 9/29/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature] Date/Time: 9/29/15 1135
 Reviewed By: [Signature] Date/Time: 9/29/15 1305

ESS Laboratory

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

CHAIN OF CUSTODY

Turn Time: 3 Days
Regulatory State: Rhode Island
Is this project for any of the following?
 OCT RCP MA MCP RGP OOD

Project # 74-15-0002.134 Project Name: Textron Providence
Address: 500 Harrison Avenue, Suite 4R
City: Boston State: MA Zip Code: 02118 PO #Email Address: pleofant@charter.us

ESS Lab # 15097SD

Reporting Limits RI DEM RDEC

Electronic Deliverables Data Checker Other (Please Specify ->) Excel

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis	VOC	VOC Low Level	SVOC	RCRA 8	TPH
1	9/29/15	10:30	Grab	Soil	Lopes 10% + sand 8		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubittainer J-Jar O-Other P-Poly S-Sterile V-Val J J 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 10 7 7 10 10 10 Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAc, NaOH, 9-NH4Cl, 10-Other* 1 1 6 10 1 1 1 1 1 1 2 1											
Number of Containers: 1 1 1 2 1											

Laboratory Use Only
 Cooled Present: Yes Drop Off Pickup
 Seals Intact: 6:10 12 Technician Hours →
 Cooler Temperature: 11:04m
 Received by: Maxy [Signature] 9-29-15
 Reinquished by: [Signature] 7/29/15 1126
 Received by: (Signature, Date & Time)
 Reinquished by: (Signature, Date & Time)

Sampled by: G. Gilbert-Thielsch
 Comments: Please specify "Other" preservative and containers types in this space
 Please CC: mpolsky@thielsch.com
 Number of Containers: 1 1 1 2 1



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1509751

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 3:29 pm, Oct 02, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

SAMPLE RECEIPT

The following samples were received on September 29, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on September 29, 2015 at 13:05.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509751-01	Lopes 10% + Sand 9	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1509751-01 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
1,4-Dichlorobenzene-D4 (43% @ 50-200%)
- 1509751-01RE1 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
1,4-Dichlorobenzene-D4 (48% @ 50-200%)
- CI53024-BS1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (145% @ 70-130%)
- CI53024-BSD1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (148% @ 70-130%)

8100M Total Petroleum Hydrocarbons

- CYI0333-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
Decane (C10) (22% @ 20%)

8270D Semi-Volatile Organic Compounds

- CYI0300-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (101% @ 80-120%), bis(2-Ethylhexyl)phthalate (108% @ 80-120%)
- CYI0300-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
Di-n-butylphthalate (21% @ 20%)
- CYI0300-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
N-Nitrosodimethylamine (24% @ 20%), Pyridine (27% @ 20%)
- CYI0335-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (58% @ 80-120%)
- CYI0335-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
bis(2-Chloroethyl)ether (25% @ 20%)
- CYI0335-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (24% @ 20%), Benzoic Acid (42% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
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	4.16 (2.55)		6010C		1	KJK	09/30/15 14:53	2.15	100	CI52937
Barium	18.0 (2.55)		6010C		1	KJK	09/30/15 11:39	2.15	100	CI52937
Cadmium	ND (0.51)		6010C		1	KJK	09/30/15 11:39	2.15	100	CI52937
Chromium	5.82 (1.02)		6010C		1	KJK	09/30/15 11:39	2.15	100	CI52937
Lead	23.0 (5.10)		6010C		1	KJK	09/30/15 11:39	2.15	100	CI52937
Mercury	0.039 (0.036)		7471B		1	BJV	09/30/15 12:04	0.61	40	CI52936
Selenium	ND (5.10)		6010C		1	KJK	09/30/15 11:39	2.15	100	CI52937
Silver	ND (0.51)		6010C		1	KJK	09/30/15 11:39	2.15	100	CI52937



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
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 (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,1,2,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1,4-Dioxane	ND (0.0898)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
1-Chlorohexane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
2-Butanone	ND (0.0449)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
2-Chlorotoluene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
2-Hexanone	ND (0.0449)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
4-Chlorotoluene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
4-Methyl-2-Pentanone	ND (0.0449)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Acetone	ND (0.0449)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Benzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Bromobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
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 (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Bromodichloromethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Bromoform	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Bromomethane	ND (0.0090)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Carbon Disulfide	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Chlorobenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Chloroethane	ND (0.0090)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Chloroform	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Chloromethane	ND (0.0090)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Dibromochloromethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Dibromomethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Dichlorodifluoromethane	ND (0.0090)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Diethyl Ether	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Di-isopropyl ether	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Ethylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Isopropylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Methylene Chloride	ND (0.0224)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Naphthalene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
n-Butylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
n-Propylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
sec-Butylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Styrene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
tert-Butylbenzene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Tetrachloroethene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Tetrahydrofuran	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
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 (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Trichloroethene	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Vinyl Acetate	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Vinyl Chloride	ND (0.0090)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Xylene O	ND (0.0045)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Xylene P,M	ND (0.0090)		8260B Low		1	09/30/15 14:28	CYI0339	CI53024
Xylenes (Total)	ND (0.0090)		8260B Low		1	09/30/15 14:28		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>109 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>75 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/29/15 17:10

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	187 (42.4)		8100M		1	09/30/15 12:26	CY10333	CI52912
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		86 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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-Biphenyl	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
1,2,4-Trichlorobenzene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
1,2-Dichlorobenzene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
1,3-Dichlorobenzene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
1,4-Dichlorobenzene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,3,4,6-Tetrachlorophenol	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,4,5-Trichlorophenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,4,6-Trichlorophenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,4-Dichlorophenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,4-Dimethylphenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,4-Dinitrophenol	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,4-Dinitrotoluene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2,6-Dinitrotoluene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2-Chloronaphthalene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2-Chlorophenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2-Methylnaphthalene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2-Methylphenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2-Nitroaniline	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
2-Nitrophenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
3,3'-Dichlorobenzidine	ND (0.731)		8270D		1	09/30/15 11:57	CYI0335	CI52818
3+4-Methylphenol	ND (0.731)		8270D		1	09/30/15 11:57	CYI0335	CI52818
3-Nitroaniline	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4,6-Dinitro-2-Methylphenol	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4-Bromophenyl-phenylether	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4-Chloro-3-Methylphenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4-Chloroaniline	ND (0.731)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4-Chloro-phenyl-phenyl ether	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4-Nitroaniline	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
4-Nitrophenol	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Acenaphthene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Acenaphthylene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Acetophenone	ND (0.731)		8270D		1	09/30/15 11:57	CYI0335	CI52818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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>
Aniline	ND (0.731)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Anthracene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Azobenzene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzo(a)anthracene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzo(a)pyrene	0.233 (0.183)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzo(b)fluoranthene	0.366 (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzo(g,h,i)perylene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzo(k)fluoranthene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzoic Acid	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Benzyl Alcohol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
bis(2-Chloroethoxy)methane	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
bis(2-Chloroethyl)ether	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
bis(2-chloroisopropyl)Ether	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
bis(2-Ethylhexyl)phthalate	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Butylbenzylphthalate	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Carbazole	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Chrysene	0.269 (0.183)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Dibenzo(a,h)Anthracene	ND (0.183)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Dibenzofuran	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Diethylphthalate	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Dimethylphthalate	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Di-n-butylphthalate	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Di-n-octylphthalate	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Fluoranthene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Fluorene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Hexachlorobenzene	ND (0.183)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Hexachlorobutadiene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Hexachlorocyclopentadiene	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Hexachloroethane	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Indeno(1,2,3-cd)Pyrene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Isophorone	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Naphthalene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/29/15 15:19

8270D Semi-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>
Nitrobenzene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
N-Nitrosodimethylamine	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
N-Nitroso-Di-n-Propylamine	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
N-nitrosodiphenylamine	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Pentachlorophenol	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Phenanthrene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Phenol	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Pyrene	ND (0.365)		8270D		1	09/30/15 11:57	CYI0335	CI52818
Pyridine	ND (1.83)		8270D		1	09/30/15 11:57	CYI0335	CI52818

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>43 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>57 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>52 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>53 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>51 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>49 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>59 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>55 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.96 (N/A)		9045		1	JLK	09/29/15 15:25	S.U.	CI52938
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01RE1
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 (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1,4-Dioxane	ND (0.0869)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
1-Chlorohexane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
2-Butanone	ND (0.0435)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
2-Chlorotoluene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
2-Hexanone	ND (0.0435)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
4-Chlorotoluene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
4-Methyl-2-Pentanone	ND (0.0435)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Acetone	ND (0.0435)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Benzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Bromobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01RE1
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 (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Bromodichloromethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Bromoform	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Bromomethane	ND (0.0087)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Carbon Disulfide	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Chlorobenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Chloroethane	ND (0.0087)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Chloroform	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Chloromethane	ND (0.0087)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Dibromochloromethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Dibromomethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Diethyl Ether	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Di-isopropyl ether	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Ethylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Isopropylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Methylene Chloride	ND (0.0217)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Naphthalene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
n-Butylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
n-Propylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
sec-Butylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Styrene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
tert-Butylbenzene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Tetrachloroethene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Tetrahydrofuran	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes 10% + Sand 9
Date Sampled: 09/29/15 10:39
Percent Solids: 91
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509751
ESS Laboratory Sample ID: 1509751-01RE1
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 (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Trichloroethene	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Vinyl Acetate	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Vinyl Chloride	ND (0.0087)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Xylene O	ND (0.0043)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Xylene P,M	ND (0.0087)		8260B Low		1	09/30/15 15:54	CYI0339	CI53024
Xylenes (Total)	ND (0.0087)		8260B Low		1	09/30/15 15:54		[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>78 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>97 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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 CI52936 - 7471A

Blank

Mercury ND 0.033 mg/kg wet

LCS

Mercury 26.5 3.81 mg/kg wet 24.90 106 80-120

LCS Dup

Mercury 26.3 3.74 mg/kg wet 24.90 106 80-120 0.5 20

Batch CI52937 - 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 121 8.93 mg/kg wet 133.0 91 80-120
Barium 221 8.93 mg/kg wet 229.0 97 80-120
Cadmium 107 1.79 mg/kg wet 123.0 87 80-120
Chromium 56.6 3.57 mg/kg wet 63.20 89 80-120
Lead 100 17.9 mg/kg wet 108.0 93 80-120
Selenium 65.6 17.9 mg/kg wet 81.40 81 80-120
Silver 71.8 1.79 mg/kg wet 74.80 96 80-120

LCS Dup

Arsenic 116 8.77 mg/kg wet 133.0 87 80-120 4 20
Barium 199 8.77 mg/kg wet 229.0 87 80-120 11 20
Cadmium 103 1.75 mg/kg wet 123.0 84 80-120 4 20
Chromium 55.4 3.51 mg/kg wet 63.20 88 80-120 2 20
Lead 99.2 17.5 mg/kg wet 108.0 92 80-120 1 20
Selenium 66.1 17.5 mg/kg wet 81.40 81 80-120 0.7 20
Silver 68.8 1.75 mg/kg wet 74.80 92 80-120 4 20

5035/8260B Volatile Organic Compounds / Low Level

Batch CI53024 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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 C153024 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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 C153024 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0427		mg/kg wet	0.05000		85	70-130			
Surrogate: Dibromofluoromethane	0.0414		mg/kg wet	0.05000		83	70-130			
Surrogate: Toluene-d8	0.0459		mg/kg wet	0.05000		92	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,1,2,2-Tetrachloroethane	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloropropene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromo-3-Chloropropane	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
1,2-Dibromoethane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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 C153024 - 5035

1,4-Dichlorobenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
1,4-Dioxane	0.943	0.100	mg/kg wet	1.000		94	70-130			
1-Chlorohexane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2,2-Dichloropropane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
2-Butanone	0.219	0.0500	mg/kg wet	0.2500		88	70-130			
2-Chlorotoluene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
2-Hexanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
4-Isopropyltoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.236	0.0500	mg/kg wet	0.2500		94	70-130			
Acetone	0.233	0.0500	mg/kg wet	0.2500		93	70-130			
Benzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Bromobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromochloromethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Bromodichloromethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Bromomethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Carbon Disulfide	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Carbon Tetrachloride	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Chlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130			
Chloroform	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
Chloromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130			
cis-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Dibromochloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Dichlorodifluoromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
Ethyl tertiary-butyl ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Ethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Hexachlorobutadiene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Methylene Chloride	0.0526	0.0250	mg/kg wet	0.05000		105	70-130			
Naphthalene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
n-Propylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	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	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrachloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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 C153024 - 5035

Toluene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
trans-1,3-Dichloropropene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Trichloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Trichlorofluoromethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Vinyl Acetate	0.0726	0.0050	mg/kg wet	0.05000		145	70-130			B+
Vinyl Chloride	0.0492	0.0100	mg/kg wet	0.05000		98	70-130			
Xylene O	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0957	0.0100	mg/kg wet	0.1000		96	70-130			
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0493		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
1,1,1-Trichloroethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,1,2,2-Tetrachloroethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	4	25	
1,1,2-Trichloroethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	0.7	25	
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,1-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
1,1-Dichloropropene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
1,2,3-Trichloropropane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
1,2,4-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.6	25	
1,2,4-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
1,2-Dibromo-3-Chloropropane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	4	25	
1,2-Dibromoethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.7	25	
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
1,2-Dichloroethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
1,2-Dichloropropane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
1,3,5-Trimethylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	0.5	25	
1,3-Dichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	0.2	25	
1,3-Dichloropropane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.4	25	
1,4-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130	9	20	
1-Chlorohexane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
2,2-Dichloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130	4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	0.2	25	
2-Hexanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130	10	25	
4-Chlorotoluene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.4	25	
4-Isopropyltoluene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	0.8	25	
4-Methyl-2-Pentanone	0.252	0.0500	mg/kg wet	0.2500		101	70-130	7	25	
Acetone	0.251	0.0500	mg/kg wet	0.2500		100	70-130	7	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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 C153024 - 5035

Benzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
Bromobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	0.7	25	
Bromochloromethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.8	25	
Bromodichloromethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Bromoform	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Bromomethane	0.0448	0.0100	mg/kg wet	0.05000		90	70-130	3	25	
Carbon Disulfide	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Carbon Tetrachloride	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloroethane	0.0476	0.0100	mg/kg wet	0.05000		95	70-130	5	25	
Chloroform	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
Chloromethane	0.0479	0.0100	mg/kg wet	0.05000		96	70-130	1	25	
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
cis-1,3-Dichloropropene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
Dibromochloromethane	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	0.6	25	
Dibromomethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.3	25	
Dichlorodifluoromethane	0.0483	0.0100	mg/kg wet	0.05000		97	70-130	3	25	
Diethyl Ether	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.8	25	
Di-isopropyl ether	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	2	25	
Ethyl tertiary-butyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.7	25	
Ethylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Hexachlorobutadiene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
Isopropylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.2	25	
Methyl tert-Butyl Ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	1	25	
Methylene Chloride	0.0546	0.0250	mg/kg wet	0.05000		109	70-130	4	25	
Naphthalene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
n-Butylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	0.5	25	
sec-Butylbenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.4	25	
Styrene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	0.1	25	
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Tetrachloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
Tetrahydrofuran	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
Toluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
trans-1,2-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
trans-1,3-Dichloropropene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Trichloroethene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Vinyl Acetate	0.0740	0.0050	mg/kg wet	0.05000		148	70-130	2	25	B+
Vinyl Chloride	0.0480	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Xylene O	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130	2	25	
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0525		mg/kg wet	0.05000		105	70-130			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1509751

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 CI53024 - 5035

Surrogate: 4-Bromofluorobenzene	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0467		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0495		mg/kg wet	0.05000		99	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52912 - 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	4.13		mg/kg wet	5.000		83	40-140			
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LCS

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Total Petroleum Hydrocarbons	29.8	37.5	mg/kg wet	35.00		85	40-140			
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		84	40-140			

Surrogate: O-Terphenyl	4.22		mg/kg wet	5.000		84	40-140			
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LCS Dup

Decane (C10)	1.8	0.2	mg/kg wet	2.500		70	40-140	5	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		84	40-140	2	25	
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140	0.7	25	



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ESS Laboratory Work Order: 1509751

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CI52912 - 3546										
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		84	40-140	2	25	
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		63	30-140	4	25	
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		83	40-140	1	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140	2	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		78	40-140	2	25	
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		85	40-140	0.2	25	
Total Petroleum Hydrocarbons	28.9	37.5	mg/kg wet	35.00		83	40-140	3	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		82	40-140	2	25	

Surrogate: O-Terphenyl 4.04 mg/kg wet 5.000 81 40-140

8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Blank			
1,1-Biphenyl	ND	0.333	mg/kg wet
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet
1,2-Dichlorobenzene	ND	0.333	mg/kg wet
1,3-Dichlorobenzene	ND	0.333	mg/kg wet
1,4-Dichlorobenzene	ND	0.333	mg/kg wet
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet
2,4-Dichlorophenol	ND	0.333	mg/kg wet
2,4-Dimethylphenol	ND	0.333	mg/kg wet
2,4-Dinitrophenol	ND	1.67	mg/kg wet
2,4-Dinitrotoluene	ND	0.333	mg/kg wet
2,6-Dinitrotoluene	ND	0.333	mg/kg wet
2-Chloronaphthalene	ND	0.333	mg/kg wet
2-Chlorophenol	ND	0.333	mg/kg wet
2-Methylnaphthalene	ND	0.333	mg/kg wet
2-Methylphenol	ND	0.333	mg/kg wet
2-Nitroaniline	ND	0.333	mg/kg wet
2-Nitrophenol	ND	0.333	mg/kg wet
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet
3+4-Methylphenol	ND	0.667	mg/kg wet
3-Nitroaniline	ND	0.333	mg/kg wet
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet
4-Chloroaniline	ND	0.667	mg/kg wet
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet
4-Nitroaniline	ND	0.333	mg/kg wet



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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	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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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.37		mg/kg wet	3.333		71	30-130			
Surrogate: 2,4,6-Tribromophenol	3.77		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Fluorobiphenyl	2.35		mg/kg wet	3.333		71	30-130			
Surrogate: 2-Fluorophenol	3.37		mg/kg wet	5.000		67	30-130			
Surrogate: Nitrobenzene-d5	2.38		mg/kg wet	3.333		71	30-130			
Surrogate: Phenol-d6	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: p-Terphenyl-d14	3.10		mg/kg wet	3.333		93	30-130			

LCS

1,1-Biphenyl	2.38	0.333	mg/kg wet	3.333		71	40-140			
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140			
2,3,4,6-Tetrachlorophenol	2.77	1.67	mg/kg wet	3.333		83	30-130			
2,4,5-Trichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130			
2,4,6-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2,4-Dichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dimethylphenol	2.79	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dinitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
2,4-Dinitrotoluene	3.06	0.333	mg/kg wet	3.333		92	40-140			
2,6-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.19	0.333	mg/kg wet	3.333		66	40-140			
2-Chlorophenol	2.62	0.333	mg/kg wet	3.333		79	30-130			
2-Methylnaphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140			
2-Methylphenol	2.64	0.333	mg/kg wet	3.333		79	30-130			
2-Nitroaniline	2.56	0.333	mg/kg wet	3.333		77	40-140			
2-Nitrophenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
3,3'-Dichlorobenzidine	2.32	0.667	mg/kg wet	3.333		70	40-140			
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130			
3-Nitroaniline	2.96	0.333	mg/kg wet	3.333		89	40-140			
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140			
4-Chloro-3-Methylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.50	0.667	mg/kg wet	3.333		75	40-140			
4-Chloro-phenyl-phenyl ether	2.59	0.333	mg/kg wet	3.333		78	40-140			
4-Nitroaniline	2.78	0.333	mg/kg wet	3.333		84	40-140			
4-Nitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
Acenaphthene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.66	0.667	mg/kg wet	3.333		80	40-140			
Aniline	2.33	0.667	mg/kg wet	3.333		70	40-140			
Anthracene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Azobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)anthracene	2.97	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

Benzo(a)pyrene	2.97	0.167	mg/kg wet	3.333		89	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Benzoic Acid	2.69	1.67	mg/kg wet	3.333		81	40-140			
Benzyl Alcohol	2.54	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Chloroethoxy)methane	2.70	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Chloroethyl)ether	2.58	0.333	mg/kg wet	3.333		78	40-140			
bis(2-chloroisopropyl)Ether	2.62	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Ethylhexyl)phthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Butylbenzylphthalate	3.46	0.333	mg/kg wet	3.333		104	40-140			
Carbazole	2.83	0.333	mg/kg wet	3.333		85	40-140			
Chrysene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Dibenzo(a,h)Anthracene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Dibenzofuran	2.55	0.333	mg/kg wet	3.333		77	40-140			
Diethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Dimethylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140			
Di-n-butylphthalate	3.38	0.333	mg/kg wet	3.333		101	40-140			
Di-n-octylphthalate	3.31	0.333	mg/kg wet	3.333		99	40-140			
Fluoranthene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorobenzene	2.43	0.167	mg/kg wet	3.333		73	40-140			
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorocyclopentadiene	2.34	1.67	mg/kg wet	3.333		70	40-140			
Hexachloroethane	2.38	0.333	mg/kg wet	3.333		71	40-140			
Indeno(1,2,3-cd)Pyrene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Isophorone	2.69	0.333	mg/kg wet	3.333		81	40-140			
Naphthalene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Nitrobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
N-Nitrosodimethylamine	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	2.58	0.333	mg/kg wet	3.333		77	40-140			
Pentachlorophenol	2.59	1.67	mg/kg wet	3.333		78	30-130			
Phenanthrene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Phenol	3.24	0.333	mg/kg wet	3.333		97	30-130			
Pyrene	3.32	0.333	mg/kg wet	3.333		100	40-140			
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.94		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.90		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.84		mg/kg wet	5.000		77	30-130			
Surrogate: Nitrobenzene-d5	2.58		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	4.18		mg/kg wet	5.000		84	30-130			
Surrogate: p-Terphenyl-d14	3.39		mg/kg wet	3.333		102	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CI52818 - 3546

LCS Dup

1,1-Biphenyl	2.26	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2,4-Trichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	6	30	
1,2-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	13	30	
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140	13	30	
1,4-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	14	30	
2,3,4,6-Tetrachlorophenol	2.66	1.67	mg/kg wet	3.333		80	30-130	4	30	
2,4,5-Trichlorophenol	2.68	0.333	mg/kg wet	3.333		81	30-130	3	30	
2,4,6-Trichlorophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	6	30	
2,4-Dichlorophenol	2.64	0.333	mg/kg wet	3.333		79	30-130	4	30	
2,4-Dimethylphenol	2.61	0.333	mg/kg wet	3.333		78	30-130	7	30	
2,4-Dinitrophenol	2.75	1.67	mg/kg wet	3.333		83	30-130	0.3	30	
2,4-Dinitrotoluene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.8	30	
2,6-Dinitrotoluene	2.84	0.333	mg/kg wet	3.333		85	40-140	3	30	
2-Chloronaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	5	30	
2-Chlorophenol	2.42	0.333	mg/kg wet	3.333		73	30-130	8	30	
2-Methylnaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	6	30	
2-Methylphenol	2.46	0.333	mg/kg wet	3.333		74	30-130	7	30	
2-Nitroaniline	2.44	0.333	mg/kg wet	3.333		73	40-140	5	30	
2-Nitrophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
3,3'-Dichlorobenzidine	2.49	0.667	mg/kg wet	3.333		75	40-140	7	30	
3+4-Methylphenol	6.04	0.667	mg/kg wet	6.667		91	30-130	6	30	
3-Nitroaniline	3.02	0.333	mg/kg wet	3.333		91	40-140	2	30	
4,6-Dinitro-2-Methylphenol	2.71	1.67	mg/kg wet	3.333		81	30-130	2	30	
4-Bromophenyl-phenylether	2.45	0.333	mg/kg wet	3.333		74	40-140	7	30	
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		83	30-130	4	30	
4-Chloroaniline	2.56	0.667	mg/kg wet	3.333		77	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.50	0.333	mg/kg wet	3.333		75	40-140	4	30	
4-Nitroaniline	2.78	0.333	mg/kg wet	3.333		83	40-140	0.3	30	
4-Nitrophenol	2.73	1.67	mg/kg wet	3.333		82	30-130	0.9	30	
Acenaphthene	2.61	0.333	mg/kg wet	3.333		78	40-140	4	30	
Acenaphthylene	2.62	0.333	mg/kg wet	3.333		79	40-140	4	30	
Acetophenone	2.45	0.667	mg/kg wet	3.333		73	40-140	8	30	
Aniline	2.19	0.667	mg/kg wet	3.333		66	40-140	6	30	
Anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140	4	30	
Azobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	7	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	4	30	
Benzo(a)pyrene	2.82	0.167	mg/kg wet	3.333		85	40-140	5	30	
Benzo(b)fluoranthene	2.82	0.333	mg/kg wet	3.333		84	40-140	4	30	
Benzo(g,h,i)perylene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
Benzo(k)fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	7	30	
Benzoic Acid	2.66	1.67	mg/kg wet	3.333		80	40-140	1	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	11	30	
bis(2-Chloroethoxy)methane	2.52	0.333	mg/kg wet	3.333		76	40-140	7	30	
bis(2-Chloroethyl)ether	2.43	0.333	mg/kg wet	3.333		73	40-140	6	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CI52818 - 3546										
bis(2-chloroisopropyl)Ether	2.35	0.333	mg/kg wet	3.333		70	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	6	30	
Butylbenzylphthalate	3.27	0.333	mg/kg wet	3.333		98	40-140	6	30	
Carbazole	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Chrysene	2.83	0.167	mg/kg wet	3.333		85	40-140	5	30	
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140	3	30	
Dibenzofuran	2.44	0.333	mg/kg wet	3.333		73	40-140	4	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	3	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	4	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	4	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Fluoranthene	2.91	0.333	mg/kg wet	3.333		87	40-140	4	30	
Fluorene	2.64	0.333	mg/kg wet	3.333		79	40-140	4	30	
Hexachlorobenzene	2.40	0.167	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorobutadiene	2.27	0.333	mg/kg wet	3.333		68	40-140	10	30	
Hexachlorocyclopentadiene	2.14	1.67	mg/kg wet	3.333		64	40-140	9	30	
Hexachloroethane	2.04	0.333	mg/kg wet	3.333		61	40-140	15	30	
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140	4	30	
Isophorone	2.53	0.333	mg/kg wet	3.333		76	40-140	6	30	
Naphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140	7	30	
Nitrobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	7	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.43	0.333	mg/kg wet	3.333		73	40-140	8	30	
N-nitrosodiphenylamine	2.48	0.333	mg/kg wet	3.333		75	40-140	4	30	
Pentachlorophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	3	30	
Phenanthrene	2.52	0.333	mg/kg wet	3.333		75	40-140	4	30	
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130	9	30	
Pyrene	3.08	0.333	mg/kg wet	3.333		92	40-140	8	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	16	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2,4,6-Tribromophenol	3.85		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.65		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Fluorobiphenyl	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorophenol	3.49		mg/kg wet	5.000		70	30-130			
Surrogate: Nitrobenzene-d5	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: Phenol-d6	3.83		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.22		mg/kg wet	3.333		96	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

Notes and Definitions

- Z-10 Soil pH measured in water at 23 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509751

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15090751
 Date Project Due: 10/2/15
 Days For Project: 3 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

* No

Air No.:

2. Were Custody Seals Present?

No

3. Were Custody Seals Intact?

N/A

4. Is Radiation count < 100 CPM?

Yes

5. Is a cooler present?

Yes

Cooler Temp: 6.1

Iced With: Ice

6. Was COC included with samples?

Yes

7. Was COC signed and dated by client?

Yes

8. Does the COC match the sample

Yes

9. Is COC complete and correct?

Yes

10. Are the samples properly preserved?

Yes

11. Proper sample containers used?

Yes

12. Any air bubbles in the VOA vials?

N/A

13. Holding times exceeded?

No

14. Sufficient sample volumes?

Yes

15. Any Subcontracting needed?

No

16. Are ESS labels on correct containers?

Yes No

17. Were samples received intact?

Yes No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

66 vials frozen @ 1305 JR 9/29/15

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature]

Date/Time: 9/29/15 1137

Reviewed By: [Signature]

Date/Time: 9/29/15 1305

1509751

ESS Lab #

Reporting Limits

CHAIN OF CUSTODY

Turn Time 3 Days

Regulatory State Rhode Island

RI DEM RDEC

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

Company Name Charter Environmental
Contact Person Paul J. Leafanti, Jr.
City Boston State MA
Telephone Number (857) 246-6812 FAX Number

Project # 74-15-0002.134 Project Name Textron Providence
Address 500 Harrison Avenue, Suite 4R PO #
Zip Code 02118
Email Address pleofanti@charter.us

Electronic Deliverables Data Checker Other (Please Specify →) Excel

Is this project for any of the following?:
 OCT RCP MA MCP ORGP DOD

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	VOC Low Level	SVOC	RCRA 8	TPH
1	9/29/15	10:35	Grab	Soil	Lopes 10% + sand 9	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitaier J-Jar O-Other P-Poly S-Sterile V-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
Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAcAc, NaOH, 9-NH4Cl, 10-Other

Number of Containers: 1 1 1 2 1
Sampled by: G. Gilbert-Thielsch

Comments: Please specify "Other" preservative and containers types in this space
Please CC: mpolsky@thielsch.com

Laboratory Use Only
Cooler Present: Yes Drop Off Pickup
Seals Intact:
Cooler Temperature: 6.1° F Technician Hours →
Received by: (Signature, Date & Time) 9/29/15 11:00 AM
Received by: (Signature, Date & Time) 9/29/15

Received by: (Signature, Date & Time) 9/29/15
Received by: (Signature, Date & Time) 9/29/15



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1510195

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 9:25 am, Oct 14, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

SAMPLE RECEIPT

The following samples were received on October 07, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on October 7, 2015 at 21:25.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510195-01	Lopes Raynham 10% Org 4	Soil	6010C, 7010, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510195-01 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (40% @ 50-200%)
- 1510195-01RE1 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (49% @ 50-200%)
- CJ50931-BS1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (170% @ 70-130%)
- CJ50931-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (170% @ 70-130%)
- CJ50931-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
1,4-Dioxane (28% @ 20%)
- CJ51332-BS1 **Blank Spike recovery is above upper control limit (B+).**
Methylene Chloride (138% @ 70-130%), Vinyl Acetate (164% @ 70-130%)
- CJ51332-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (163% @ 70-130%)

8270D Semi-Volatile Organic Compounds

- CYJ0108-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (103% @ 80-120%), bis(2-Ethylhexyl)phthalate (78% @ 80-120%), Di-n-octylphthalate (78% @ 80-120%)
- CYJ0108-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzo(g,h,i)perylene (26% @ 20%), Dibenzo(a,h)Anthracene (25% @ 20%), Hexachlorocyclopentadiene (34% @ 20%), Indeno(1,2,3-cd)Pyrene (23% @ 20%)
- CYJ0108-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
bis(2-Ethylhexyl)phthalate (22% @ 20%), Di-n-octylphthalate (22% @ 20%)

Total Metals

- CJ50818-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Lead (68% @ 69-131%)

No other observations noted.

End of Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
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	ND (2.44)		6010C		1	KJK	10/09/15 19:51	2.15	100	CJ50818
Barium	17.8 (2.44)		6010C		1	KJK	10/09/15 19:51	2.15	100	CJ50818
Cadmium	ND (0.49)		6010C		1	KJK	10/09/15 19:51	2.15	100	CJ50818
Chromium	5.29 (0.97)		6010C		1	KJK	10/09/15 19:51	2.15	100	CJ50818
Lead	22.8 (4.87)		6010C		1	KJK	10/09/15 19:51	2.15	100	CJ50818
Mercury	0.038 (0.033)		7471B		1	PJP	10/08/15 15:28	0.63	40	CJ50816
Selenium	ND (2.44)		7010		5	JP	10/13/15 20:45	2.15	100	CJ50818
Silver	ND (0.49)		6010C		1	KJK	10/09/15 19:51	2.15	100	CJ50818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
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 (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,1,1-Trichloroethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,1,2,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,1,2-Trichloroethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,1-Dichloroethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,1-Dichloroethene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,1-Dichloropropene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2,3-Trichlorobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2,3-Trichloropropane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2,4-Trichlorobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2,4-Trimethylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2-Dibromo-3-Chloropropane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2-Dibromoethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2-Dichlorobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2-Dichloroethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,2-Dichloropropane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,3,5-Trimethylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,3-Dichlorobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,3-Dichloropropane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,4-Dichlorobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1,4-Dioxane	ND (0.105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
1-Chlorohexane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
2,2-Dichloropropane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
2-Butanone	ND (0.0524)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
2-Chlorotoluene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
2-Hexanone	ND (0.0524)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
4-Chlorotoluene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
4-Isopropyltoluene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
4-Methyl-2-Pentanone	ND (0.0524)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Acetone	ND (0.0524)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Benzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Bromobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
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 (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Bromodichloromethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Bromoform	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Bromomethane	ND (0.0105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Carbon Disulfide	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Carbon Tetrachloride	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Chlorobenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Chloroethane	ND (0.0105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Chloroform	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Chloromethane	ND (0.0105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
cis-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
cis-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Dibromochloromethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Dibromomethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Dichlorodifluoromethane	ND (0.0105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Diethyl Ether	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Di-isopropyl ether	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Ethyl tertiary-butyl ether	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Ethylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Hexachlorobutadiene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Isopropylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Methyl tert-Butyl Ether	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Methylene Chloride	ND (0.0262)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Naphthalene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
n-Butylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
n-Propylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
sec-Butylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Styrene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
tert-Butylbenzene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Tertiary-amyl methyl ether	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Tetrachloroethene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Tetrahydrofuran	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
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 (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
trans-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
trans-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Trichloroethene	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Trichlorofluoromethane	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Vinyl Acetate	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Vinyl Chloride	ND (0.0105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Xylene O	ND (0.0052)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Xylene P,M	ND (0.0105)		8260B Low		1	10/09/15 20:07	CYJ0122	CJ50931
Xylenes (Total)	ND (0.0105)		8260B Low		1	10/09/15 20:07		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>120 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>71 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>95 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/8/15 9:45

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	307 (40.7)		8100M		1	10/11/15 0:54	CYJ0139	CJ50711
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		96 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/8/15 9:45

8270D Semi-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-Biphenyl	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
1,2,4-Trichlorobenzene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
1,2-Dichlorobenzene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
1,3-Dichlorobenzene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
1,4-Dichlorobenzene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,3,4,6-Tetrachlorophenol	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,4,5-Trichlorophenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,4,6-Trichlorophenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,4-Dichlorophenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,4-Dimethylphenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,4-Dinitrophenol	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,4-Dinitrotoluene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2,6-Dinitrotoluene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2-Chloronaphthalene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2-Chlorophenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2-Methylnaphthalene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2-Methylphenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2-Nitroaniline	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
2-Nitrophenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
3,3'-Dichlorobenzidine	ND (0.743)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
3+4-Methylphenol	ND (0.743)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
3-Nitroaniline	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4,6-Dinitro-2-Methylphenol	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4-Bromophenyl-phenylether	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4-Chloro-3-Methylphenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4-Chloroaniline	ND (0.743)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4-Chloro-phenyl-phenyl ether	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4-Nitroaniline	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
4-Nitrophenol	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Acenaphthene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Acenaphthylene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Acetophenone	ND (0.743)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/8/15 9:45

8270D Semi-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>
Aniline	ND (0.743)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Anthracene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Azobenzene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzo(a)anthracene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzo(a)pyrene	0.313 (0.186)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzo(b)fluoranthene	0.513 (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzo(g,h,i)perylene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzo(k)fluoranthene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzoic Acid	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Benzyl Alcohol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
bis(2-Chloroethoxy)methane	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
bis(2-Chloroethyl)ether	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
bis(2-chloroisopropyl)Ether	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
bis(2-Ethylhexyl)phthalate	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Butylbenzylphthalate	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Carbazole	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Chrysene	0.370 (0.186)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Dibenzo(a,h)Anthracene	ND (0.186)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Dibenzofuran	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Diethylphthalate	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Dimethylphthalate	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Di-n-butylphthalate	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Di-n-octylphthalate	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Fluoranthene	0.428 (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Fluorene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Hexachlorobenzene	ND (0.186)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Hexachlorobutadiene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Hexachlorocyclopentadiene	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Hexachloroethane	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Indeno(1,2,3-cd)Pyrene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Isophorone	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Naphthalene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/8/15 9:45

8270D Semi-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>
Nitrobenzene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
N-Nitrosodimethylamine	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
N-Nitroso-Di-n-Propylamine	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
N-nitrosodiphenylamine	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Pentachlorophenol	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Phenanthrene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Phenol	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Pyrene	ND (0.371)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712
Pyridine	ND (1.86)		8270D		1	10/08/15 18:18	CYJ0108	CJ50712

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>55 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>73 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>51 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>49 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>51 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>68 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.71 (N/A)		9045		1	JLK	10/08/15 14:38	S.U.	CJ50805
Corrosivity (pH) Sample Temp	Soil pH measured in water at 21 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01RE1
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	10/13/15 13:05	CYJ0140	CJ51332
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,1,2,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1,4-Dioxane	ND (0.103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
1-Chlorohexane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
2-Butanone	ND (0.0513)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
2-Chlorotoluene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
2-Hexanone	ND (0.0513)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
4-Chlorotoluene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
4-Methyl-2-Pentanone	ND (0.0513)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Acetone	ND (0.0513)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Benzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Bromobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01RE1
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	10/13/15 13:05	CYJ0140	CJ51332
Bromodichloromethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Bromoform	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Bromomethane	ND (0.0103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Carbon Disulfide	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Chlorobenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Chloroethane	ND (0.0103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Chloroform	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Chloromethane	ND (0.0103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Dibromochloromethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Dibromomethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Diethyl Ether	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Di-isopropyl ether	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Ethylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Isopropylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Methylene Chloride	ND (0.0257)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Naphthalene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
n-Butylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
n-Propylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
sec-Butylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Styrene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
tert-Butylbenzene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Tetrachloroethene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Tetrahydrofuran	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 4
Date Sampled: 10/07/15 16:25
Percent Solids: 96
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510195
ESS Laboratory Sample ID: 1510195-01RE1
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	10/13/15 13:05	CYJ0140	CJ51332
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Trichloroethene	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Vinyl Acetate	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Vinyl Chloride	ND (0.0103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Xylene O	ND (0.0051)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Xylene P,M	ND (0.0103)		8260B Low		1	10/13/15 13:05	CYJ0140	CJ51332
Xylenes (Total)	ND (0.0103)		8260B Low		1	10/13/15 13:05		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>118 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>75 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>90 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ50816 - 7471A

Blank

Mercury ND 0.033 mg/kg wet

LCS

Mercury 8.97 1.80 mg/kg wet 9.700 92 80-120

LCS Dup

Mercury 9.15 1.90 mg/kg wet 9.700 94 80-120 2 20

Batch CJ50818 - 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 0.50 mg/kg wet
Silver ND 0.50 mg/kg wet

LCS

Arsenic 50.0 9.26 mg/kg wet 52.30 96 80-120
Barium 138 9.26 mg/kg wet 145.0 95 80-120
Cadmium 55.0 1.85 mg/kg wet 71.60 77 62-138
Chromium 79.1 3.70 mg/kg wet 88.50 89 80-120
Lead 62.1 18.5 mg/kg wet 77.80 80 69-131
Selenium 61.2 9.26 mg/kg wet 81.10 75 64-137
Silver 124 1.85 mg/kg wet 114.0 109 80-120

LCS Dup

Arsenic 44.9 9.80 mg/kg wet 52.30 86 80-120 11 20
Barium 133 9.80 mg/kg wet 145.0 91 80-120 4 20
Cadmium 51.8 1.96 mg/kg wet 71.60 72 62-138 6 20
Chromium 75.0 3.92 mg/kg wet 88.50 85 80-120 5 20
Lead 52.8 19.6 mg/kg wet 77.80 68 69-131 16 20 B-
Selenium 57.4 9.80 mg/kg wet 81.10 71 64-137 6 20
Silver 113 1.96 mg/kg wet 114.0 99 80-120 9 20

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50931 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ50931 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ50931 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0566		mg/kg wet	0.05000		113	70-130			
Surrogate: 4-Bromofluorobenzene	0.0414		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0456		mg/kg wet	0.05000		91	70-130			
Surrogate: Toluene-d8	0.0445		mg/kg wet	0.05000		89	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,1,2,2-Tetrachloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1,2-Trichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,1-Dichloroethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130			
1,1-Dichloroethene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,1-Dichloropropene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2,4-Trimethylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromo-3-Chloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
1,2-Dichloropropane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,3,5-Trimethylbenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ50931 - 5035

1,4-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,4-Dioxane	0.944	0.100	mg/kg wet	1.000		94	70-130			
1-Chlorohexane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
2-Butanone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
2-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.264	0.0500	mg/kg wet	0.2500		106	70-130			
4-Chlorotoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
4-Methyl-2-Pentanone	0.283	0.0500	mg/kg wet	0.2500		113	70-130			
Acetone	0.292	0.0500	mg/kg wet	0.2500		117	70-130			
Benzene	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
Bromobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Bromochloromethane	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
Bromodichloromethane	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Bromomethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130			
Carbon Disulfide	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
Carbon Tetrachloride	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0472	0.0100	mg/kg wet	0.05000		94	70-130			
Chloroform	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Chloromethane	0.0578	0.0100	mg/kg wet	0.05000		116	70-130			
cis-1,2-Dichloroethene	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
cis-1,3-Dichloropropene	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Dibromochloromethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Dibromomethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Dichlorodifluoromethane	0.0577	0.0100	mg/kg wet	0.05000		115	70-130			
Diethyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Ethyl tertiary-butyl ether	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Ethylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Methyl tert-Butyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0646	0.0250	mg/kg wet	0.05000		129	70-130			
Naphthalene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Tertiary-amyl methyl ether	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
Tetrachloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Tetrahydrofuran	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ50931 - 5035

Toluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,2-Dichloroethene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Trichlorofluoromethane	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Vinyl Acetate	0.0850	0.0050	mg/kg wet	0.05000		170	70-130			B+
Vinyl Chloride	0.0597	0.0100	mg/kg wet	0.05000		119	70-130			
Xylene O	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Xylene P,M	0.0977	0.0100	mg/kg wet	0.1000		98	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0584</i>		mg/kg wet	<i>0.05000</i>		<i>117</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0489</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0508</i>		mg/kg wet	<i>0.05000</i>		<i>102</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0499</i>		mg/kg wet	<i>0.05000</i>		<i>100</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
1,1,1-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	1	25	
1,1,2,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
1,1,2-Trichloroethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
1,1-Dichloroethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
1,1-Dichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	0.5	25	
1,1-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	0.3	25	
1,2,3-Trichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
1,2,3-Trichloropropane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
1,2,4-Trichlorobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	10	25	
1,2,4-Trimethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	11	25	
1,2-Dibromoethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	10	25	
1,2-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	7	25	
1,2-Dichloroethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	0.8	25	
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,3,5-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
1,3-Dichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
1,3-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
1,4-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,4-Dioxane	1.24	0.100	mg/kg wet	1.000		124	70-130	28	20	D+
1-Chlorohexane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
2,2-Dichloropropane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	0.5	25	
2-Butanone	0.264	0.0500	mg/kg wet	0.2500		106	70-130	2	25	
2-Chlorotoluene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
2-Hexanone	0.294	0.0500	mg/kg wet	0.2500		118	70-130	11	25	
4-Chlorotoluene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
4-Methyl-2-Pentanone	0.301	0.0500	mg/kg wet	0.2500		120	70-130	6	25	
Acetone	0.310	0.0500	mg/kg wet	0.2500		124	70-130	6	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510195

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 CJ50931 - 5035

Benzene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	0.4	25	
Bromobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
Bromochloromethane	0.0587	0.0050	mg/kg wet	0.05000		117	70-130	3	25	
Bromodichloromethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	0.5	25	
Bromoform	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	17	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	3	25	
Carbon Disulfide	0.0581	0.0050	mg/kg wet	0.05000		116	70-130	1	25	
Carbon Tetrachloride	0.0552	0.0050	mg/kg wet	0.05000		110	70-130	4	25	
Chlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130	11	25	
Chloroform	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	0.6	25	
Chloromethane	0.0556	0.0100	mg/kg wet	0.05000		111	70-130	4	25	
cis-1,2-Dichloroethene	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	0	25	
cis-1,3-Dichloropropene	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	0.5	25	
Dibromochloromethane	0.0625	0.0050	mg/kg wet	0.05000		125	70-130	10	25	
Dibromomethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
Dichlorodifluoromethane	0.0574	0.0100	mg/kg wet	0.05000		115	70-130	0.4	25	
Diethyl Ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Di-isopropyl ether	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
Ethyl tertiary-butyl ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	0.9	25	
Ethylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	7	25	
Hexachlorobutadiene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	13	25	
Isopropylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
Methyl tert-Butyl Ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	4	25	
Methylene Chloride	0.0648	0.0250	mg/kg wet	0.05000		130	70-130	0.3	25	
Naphthalene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
n-Butylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
n-Propylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
sec-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Styrene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
tert-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Tertiary-amyl methyl ether	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	2	25	
Tetrachloroethene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	10	25	
Tetrahydrofuran	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
Toluene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
trans-1,2-Dichloroethene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
trans-1,3-Dichloropropene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.6	25	
Trichloroethene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	0.2	25	
Trichlorofluoromethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Vinyl Acetate	0.0852	0.0050	mg/kg wet	0.05000		170	70-130	0.3	25	B+
Vinyl Chloride	0.0597	0.0100	mg/kg wet	0.05000		119	70-130	0	25	
Xylene O	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	9	25	
Xylene P,M	0.106	0.0100	mg/kg wet	0.1000		106	70-130	8	25	
Xylenes (Total)	0.158	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0555		mg/kg wet	0.05000		111	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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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 CJ50931 - 5035

Surrogate: 4-Bromofluorobenzene	0.0500		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0490		mg/kg wet	0.05000		98	70-130			
Surrogate: Toluene-d8	0.0498		mg/kg wet	0.05000		100	70-130			

Batch CJ51332 - 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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ51332 - 5035

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							
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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0544		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0420		mg/kg wet	0.05000		84	70-130			
Surrogate: Dibromofluoromethane	0.0470		mg/kg wet	0.05000		94	70-130			
Surrogate: Toluene-d8	0.0432		mg/kg wet	0.05000		86	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2,2-Tetrachloroethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,1,2-Trichloroethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
1,1-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			



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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 CJ51332 - 5035

1,1-Dichloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,1-Dichloropropene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,3-Trichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,4-Trimethylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dibromoethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dichlorobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
1,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,3,5-Trimethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,3-Dichloropropane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130			
1-Chlorohexane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
2-Butanone	0.263	0.0500	mg/kg wet	0.2500		105	70-130			
2-Chlorotoluene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
2-Hexanone	0.286	0.0500	mg/kg wet	0.2500		114	70-130			
4-Chlorotoluene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
4-Isopropyltoluene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
4-Methyl-2-Pentanone	0.304	0.0500	mg/kg wet	0.2500		121	70-130			
Acetone	0.298	0.0500	mg/kg wet	0.2500		119	70-130			
Benzene	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Bromochloromethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
Bromodichloromethane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
Bromoform	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0488	0.0100	mg/kg wet	0.05000		98	70-130			
Carbon Disulfide	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Carbon Tetrachloride	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Chlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Chloroethane	0.0538	0.0100	mg/kg wet	0.05000		108	70-130			
Chloroform	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Chloromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130			
cis-1,2-Dichloroethene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130			
cis-1,3-Dichloropropene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
Dibromochloromethane	0.0586	0.0050	mg/kg wet	0.05000		117	70-130			
Dibromomethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0546	0.0100	mg/kg wet	0.05000		109	70-130			
Diethyl Ether	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Di-isopropyl ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Ethyl tertiary-butyl ether	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ51332 - 5035

Ethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Hexachlorobutadiene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Isopropylbenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0692	0.0250	mg/kg wet	0.05000		138	70-130			B+
Naphthalene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
n-Butylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
n-Propylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
sec-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Styrene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
tert-Butylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Trichlorofluoromethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Vinyl Acetate	0.0820	0.0050	mg/kg wet	0.05000		164	70-130			B+
Vinyl Chloride	0.0579	0.0100	mg/kg wet	0.05000		116	70-130			
Xylene O	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Xylene P,M	0.0991	0.0100	mg/kg wet	0.1000		99	70-130			
Xylenes (Total)	0.148	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0559		mg/kg wet	0.05000		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0492		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	0.7	25	
1,1,1-Trichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
1,1,2,2-Tetrachloroethane	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
1,1,2-Trichloroethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	3	25	
1,1-Dichloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
1,1-Dichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
1,1-Dichloropropene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,3-Trichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	0.3	25	
1,2,3-Trichloropropane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
1,2,4-Trichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.9	25	
1,2,4-Trimethylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
1,2-Dibromo-3-Chloropropane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	0.9	25	
1,2-Dichlorobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	0.2	25	
1,2-Dichloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	1	25	
1,2-Dichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	0.9	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ51332 - 5035

1,3,5-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.7	25	
1,3-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.3	25	
1,3-Dichloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	0.7	25	
1,4-Dichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.3	25	
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130	2	20	
1-Chlorohexane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
2,2-Dichloropropane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
2-Butanone	0.256	0.0500	mg/kg wet	0.2500		103	70-130	3	25	
2-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
2-Hexanone	0.282	0.0500	mg/kg wet	0.2500		113	70-130	1	25	
4-Chlorotoluene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
4-Isopropyltoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
4-Methyl-2-Pentanone	0.294	0.0500	mg/kg wet	0.2500		117	70-130	3	25	
Acetone	0.294	0.0500	mg/kg wet	0.2500		118	70-130	1	25	
Benzene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	4	25	
Bromobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
Bromochloromethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	2	25	
Bromodichloromethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	2	25	
Bromoform	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Bromomethane	0.0490	0.0100	mg/kg wet	0.05000		98	70-130	0.3	25	
Carbon Disulfide	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	3	25	
Carbon Tetrachloride	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Chlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Chloroethane	0.0438	0.0100	mg/kg wet	0.05000		88	70-130	21	25	
Chloroform	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chloromethane	0.0511	0.0100	mg/kg wet	0.05000		102	70-130	6	25	
cis-1,2-Dichloroethene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
cis-1,3-Dichloropropene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	0.5	25	
Dibromochloromethane	0.0605	0.0050	mg/kg wet	0.05000		121	70-130	3	25	
Dibromomethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
Dichlorodifluoromethane	0.0529	0.0100	mg/kg wet	0.05000		106	70-130	3	25	
Diethyl Ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	0.3	25	
Di-isopropyl ether	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Ethyl tertiary-butyl ether	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
Ethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.5	25	
Hexachlorobutadiene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Isopropylbenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	0.3	25	
Methylene Chloride	0.0603	0.0250	mg/kg wet	0.05000		121	70-130	14	25	
Naphthalene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
n-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
n-Propylbenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
sec-Butylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	3	25	
Styrene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	0.7	25	
tert-Butylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.3	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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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 CJ51332 - 5035

Tertiary-amyl methyl ether	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	0.8	25	
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	0	25	
Tetrahydrofuran	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
Toluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
trans-1,2-Dichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	0.1	25	
Trichloroethene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
Trichlorofluoromethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Vinyl Acetate	0.0814	0.0050	mg/kg wet	0.05000		163	70-130	0.7	25	B+
Vinyl Chloride	0.0551	0.0100	mg/kg wet	0.05000		110	70-130	5	25	
Xylene O	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	0	25	
Xylene P,M	0.0968	0.0100	mg/kg wet	0.1000		97	70-130	2	25	
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0546		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0479		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0485		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0489		mg/kg wet	0.05000		98	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50711 - 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							
Triacotane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	5.31		mg/kg wet	5.000		106	40-140			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		81	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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 CJ50711 - 3546

Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Total Petroleum Hydrocarbons	31.7	37.5	mg/kg wet	35.00		91	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		93	40-140			

Surrogate: O-Terphenyl

4.47 mg/kg wet 5.000 89 40-140

LCS Dup

Decane (C10)	2.1	0.2	mg/kg wet	2.500		84	40-140	4	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		112	40-140	18	25	
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		96	40-140	11	25	
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		109	40-140	16	25	
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		115	40-140	18	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		103	40-140	15	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	16	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140	0.3	25	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		111	40-140	17	25	
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		109	40-140	16	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		106	40-140	19	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		98	40-140	9	25	
Total Petroleum Hydrocarbons	37.3	37.5	mg/kg wet	35.00		107	40-140	16	25	
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140	18	25	

Surrogate: O-Terphenyl

5.11 mg/kg wet 5.000 102 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	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							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							



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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.67		mg/kg wet	3.333		80	30-130			
Surrogate: 2,4,6-Tribromophenol	4.80		mg/kg wet	5.000		96	30-130			
Surrogate: 2-Chlorophenol-d4	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.91		mg/kg wet	3.333		87	30-130			
Surrogate: 2-Fluorophenol	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: Nitrobenzene-d5	3.02		mg/kg wet	3.333		91	30-130			
Surrogate: Phenol-d6	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: p-Terphenyl-d14	3.40		mg/kg wet	3.333		102	30-130			

LCS

1,1-Biphenyl	2.34	0.333	mg/kg wet	3.333		70	40-140			
1,2,4-Trichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
1,2-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.29	0.333	mg/kg wet	3.333		69	40-140			
1,4-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140			
2,3,4,6-Tetrachlorophenol	2.64	1.67	mg/kg wet	3.333		79	30-130			
2,4,5-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4,6-Trichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dichlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dimethylphenol	2.44	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		81	30-130			
2,4-Dinitrotoluene	2.90	0.333	mg/kg wet	3.333		87	40-140			
2,6-Dinitrotoluene	2.61	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2-Chlorophenol	2.18	0.333	mg/kg wet	3.333		65	30-130			
2-Methylnaphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
2-Methylphenol	2.20	0.333	mg/kg wet	3.333		66	30-130			
2-Nitroaniline	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.34	0.667	mg/kg wet	3.333		70	40-140			
3+4-Methylphenol	5.30	0.667	mg/kg wet	6.667		79	30-130			
3-Nitroaniline	2.49	0.333	mg/kg wet	3.333		75	40-140			
4,6-Dinitro-2-Methylphenol	2.80	1.67	mg/kg wet	3.333		84	30-130			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

4-Bromophenyl-phenylether	2.86	0.333	mg/kg wet	3.333		86	40-140			
4-Chloro-3-Methylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
4-Chloroaniline	2.10	0.667	mg/kg wet	3.333		63	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	2.58	0.333	mg/kg wet	3.333		77	40-140			
4-Nitrophenol	2.43	1.67	mg/kg wet	3.333		73	30-130			
Acenaphthene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Acetophenone	2.20	0.667	mg/kg wet	3.333		66	40-140			
Aniline	1.97	0.667	mg/kg wet	3.333		59	40-140			
Anthracene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Azobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Benzo(a)anthracene	2.93	0.333	mg/kg wet	3.333		88	40-140			
Benzo(a)pyrene	3.04	0.167	mg/kg wet	3.333		91	40-140			
Benzo(b)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	3.45	0.333	mg/kg wet	3.333		103	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.78	1.67	mg/kg wet	3.333		83	40-140			
Benzyl Alcohol	2.63	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Chloroethoxy)methane	2.35	0.333	mg/kg wet	3.333		71	40-140			
bis(2-Chloroethyl)ether	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-chloroisopropyl)Ether	2.24	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	2.34	0.333	mg/kg wet	3.333		70	40-140			
Butylbenzylphthalate	2.56	0.333	mg/kg wet	3.333		77	40-140			
Carbazole	2.88	0.333	mg/kg wet	3.333		86	40-140			
Chrysene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.40	0.167	mg/kg wet	3.333		102	40-140			
Dibenzofuran	2.42	0.333	mg/kg wet	3.333		73	40-140			
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140			
Dimethylphthalate	2.67	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	2.33	0.333	mg/kg wet	3.333		70	40-140			
Fluoranthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorobenzene	2.72	0.167	mg/kg wet	3.333		82	40-140			
Hexachlorobutadiene	2.48	0.333	mg/kg wet	3.333		74	40-140			
Hexachlorocyclopentadiene	2.79	1.67	mg/kg wet	3.333		84	40-140			
Hexachloroethane	2.28	0.333	mg/kg wet	3.333		68	40-140			
Indeno(1,2,3-cd)Pyrene	3.34	0.333	mg/kg wet	3.333		100	40-140			
Isophorone	2.36	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.35	0.333	mg/kg wet	3.333		71	40-140			
Nitrobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
N-Nitrosodimethylamine	1.95	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.01	0.333	mg/kg wet	3.333		60	40-140			
N-nitrosodiphenylamine	2.79	0.333	mg/kg wet	3.333		84	40-140			



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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Pentachlorophenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
Phenanthrene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Phenol	2.27	0.333	mg/kg wet	3.333		68	30-130			
Pyrene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Pyridine	1.79	1.67	mg/kg wet	3.333		54	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	5.26		mg/kg wet	5.000		105	30-130			
Surrogate: 2-Chlorophenol-d4	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Fluorobiphenyl	2.77		mg/kg wet	3.333		83	30-130			
Surrogate: 2-Fluorophenol	3.58		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.94		mg/kg wet	3.333		88	30-130			
Surrogate: Phenol-d6	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	3.35		mg/kg wet	3.333		100	30-130			

LCS Dup

1,1-Biphenyl	2.16	0.333	mg/kg wet	3.333		65	40-140	8	30	
1,2,4-Trichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	8	30	
1,2-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	6	30	
1,3-Dichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140	9	30	
1,4-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.34	1.67	mg/kg wet	3.333		70	30-130	12	30	
2,4,5-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130	8	30	
2,4,6-Trichlorophenol	2.47	0.333	mg/kg wet	3.333		74	30-130	8	30	
2,4-Dichlorophenol	2.40	0.333	mg/kg wet	3.333		72	30-130	5	30	
2,4-Dimethylphenol	2.30	0.333	mg/kg wet	3.333		69	30-130	6	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	11	30	
2,4-Dinitrotoluene	2.57	0.333	mg/kg wet	3.333		77	40-140	12	30	
2,6-Dinitrotoluene	2.35	0.333	mg/kg wet	3.333		71	40-140	10	30	
2-Chloronaphthalene	2.05	0.333	mg/kg wet	3.333		62	40-140	8	30	
2-Chlorophenol	2.05	0.333	mg/kg wet	3.333		61	30-130	6	30	
2-Methylnaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	6	30	
2-Methylphenol	2.08	0.333	mg/kg wet	3.333		63	30-130	6	30	
2-Nitroaniline	1.98	0.333	mg/kg wet	3.333		59	40-140	9	30	
2-Nitrophenol	2.33	0.333	mg/kg wet	3.333		70	30-130	5	30	
3,3'-Dichlorobenzidine	2.09	0.667	mg/kg wet	3.333		63	40-140	11	30	
3+4-Methylphenol	5.05	0.667	mg/kg wet	6.667		76	30-130	5	30	
3-Nitroaniline	2.22	0.333	mg/kg wet	3.333		67	40-140	12	30	
4,6-Dinitro-2-Methylphenol	2.61	1.67	mg/kg wet	3.333		78	30-130	7	30	
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140	8	30	
4-Chloro-3-Methylphenol	2.29	0.333	mg/kg wet	3.333		69	30-130	4	30	
4-Chloroaniline	1.95	0.667	mg/kg wet	3.333		59	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.32	0.333	mg/kg wet	3.333		70	40-140	10	30	
4-Nitroaniline	2.32	0.333	mg/kg wet	3.333		70	40-140	10	30	
4-Nitrophenol	2.17	1.67	mg/kg wet	3.333		65	30-130	11	30	
Acenaphthene	2.31	0.333	mg/kg wet	3.333		69	40-140	9	30	
Acenaphthylene	2.39	0.333	mg/kg wet	3.333		72	40-140	9	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Acetophenone	2.10	0.667	mg/kg wet	3.333		63	40-140	5	30	
Aniline	1.81	0.667	mg/kg wet	3.333		54	40-140	8	30	
Anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140	9	30	
Azobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	7	30	
Benzo(a)anthracene	2.68	0.333	mg/kg wet	3.333		80	40-140	9	30	
Benzo(a)pyrene	2.75	0.167	mg/kg wet	3.333		83	40-140	10	30	
Benzo(b)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(g,h,i)perylene	3.11	0.333	mg/kg wet	3.333		93	40-140	10	30	
Benzo(k)fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140	13	30	
Benzoic Acid	2.84	1.67	mg/kg wet	3.333		85	40-140	2	30	
Benzyl Alcohol	2.42	0.333	mg/kg wet	3.333		73	40-140	8	30	
bis(2-Chloroethoxy)methane	2.18	0.333	mg/kg wet	3.333		65	40-140	8	30	
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140	8	30	
bis(2-chloroisopropyl)Ether	2.08	0.333	mg/kg wet	3.333		62	40-140	7	30	
bis(2-Ethylhexyl)phthalate	2.17	0.333	mg/kg wet	3.333		65	40-140	8	30	
Butylbenzylphthalate	2.36	0.333	mg/kg wet	3.333		71	40-140	8	30	
Carbazole	2.63	0.333	mg/kg wet	3.333		79	40-140	9	30	
Chrysene	2.62	0.167	mg/kg wet	3.333		79	40-140	10	30	
Dibenzo(a,h)Anthracene	3.07	0.167	mg/kg wet	3.333		92	40-140	10	30	
Dibenzofuran	2.22	0.333	mg/kg wet	3.333		66	40-140	9	30	
Diethylphthalate	2.45	0.333	mg/kg wet	3.333		74	40-140	11	30	
Dimethylphthalate	2.42	0.333	mg/kg wet	3.333		72	40-140	10	30	
Di-n-butylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
Di-n-octylphthalate	2.16	0.333	mg/kg wet	3.333		65	40-140	7	30	
Fluoranthene	2.71	0.333	mg/kg wet	3.333		81	40-140	10	30	
Fluorene	2.43	0.333	mg/kg wet	3.333		73	40-140	10	30	
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140	9	30	
Hexachlorobutadiene	2.27	0.333	mg/kg wet	3.333		68	40-140	9	30	
Hexachlorocyclopentadiene	2.60	1.67	mg/kg wet	3.333		78	40-140	7	30	
Hexachloroethane	2.11	0.333	mg/kg wet	3.333		63	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	3.01	0.333	mg/kg wet	3.333		90	40-140	10	30	
Isophorone	2.22	0.333	mg/kg wet	3.333		66	40-140	6	30	
Naphthalene	2.18	0.333	mg/kg wet	3.333		65	40-140	8	30	
Nitrobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140	8	30	
N-Nitrosodimethylamine	1.83	0.333	mg/kg wet	3.333		55	40-140	6	30	
N-Nitroso-Di-n-Propylamine	1.93	0.333	mg/kg wet	3.333		58	40-140	4	30	
N-nitrosodiphenylamine	2.58	0.333	mg/kg wet	3.333		77	40-140	8	30	
Pentachlorophenol	2.75	1.67	mg/kg wet	3.333		83	30-130	9	30	
Phenanthrene	2.38	0.333	mg/kg wet	3.333		71	40-140	9	30	
Phenol	2.08	0.333	mg/kg wet	3.333		62	30-130	9	30	
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140	8	30	
Pyridine	1.65	1.67	mg/kg wet	3.333		50	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.32		mg/kg wet	3.333		70	30-130			
Surrogate: 2,4,6-Tribromophenol	4.67		mg/kg wet	5.000		93	30-130			
Surrogate: 2-Chlorophenol-d4	3.28		mg/kg wet	5.000		66	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

<i>Surrogate: 2-Fluorobiphenyl</i>	2.48		mg/kg wet	3.333		74	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.25		mg/kg wet	5.000		65	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.63		mg/kg wet	3.333		79	30-130			
<i>Surrogate: Phenol-d6</i>	3.29		mg/kg wet	5.000		66	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	3.01		mg/kg wet	3.333		90	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

Notes and Definitions

- Z-10 Soil pH measured in water at 21 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510195

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Client

ESS Project ID: 15100195
 Date Project Due: 10/12/15
 Days For Project: 3 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present? * No

Air No.: _____

2. Were Custody Seals Present? No

3. Were Custody Seals Intact? N/A

4. Is Radiation count < 100 CPM? Yes

5. Is a cooler present? Yes

Cooler Temp: 10.1

Iced With: Ice

6. Was COC included with samples? Yes

7. Was COC signed and dated by client? Yes

8. Does the COC match the sample Yes

9. Is COC complete and correct? Yes

10. Are the samples properly preserved? Yes

11. Proper sample containers used? Yes

12. Any air bubbles in the VOA vials? N/A

13. Holding times exceeded? No

14. Sufficient sample volumes? Yes

15. Any Subcontracting needed? No

16. Are ESS labels on correct containers? Yes No

17. Were samples received intact? Yes No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

All vials frozen 10/7/15 2125

Sample containers did not have IDs w/ 10/8/15

used sample time to verify sample ID's

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: m-mind

Date/Time: 10/8/15 0930

Reviewed By: NKOSC

Date/Time: 10/8/15 0930

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 1510195
 Reporting Limits Data Checker
 RI DEM RDEC Excel

Turn Time <u>3</u> Days		Regulatory State <u>Rhode Island</u>		Project # <u>74-15-0002.134</u>		Project Name <u>Textron Providence</u>	
Is this project for any of the following? <input type="checkbox"/> OCT RCP <input type="checkbox"/> OMA MCP <input type="checkbox"/> ORGP <input type="checkbox"/> DOD		Address <u>500 Harrison Avenue, Suite 4R</u>		Project # <u>0002.134</u>		Project Name <u>Textron Providence</u>	
City <u>Boston</u> State <u>MA</u>		Zip Code <u>02118</u>		PO #		Analysis	
Telephone Number <u>(857) 246-6812</u>		FAX Number		Email Address <u>plecanti@charter.us</u>		pH: Corrosivity 9045	
Contact Person <u>Paul J. Lecanti, Jr.</u>		Sample Type <u>Grab</u>		Sample Matrix <u>Soil</u>		VOC	
City <u>Boston</u>		Collection Date <u>10/7/15</u>		Collection Time <u>16:25</u>		VOC Low Level	
ESS Lab ID <u>1</u>		Sample ID <u>4</u>		Lopes - Rayham 10% Org		SVOC	
Container Type: <u>AC-Air Cassette</u>		AG-Amber Glass		B-BOD Bottle		RCRA 8	
Container Volume: <u>1-100 mL</u>		2-2.5 gal		3-250 mL		TPH	
Preservation Code: <u>1-Non Preserved</u>		2-HCl		3-H2SO4			
		4-HNO3		5-NaOH			
		6-MeOH		7-Na2S2O3			
		8-ZnAc2		9-NaOH			
		10-Other					
Number of Containers:		1		1		1	

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitaliner J-Jar O-Other P-Poly S-Sterile V-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

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-MeOH 7-Na2S2O3 8-ZnAc2 9-NaOH 10-Other

Laboratory Use Only
 Cooler Present: Drop Off
 Seals Intact: yes Pickup
 Cooler Temperature: 16.13°C Technician Hours: 10/7/15
 Requisitioned by: (Signature, Date & Time) [Signature] 10/7/15
 Received by: (Signature, Date & Time) [Signature] 10/7/15
 Comments: Please specify "Other" preservative and containers types in this space
 Please CC: mpolsky@thielisch.com
 Requisitioned by: (Signature, Date & Time) [Signature] 10/7/15
 Received by: (Signature, Date & Time) [Signature] 10/7/15



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1510197

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 9:26 am, Oct 14, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

SAMPLE RECEIPT

The following samples were received on October 07, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on October 7, 2015 at 21:25.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510197-01	Lopes Raynham 10% Org 2	Soil	6010C, 7010, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ50931-BS1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (170% @ 70-130%)

CJ50931-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (170% @ 70-130%)

CJ50931-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**

1,4-Dioxane (28% @ 20%)

8270D Semi-Volatile Organic Compounds

CYJ0108-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (103% @ 80-120%), bis(2-Ethylhexyl)phthalate (78% @ 80-120%), Di-n-octylphthalate (78% @ 80-120%)

CYJ0108-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

Benzo(g,h,i)perylene (26% @ 20%), Dibenzo(a,h)Anthracene (25% @ 20%), Hexachlorocyclopentadiene (34% @ 20%), Indeno(1,2,3-cd)Pyrene (23% @ 20%)

CYJ0108-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

bis(2-Ethylhexyl)phthalate (22% @ 20%), Di-n-octylphthalate (22% @ 20%)

Total Metals

CJ50818-BSD1 **Blank Spike recovery is below lower control limit (B-).**

Lead (68% @ 69-131%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
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	2.44 (2.26)		6010C		1	KJK	10/09/15 21:36	2.3	100	CJ50818
Barium	17.3 (2.26)		6010C		1	KJK	10/09/15 21:36	2.3	100	CJ50818
Cadmium	ND (0.45)		6010C		1	KJK	10/09/15 21:36	2.3	100	CJ50818
Chromium	6.24 (0.90)		6010C		1	KJK	10/09/15 21:36	2.3	100	CJ50818
Lead	20.5 (4.52)		6010C		1	KJK	10/09/15 21:36	2.3	100	CJ50818
Mercury	0.034 (0.032)		7471B		1	PJP	10/08/15 15:43	0.64	40	CJ50816
Selenium	ND (2.26)		7010		5	JP	10/13/15 21:20	2.3	100	CJ50818
Silver	ND (0.45)		6010C		1	KJK	10/09/15 21:36	2.3	100	CJ50818



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
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	10/09/15 21:04	CYJ0122	CJ50931
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,1,2,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1,4-Dioxane	ND (0.102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
1-Chlorohexane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
2-Butanone	ND (0.0510)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
2-Chlorotoluene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
2-Hexanone	ND (0.0510)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
4-Chlorotoluene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
4-Methyl-2-Pentanone	ND (0.0510)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Acetone	ND (0.0510)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Benzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Bromobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
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	10/09/15 21:04	CYJ0122	CJ50931
Bromodichloromethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Bromoform	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Bromomethane	ND (0.0102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Carbon Disulfide	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Chlorobenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Chloroethane	ND (0.0102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Chloroform	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Chloromethane	ND (0.0102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Dibromochloromethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Dibromomethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Dichlorodifluoromethane	ND (0.0102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Diethyl Ether	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Di-isopropyl ether	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Ethylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Isopropylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Methylene Chloride	ND (0.0255)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Naphthalene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
n-Butylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
n-Propylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
sec-Butylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Styrene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
tert-Butylbenzene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Tetrachloroethene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Tetrahydrofuran	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
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	10/09/15 21:04	CYJ0122	CJ50931
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Trichloroethene	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Vinyl Acetate	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Vinyl Chloride	ND (0.0102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Xylene O	ND (0.0051)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Xylene P,M	ND (0.0102)		8260B Low		1	10/09/15 21:04	CYJ0122	CJ50931
Xylenes (Total)	ND (0.0102)		8260B Low		1	10/09/15 21:04		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>126 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>78 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>89 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/8/15 9:45

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	226 (39.6)		8100M		1	10/10/15 19:04	CYJ0142	CJ50711
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>92 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/8/15 9:45

8270D Semi-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-Biphenyl	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
1,2,4-Trichlorobenzene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
1,2-Dichlorobenzene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
1,3-Dichlorobenzene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
1,4-Dichlorobenzene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,3,4,6-Tetrachlorophenol	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,4,5-Trichlorophenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,4,6-Trichlorophenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,4-Dichlorophenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,4-Dimethylphenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,4-Dinitrophenol	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,4-Dinitrotoluene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2,6-Dinitrotoluene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2-Chloronaphthalene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2-Chlorophenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2-Methylnaphthalene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2-Methylphenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2-Nitroaniline	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
2-Nitrophenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
3,3'-Dichlorobenzidine	ND (0.718)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
3+4-Methylphenol	ND (0.718)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
3-Nitroaniline	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4,6-Dinitro-2-Methylphenol	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4-Bromophenyl-phenylether	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4-Chloro-3-Methylphenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4-Chloroaniline	ND (0.718)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4-Chloro-phenyl-phenyl ether	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4-Nitroaniline	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
4-Nitrophenol	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Acenaphthene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Acenaphthylene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Acetophenone	ND (0.718)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/8/15 9:45

8270D Semi-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>
Aniline	ND (0.718)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Anthracene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Azobenzene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzo(a)anthracene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzo(a)pyrene	0.333 (0.180)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzo(b)fluoranthene	0.559 (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzo(g,h,i)perylene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzo(k)fluoranthene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzoic Acid	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Benzyl Alcohol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
bis(2-Chloroethoxy)methane	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
bis(2-Chloroethyl)ether	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
bis(2-chloroisopropyl)Ether	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
bis(2-Ethylhexyl)phthalate	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Butylbenzylphthalate	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Carbazole	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Chrysene	0.386 (0.180)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Dibenzo(a,h)Anthracene	ND (0.180)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Dibenzofuran	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Diethylphthalate	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Dimethylphthalate	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Di-n-butylphthalate	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Di-n-octylphthalate	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Fluoranthene	0.485 (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Fluorene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Hexachlorobenzene	ND (0.180)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Hexachlorobutadiene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Hexachlorocyclopentadiene	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Hexachloroethane	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Indeno(1,2,3-cd)Pyrene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Isophorone	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Naphthalene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes Raynham 10% Org 2
 Date Sampled: 10/07/15 16:15
 Percent Solids: 96
 Initial Volume: 14.5
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510197
 ESS Laboratory Sample ID: 1510197-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: VSC
 Prepared: 10/8/15 9:45

8270D Semi-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>
Nitrobenzene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
N-Nitrosodimethylamine	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
N-Nitroso-Di-n-Propylamine	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
N-nitrosodiphenylamine	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Pentachlorophenol	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Phenanthrene	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Phenol	ND (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Pyrene	0.391 (0.358)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712
Pyridine	ND (1.80)		8270D		1	10/08/15 19:28	CYJ0108	CJ50712

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	50 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	74 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	51 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	58 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	47 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	58 %		30-130
<i>Surrogate: Phenol-d6</i>	52 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 10% Org 2
Date Sampled: 10/07/15 16:15
Percent Solids: 96

ESS Laboratory Work Order: 1510197
ESS Laboratory Sample ID: 1510197-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.02 (N/A)		9045		1	JLK	10/08/15 14:38	S.U.	CJ50805
Corrosivity (pH) Sample Temp	Soil pH measured in water at 21.2 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

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 CJ50816 - 7471A

Blank

Mercury ND 0.033 mg/kg wet

LCS

Mercury 8.97 1.80 mg/kg wet 9.700 92 80-120

LCS Dup

Mercury 9.15 1.90 mg/kg wet 9.700 94 80-120 2 20

Batch CJ50818 - 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 0.50 mg/kg wet
Silver ND 0.50 mg/kg wet

LCS

Arsenic 50.0 9.26 mg/kg wet 52.30 96 80-120
Barium 138 9.26 mg/kg wet 145.0 95 80-120
Cadmium 55.0 1.85 mg/kg wet 71.60 77 62-138
Chromium 79.1 3.70 mg/kg wet 88.50 89 80-120
Lead 62.1 18.5 mg/kg wet 77.80 80 69-131
Selenium 61.2 9.26 mg/kg wet 81.10 75 64-137
Silver 124 1.85 mg/kg wet 114.0 109 80-120

LCS Dup

Arsenic 44.9 9.80 mg/kg wet 52.30 86 80-120 11 20
Barium 133 9.80 mg/kg wet 145.0 91 80-120 4 20
Cadmium 51.8 1.96 mg/kg wet 71.60 72 62-138 6 20
Chromium 75.0 3.92 mg/kg wet 88.50 85 80-120 5 20
Lead 52.8 19.6 mg/kg wet 77.80 68 69-131 16 20 B-
Selenium 57.4 9.80 mg/kg wet 81.10 71 64-137 6 20
Silver 113 1.96 mg/kg wet 114.0 99 80-120 9 20

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50931 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

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 CJ50931 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

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 CJ50931 - 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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0566		mg/kg wet	0.05000		113	70-130			
Surrogate: 4-Bromofluorobenzene	0.0414		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0456		mg/kg wet	0.05000		91	70-130			
Surrogate: Toluene-d8	0.0445		mg/kg wet	0.05000		89	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,1,2,2-Tetrachloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1,2-Trichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,1-Dichloroethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130			
1,1-Dichloroethene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,1-Dichloropropene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2,4-Trimethylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromo-3-Chloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
1,2-Dichloropropane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,3,5-Trimethylbenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50931 - 5035

1,4-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,4-Dioxane	0.944	0.100	mg/kg wet	1.000		94	70-130			
1-Chlorohexane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
2-Butanone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
2-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.264	0.0500	mg/kg wet	0.2500		106	70-130			
4-Chlorotoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
4-Methyl-2-Pentanone	0.283	0.0500	mg/kg wet	0.2500		113	70-130			
Acetone	0.292	0.0500	mg/kg wet	0.2500		117	70-130			
Benzene	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
Bromobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Bromochloromethane	0.0569	0.0050	mg/kg wet	0.05000		114	70-130			
Bromodichloromethane	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Bromomethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130			
Carbon Disulfide	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
Carbon Tetrachloride	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0472	0.0100	mg/kg wet	0.05000		94	70-130			
Chloroform	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Chloromethane	0.0578	0.0100	mg/kg wet	0.05000		116	70-130			
cis-1,2-Dichloroethene	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
cis-1,3-Dichloropropene	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Dibromochloromethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Dibromomethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Dichlorodifluoromethane	0.0577	0.0100	mg/kg wet	0.05000		115	70-130			
Diethyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Ethyl tertiary-butyl ether	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Ethylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Methyl tert-Butyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0646	0.0250	mg/kg wet	0.05000		129	70-130			
Naphthalene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Tertiary-amyl methyl ether	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
Tetrachloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Tetrahydrofuran	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50931 - 5035

Toluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,2-Dichloroethene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Trichlorofluoromethane	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Vinyl Acetate	0.0850	0.0050	mg/kg wet	0.05000		170	70-130			B+
Vinyl Chloride	0.0597	0.0100	mg/kg wet	0.05000		119	70-130			
Xylene O	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Xylene P,M	0.0977	0.0100	mg/kg wet	0.1000		98	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0584		mg/kg wet	0.05000		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0489		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0499		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	10	25	
1,1,1-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	1	25	
1,1,2,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
1,1,2-Trichloroethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
1,1-Dichloroethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
1,1-Dichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	0.5	25	
1,1-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	0.3	25	
1,2,3-Trichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
1,2,3-Trichloropropane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
1,2,4-Trichlorobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	10	25	
1,2,4-Trimethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	11	25	
1,2-Dibromoethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	10	25	
1,2-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	7	25	
1,2-Dichloroethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	0.8	25	
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,3,5-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
1,3-Dichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
1,3-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
1,4-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,4-Dioxane	1.24	0.100	mg/kg wet	1.000		124	70-130	28	20	D+
1-Chlorohexane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
2,2-Dichloropropane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	0.5	25	
2-Butanone	0.264	0.0500	mg/kg wet	0.2500		106	70-130	2	25	
2-Chlorotoluene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
2-Hexanone	0.294	0.0500	mg/kg wet	0.2500		118	70-130	11	25	
4-Chlorotoluene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
4-Methyl-2-Pentanone	0.301	0.0500	mg/kg wet	0.2500		120	70-130	6	25	
Acetone	0.310	0.0500	mg/kg wet	0.2500		124	70-130	6	25	



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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 CJ50931 - 5035

Benzene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	0.4	25	
Bromobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
Bromochloromethane	0.0587	0.0050	mg/kg wet	0.05000		117	70-130	3	25	
Bromodichloromethane	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	0.5	25	
Bromoform	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	17	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	3	25	
Carbon Disulfide	0.0581	0.0050	mg/kg wet	0.05000		116	70-130	1	25	
Carbon Tetrachloride	0.0552	0.0050	mg/kg wet	0.05000		110	70-130	4	25	
Chlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130	11	25	
Chloroform	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	0.6	25	
Chloromethane	0.0556	0.0100	mg/kg wet	0.05000		111	70-130	4	25	
cis-1,2-Dichloroethene	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	0	25	
cis-1,3-Dichloropropene	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	0.5	25	
Dibromochloromethane	0.0625	0.0050	mg/kg wet	0.05000		125	70-130	10	25	
Dibromomethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
Dichlorodifluoromethane	0.0574	0.0100	mg/kg wet	0.05000		115	70-130	0.4	25	
Diethyl Ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Di-isopropyl ether	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
Ethyl tertiary-butyl ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	0.9	25	
Ethylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	7	25	
Hexachlorobutadiene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	13	25	
Isopropylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
Methyl tert-Butyl Ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	4	25	
Methylene Chloride	0.0648	0.0250	mg/kg wet	0.05000		130	70-130	0.3	25	
Naphthalene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
n-Butylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
n-Propylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
sec-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Styrene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
tert-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Tertiary-amyl methyl ether	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	2	25	
Tetrachloroethene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	10	25	
Tetrahydrofuran	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
Toluene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
trans-1,2-Dichloroethene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
trans-1,3-Dichloropropene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.6	25	
Trichloroethene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	0.2	25	
Trichlorofluoromethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Vinyl Acetate	0.0852	0.0050	mg/kg wet	0.05000		170	70-130	0.3	25	B+
Vinyl Chloride	0.0597	0.0100	mg/kg wet	0.05000		119	70-130	0	25	
Xylene O	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	9	25	
Xylene P,M	0.106	0.0100	mg/kg wet	0.1000		106	70-130	8	25	
Xylenes (Total)	0.158	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0555		mg/kg wet	0.05000		111	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

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 CJ50931 - 5035

Surrogate: 4-Bromofluorobenzene	0.0500		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0490		mg/kg wet	0.05000		98	70-130			
Surrogate: Toluene-d8	0.0498		mg/kg wet	0.05000		100	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50711 - 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	5.31		mg/kg wet	5.000		106	40-140			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		81	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Total Petroleum Hydrocarbons	31.7	37.5	mg/kg wet	35.00		91	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		93	40-140			

Surrogate: O-Terphenyl	4.47		mg/kg wet	5.000		89	40-140			
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LCS Dup

Decane (C10)	2.1	0.2	mg/kg wet	2.500		84	40-140	4	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		112	40-140	18	25	
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		96	40-140	11	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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8100M Total Petroleum Hydrocarbons

Batch CJ50711 - 3546

Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		109	40-140	16	25	
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		115	40-140	18	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		103	40-140	15	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	16	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140	0.3	25	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		111	40-140	17	25	
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		109	40-140	16	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		106	40-140	19	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		98	40-140	9	25	
Total Petroleum Hydrocarbons	37.3	37.5	mg/kg wet	35.00		107	40-140	16	25	
Triacotane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140	18	25	

Surrogate: O-Terphenyl

5.11 mg/kg wet 5.000 102 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet
Pyridine	ND	1.67	mg/kg wet



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.67		mg/kg wet	3.333		80	30-130			
Surrogate: 2,4,6-Tribromophenol	4.80		mg/kg wet	5.000		96	30-130			
Surrogate: 2-Chlorophenol-d4	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.91		mg/kg wet	3.333		87	30-130			
Surrogate: 2-Fluorophenol	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: Nitrobenzene-d5	3.02		mg/kg wet	3.333		91	30-130			
Surrogate: Phenol-d6	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: p-Terphenyl-d14	3.40		mg/kg wet	3.333		102	30-130			

LCS

1,1-Biphenyl	2.34	0.333	mg/kg wet	3.333		70	40-140			
1,2,4-Trichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
1,2-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.29	0.333	mg/kg wet	3.333		69	40-140			
1,4-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140			
2,3,4,6-Tetrachlorophenol	2.64	1.67	mg/kg wet	3.333		79	30-130			
2,4,5-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4,6-Trichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dichlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dimethylphenol	2.44	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		81	30-130			
2,4-Dinitrotoluene	2.90	0.333	mg/kg wet	3.333		87	40-140			
2,6-Dinitrotoluene	2.61	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2-Chlorophenol	2.18	0.333	mg/kg wet	3.333		65	30-130			
2-Methylnaphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
2-Methylphenol	2.20	0.333	mg/kg wet	3.333		66	30-130			
2-Nitroaniline	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.34	0.667	mg/kg wet	3.333		70	40-140			
3+4-Methylphenol	5.30	0.667	mg/kg wet	6.667		79	30-130			
3-Nitroaniline	2.49	0.333	mg/kg wet	3.333		75	40-140			
4,6-Dinitro-2-Methylphenol	2.80	1.67	mg/kg wet	3.333		84	30-130			
4-Bromophenyl-phenylether	2.86	0.333	mg/kg wet	3.333		86	40-140			
4-Chloro-3-Methylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
4-Chloroaniline	2.10	0.667	mg/kg wet	3.333		63	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	2.58	0.333	mg/kg wet	3.333		77	40-140			
4-Nitrophenol	2.43	1.67	mg/kg wet	3.333		73	30-130			
Acenaphthene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Acetophenone	2.20	0.667	mg/kg wet	3.333		66	40-140			
Aniline	1.97	0.667	mg/kg wet	3.333		59	40-140			
Anthracene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Azobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Benzo(a)anthracene	2.93	0.333	mg/kg wet	3.333		88	40-140			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

Benzo(a)pyrene	3.04	0.167	mg/kg wet	3.333		91	40-140			
Benzo(b)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	3.45	0.333	mg/kg wet	3.333		103	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.78	1.67	mg/kg wet	3.333		83	40-140			
Benzyl Alcohol	2.63	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Chloroethoxy)methane	2.35	0.333	mg/kg wet	3.333		71	40-140			
bis(2-Chloroethyl)ether	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-chloroisopropyl)Ether	2.24	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	2.34	0.333	mg/kg wet	3.333		70	40-140			
Butylbenzylphthalate	2.56	0.333	mg/kg wet	3.333		77	40-140			
Carbazole	2.88	0.333	mg/kg wet	3.333		86	40-140			
Chrysene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.40	0.167	mg/kg wet	3.333		102	40-140			
Dibenzofuran	2.42	0.333	mg/kg wet	3.333		73	40-140			
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140			
Dimethylphthalate	2.67	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	2.33	0.333	mg/kg wet	3.333		70	40-140			
Fluoranthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorobenzene	2.72	0.167	mg/kg wet	3.333		82	40-140			
Hexachlorobutadiene	2.48	0.333	mg/kg wet	3.333		74	40-140			
Hexachlorocyclopentadiene	2.79	1.67	mg/kg wet	3.333		84	40-140			
Hexachloroethane	2.28	0.333	mg/kg wet	3.333		68	40-140			
Indeno(1,2,3-cd)Pyrene	3.34	0.333	mg/kg wet	3.333		100	40-140			
Isophorone	2.36	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.35	0.333	mg/kg wet	3.333		71	40-140			
Nitrobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
N-Nitrosodimethylamine	1.95	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.01	0.333	mg/kg wet	3.333		60	40-140			
N-nitrosodiphenylamine	2.79	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
Phenanthrene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Phenol	2.27	0.333	mg/kg wet	3.333		68	30-130			
Pyrene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Pyridine	1.79	1.67	mg/kg wet	3.333		54	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	5.26		mg/kg wet	5.000		105	30-130			
Surrogate: 2-Chlorophenol-d4	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Fluorobiphenyl	2.77		mg/kg wet	3.333		83	30-130			
Surrogate: 2-Fluorophenol	3.58		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.94		mg/kg wet	3.333		88	30-130			
Surrogate: Phenol-d6	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	3.35		mg/kg wet	3.333		100	30-130			



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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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

LCS Dup

1,1-Biphenyl	2.16	0.333	mg/kg wet	3.333		65	40-140	8	30	
1,2,4-Trichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	8	30	
1,2-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	6	30	
1,3-Dichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140	9	30	
1,4-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.34	1.67	mg/kg wet	3.333		70	30-130	12	30	
2,4,5-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130	8	30	
2,4,6-Trichlorophenol	2.47	0.333	mg/kg wet	3.333		74	30-130	8	30	
2,4-Dichlorophenol	2.40	0.333	mg/kg wet	3.333		72	30-130	5	30	
2,4-Dimethylphenol	2.30	0.333	mg/kg wet	3.333		69	30-130	6	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	11	30	
2,4-Dinitrotoluene	2.57	0.333	mg/kg wet	3.333		77	40-140	12	30	
2,6-Dinitrotoluene	2.35	0.333	mg/kg wet	3.333		71	40-140	10	30	
2-Chloronaphthalene	2.05	0.333	mg/kg wet	3.333		62	40-140	8	30	
2-Chlorophenol	2.05	0.333	mg/kg wet	3.333		61	30-130	6	30	
2-Methylnaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	6	30	
2-Methylphenol	2.08	0.333	mg/kg wet	3.333		63	30-130	6	30	
2-Nitroaniline	1.98	0.333	mg/kg wet	3.333		59	40-140	9	30	
2-Nitrophenol	2.33	0.333	mg/kg wet	3.333		70	30-130	5	30	
3,3'-Dichlorobenzidine	2.09	0.667	mg/kg wet	3.333		63	40-140	11	30	
3+4-Methylphenol	5.05	0.667	mg/kg wet	6.667		76	30-130	5	30	
3-Nitroaniline	2.22	0.333	mg/kg wet	3.333		67	40-140	12	30	
4,6-Dinitro-2-Methylphenol	2.61	1.67	mg/kg wet	3.333		78	30-130	7	30	
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140	8	30	
4-Chloro-3-Methylphenol	2.29	0.333	mg/kg wet	3.333		69	30-130	4	30	
4-Chloroaniline	1.95	0.667	mg/kg wet	3.333		59	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.32	0.333	mg/kg wet	3.333		70	40-140	10	30	
4-Nitroaniline	2.32	0.333	mg/kg wet	3.333		70	40-140	10	30	
4-Nitrophenol	2.17	1.67	mg/kg wet	3.333		65	30-130	11	30	
Acenaphthene	2.31	0.333	mg/kg wet	3.333		69	40-140	9	30	
Acenaphthylene	2.39	0.333	mg/kg wet	3.333		72	40-140	9	30	
Acetophenone	2.10	0.667	mg/kg wet	3.333		63	40-140	5	30	
Aniline	1.81	0.667	mg/kg wet	3.333		54	40-140	8	30	
Anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140	9	30	
Azobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	7	30	
Benzo(a)anthracene	2.68	0.333	mg/kg wet	3.333		80	40-140	9	30	
Benzo(a)pyrene	2.75	0.167	mg/kg wet	3.333		83	40-140	10	30	
Benzo(b)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(g,h,i)perylene	3.11	0.333	mg/kg wet	3.333		93	40-140	10	30	
Benzo(k)fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140	13	30	
Benzoic Acid	2.84	1.67	mg/kg wet	3.333		85	40-140	2	30	
Benzyl Alcohol	2.42	0.333	mg/kg wet	3.333		73	40-140	8	30	
bis(2-Chloroethoxy)methane	2.18	0.333	mg/kg wet	3.333		65	40-140	8	30	
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140	8	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CJ50712 - 3546

bis(2-chloroisopropyl)Ether	2.08	0.333	mg/kg wet	3.333		62	40-140	7	30	
bis(2-Ethylhexyl)phthalate	2.17	0.333	mg/kg wet	3.333		65	40-140	8	30	
Butylbenzylphthalate	2.36	0.333	mg/kg wet	3.333		71	40-140	8	30	
Carbazole	2.63	0.333	mg/kg wet	3.333		79	40-140	9	30	
Chrysene	2.62	0.167	mg/kg wet	3.333		79	40-140	10	30	
Dibenzo(a,h)Anthracene	3.07	0.167	mg/kg wet	3.333		92	40-140	10	30	
Dibenzofuran	2.22	0.333	mg/kg wet	3.333		66	40-140	9	30	
Diethylphthalate	2.45	0.333	mg/kg wet	3.333		74	40-140	11	30	
Dimethylphthalate	2.42	0.333	mg/kg wet	3.333		72	40-140	10	30	
Di-n-butylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
Di-n-octylphthalate	2.16	0.333	mg/kg wet	3.333		65	40-140	7	30	
Fluoranthene	2.71	0.333	mg/kg wet	3.333		81	40-140	10	30	
Fluorene	2.43	0.333	mg/kg wet	3.333		73	40-140	10	30	
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140	9	30	
Hexachlorobutadiene	2.27	0.333	mg/kg wet	3.333		68	40-140	9	30	
Hexachlorocyclopentadiene	2.60	1.67	mg/kg wet	3.333		78	40-140	7	30	
Hexachloroethane	2.11	0.333	mg/kg wet	3.333		63	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	3.01	0.333	mg/kg wet	3.333		90	40-140	10	30	
Isophorone	2.22	0.333	mg/kg wet	3.333		66	40-140	6	30	
Naphthalene	2.18	0.333	mg/kg wet	3.333		65	40-140	8	30	
Nitrobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140	8	30	
N-Nitrosodimethylamine	1.83	0.333	mg/kg wet	3.333		55	40-140	6	30	
N-Nitroso-Di-n-Propylamine	1.93	0.333	mg/kg wet	3.333		58	40-140	4	30	
N-nitrosodiphenylamine	2.58	0.333	mg/kg wet	3.333		77	40-140	8	30	
Pentachlorophenol	2.75	1.67	mg/kg wet	3.333		83	30-130	9	30	
Phenanthrene	2.38	0.333	mg/kg wet	3.333		71	40-140	9	30	
Phenol	2.08	0.333	mg/kg wet	3.333		62	30-130	9	30	
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140	8	30	
Pyridine	1.65	1.67	mg/kg wet	3.333		50	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.32		mg/kg wet	3.333		70	30-130			
Surrogate: 2,4,6-Tribromophenol	4.67		mg/kg wet	5.000		93	30-130			
Surrogate: 2-Chlorophenol-d4	3.28		mg/kg wet	5.000		66	30-130			
Surrogate: 2-Fluorobiphenyl	2.48		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.25		mg/kg wet	5.000		65	30-130			
Surrogate: Nitrobenzene-d5	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: Phenol-d6	3.29		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	3.01		mg/kg wet	3.333		90	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

Notes and Definitions

- Z-10 Soil pH measured in water at 21.2 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510197

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Client

ESS Project ID: 15100197
 Date Project Due: 10/12/15
 Days For Project: 3 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present? * No
- Air No.: _____
2. Were Custody Seals Present? No
3. Were Custody Seals Intact? N/A
4. Is Radiation count < 100 CPM? Yes
5. Is a cooler present? Yes
-
6. Was COC included with samples? Yes
7. Was COC signed and dated by client? Yes
8. Does the COC match the sample? Yes
9. Is COC complete and correct? Yes
10. Are the samples properly preserved? Yes
11. Proper sample containers used? Yes
12. Any air bubbles in the VOA vials? N/A
13. Holding times exceeded? No
14. Sufficient sample volumes? Yes
15. Any Subcontracting needed? No
16. Are ESS labels on correct containers? Yes No
17. Were samples received intact? Yes No
- ESS Sample IDs: _____
- Sub Lab: _____
- Analysis: _____
- TAT: _____
18. Was there need to call project manager to discuss status? If yes, please explain.
LL vials frozen 10/7/15 2125

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: m mid
 Reviewed By: JANOS

Date/Time: 10/8/15 0930
 Date/Time: 10/8/15 0930

ESS Laboratory

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

CHAIN OF CUSTODY

Turn Time: 3 Days

Regulatory State: Rhode Island

Is this project for any of the following?
 OMA MCP ORGP DOD

Project # 74-15-0002.134

Project Name: Textron Providence

Address: 500 Harrison Avenue, Suite 4R

City: Boston State: MA

Zip Code: 02118 PO #

Telephone Number: (857) 246-6812 FAX Number

ESS Lab ID: 107715

Collection Date: 10/7/15

Collection Time: 16:15

Sample Type: Grab

Sample Matrix: Soil

Sample ID: Lopes - Raynham 10% Org 2

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitaliner Jar O-Other P-Poly S-Sterile V-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

Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAc, NaOH, 9-NH4Cl, 10-Other

Number of Containers: 1 1 1 1 2 1

Analysis: pH: Corrosivity 9045

VOC

VOC Low Level

SVOC

RCRA 8

TPH

Reporting Limits: Data Checker Other (Please Specify ->)

ESS Lab # 1510197

RI DEM RDEC

Excel

Company Name: Charter Environmental
 Contact Person: Paul J. Leofanti, Jr.
 City: Boston State: MA
 Telephone Number: (857) 246-6812 FAX Number
 ESS Lab ID: 107715
 Collection Date: 10/7/15
 Collection Time: 16:15
 Sample Type: Grab
 Sample Matrix: Soil
 Sample ID: Lopes - Raynham 10% Org 2

Project # 74-15-0002.134
 Project Name: Textron Providence
 Address: 500 Harrison Avenue, Suite 4R
 City: Boston State: MA
 Zip Code: 02118 PO #
 Email Address: pleofanti@charter.us

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	pH: Corrosivity 9045	VOC	VOC Low Level	SVOC	RCRA 8	TPH
1	10/7/15	16:15	Grab	Soil	Lopes - Raynham 10% Org 2	X	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitaliner Jar O-Other P-Poly S-Sterile V-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
 Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAc, NaOH, 9-NH4Cl, 10-Other
 Number of Containers: 1 1 1 1 2 1

Requingished by: (Signature, Date & Time)
 Received by: (Signature, Date & Time)

Cooler Present: YES Drop Off
 Seals Intact: YES Pickup
 Cooler Temperature: 10.1 \pm 0.1 °C
 Technician Hours: 10/7/15 2059

Laboratory Use Only
 Sampled by: G. Gilbert-Thielisch
 Comments: Please specify "Other" preservative and containers types in this space
 Please CC: mpolsky@thielisch.com

Requingished by: (Signature, Date & Time)
 Received by: (Signature, Date & Time)



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1510376

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 3:31 pm, Oct 19, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

SAMPLE RECEIPT

The following samples were received on October 14, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on October 14, 2015 at 18:25.

Lab Number	Sample Name	Matrix	Analysis
1510376-01	G Lopes 10% Organics B	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ51648-BS1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (170% @ 70-130%)

CJ51648-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (177% @ 70-130%)

8270D Semi-Volatile Organic Compounds

CYJ0168-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Benzoic Acid (103% @ 80-120%)

CYJ0168-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Pyridine (25% @ 20%)

CYJ0180-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (65% @ 80-120%)

CYJ0180-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (28% @ 20%), Benzoic Acid (35% @ 20%), Di-n-octylphthalate (27% @ 20%), N-Nitrosodimethylamine (41% @ 20%), Pentachlorophenol (31% @ 20%), Pyrene (26% @ 20%), Pyridine (34% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

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	2.59 (2.23)		6010C		1	KJK	10/16/15 11:02	2.33	100	CJ51452
Barium	17.0 (2.23)		6010C		1	KJK	10/16/15 11:02	2.33	100	CJ51452
Cadmium	ND (0.45)		6010C		1	KJK	10/16/15 11:02	2.33	100	CJ51452
Chromium	6.47 (0.89)		6010C		1	KJK	10/16/15 11:02	2.33	100	CJ51452
Lead	21.0 (4.46)		6010C		1	KJK	10/16/15 22:18	2.33	100	CJ51452
Mercury	0.044 (0.034)		7471B		1	BJV	10/16/15 13:33	0.6	40	CJ51630
Selenium	ND (4.46)		6010C		1	KJK	10/16/15 11:02	2.33	100	CJ51452
Silver	ND (0.45)		6010C		1	KJK	10/16/15 11:02	2.33	100	CJ51452



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 4.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
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 (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,1,1-Trichloroethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,1,2,2-Tetrachloroethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,1,2-Trichloroethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,1-Dichloroethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,1-Dichloroethene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,1-Dichloropropene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2,3-Trichlorobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2,3-Trichloropropane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2,4-Trichlorobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2,4-Trimethylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2-Dibromo-3-Chloropropane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2-Dibromoethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2-Dichlorobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2-Dichloroethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,2-Dichloropropane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,3,5-Trimethylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,3-Dichlorobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,3-Dichloropropane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,4-Dichlorobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1,4-Dioxane	ND (0.116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
1-Chlorohexane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
2,2-Dichloropropane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
2-Butanone	ND (0.0578)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
2-Chlorotoluene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
2-Hexanone	ND (0.0578)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
4-Chlorotoluene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
4-Isopropyltoluene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
4-Methyl-2-Pentanone	ND (0.0578)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Acetone	ND (0.0578)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Benzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Bromobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 4.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
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 (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Bromodichloromethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Bromoform	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Bromomethane	ND (0.0116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Carbon Disulfide	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Carbon Tetrachloride	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Chlorobenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Chloroethane	ND (0.0116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Chloroform	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Chloromethane	ND (0.0116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
cis-1,2-Dichloroethene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
cis-1,3-Dichloropropene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Dibromochloromethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Dibromomethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Dichlorodifluoromethane	ND (0.0116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Diethyl Ether	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Di-isopropyl ether	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Ethyl tertiary-butyl ether	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Ethylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Hexachlorobutadiene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Isopropylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Methyl tert-Butyl Ether	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Methylene Chloride	ND (0.0289)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Naphthalene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
n-Butylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
n-Propylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
sec-Butylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Styrene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
tert-Butylbenzene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Tertiary-amyl methyl ether	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Tetrachloroethene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Tetrahydrofuran	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 4.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
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 (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
trans-1,2-Dichloroethene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
trans-1,3-Dichloropropene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Trichloroethene	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Trichlorofluoromethane	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Vinyl Acetate	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Vinyl Chloride	ND (0.0116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Xylene O	ND (0.0058)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Xylene P,M	ND (0.0116)		8260B Low		1	10/16/15 15:56	CYJ0209	CJ51648
Xylenes (Total)	ND (0.0116)		8260B Low		1	10/16/15 15:56		[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>94 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>110 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/15/15 11:50

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	158 (39.8)		8100M		1	10/15/15 19:52	CYJ0201	CJ51413
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		93 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-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-Biphenyl	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
1,2,4-Trichlorobenzene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
1,2-Dichlorobenzene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
1,3-Dichlorobenzene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
1,4-Dichlorobenzene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,3,4,6-Tetrachlorophenol	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,4,5-Trichlorophenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,4,6-Trichlorophenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,4-Dichlorophenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,4-Dimethylphenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,4-Dinitrophenol	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,4-Dinitrotoluene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2,6-Dinitrotoluene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2-Chloronaphthalene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2-Chlorophenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2-Methylnaphthalene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2-Methylphenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2-Nitroaniline	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
2-Nitrophenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
3,3'-Dichlorobenzidine	ND (0.698)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
3+4-Methylphenol	ND (0.698)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
3-Nitroaniline	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4,6-Dinitro-2-Methylphenol	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4-Bromophenyl-phenylether	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4-Chloro-3-Methylphenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4-Chloroaniline	ND (0.698)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4-Chloro-phenyl-phenyl ether	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4-Nitroaniline	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
4-Nitrophenol	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Acenaphthene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Acenaphthylene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Acetophenone	ND (0.698)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-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>
Aniline	ND (0.698)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Anthracene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Azobenzene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzo(a)anthracene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzo(a)pyrene	0.256 (0.175)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzo(b)fluoranthene	0.445 (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzo(g,h,i)perylene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzo(k)fluoranthene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzoic Acid	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Benzyl Alcohol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
bis(2-Chloroethoxy)methane	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
bis(2-Chloroethyl)ether	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
bis(2-chloroisopropyl)Ether	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
bis(2-Ethylhexyl)phthalate	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Butylbenzylphthalate	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Carbazole	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Chrysene	0.300 (0.175)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Dibenzo(a,h)Anthracene	ND (0.175)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Dibenzofuran	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Diethylphthalate	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Dimethylphthalate	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Di-n-butylphthalate	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Di-n-octylphthalate	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Fluoranthene	0.432 (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Fluorene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Hexachlorobenzene	ND (0.175)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Hexachlorobutadiene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Hexachlorocyclopentadiene	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Hexachloroethane	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Indeno(1,2,3-cd)Pyrene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Isophorone	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Naphthalene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-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>
Nitrobenzene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
N-Nitrosodimethylamine	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
N-Nitroso-Di-n-Propylamine	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
N-nitrosodiphenylamine	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Pentachlorophenol	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Phenanthrene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Phenol	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Pyrene	ND (0.349)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414
Pyridine	ND (1.75)		8270D		1	10/15/15 17:51	CYJ0180	CJ51414

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>51 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>74 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>53 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>59 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>47 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>53 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>52 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>57 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics B
Date Sampled: 10/14/15 16:00
Percent Solids: 96

ESS Laboratory Work Order: 1510376
ESS Laboratory Sample ID: 1510376-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.95 (N/A)		9045		1	JLK	10/15/15 9:45	S.U.	CJ51504
Corrosivity (pH) Sample Temp	Soil pH measured in water at 19.2 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

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 CJ51452 - 3005A

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	114	9.80	mg/kg wet	139.0	82	80-120
Barium	183	9.80	mg/kg wet	203.0	90	80-120
Cadmium	77.1	1.96	mg/kg wet	96.00	80	80-120
Chromium	112	3.92	mg/kg wet	136.0	82	80-120
Lead	114	19.6	mg/kg wet	133.0	86	80-120
Selenium	140	19.6	mg/kg wet	177.0	79	77-123
Silver	33.6	1.96	mg/kg wet	40.20	83	80-120

LCS Dup

Arsenic	123	8.77	mg/kg wet	139.0	88	80-120	7	20
Barium	182	8.77	mg/kg wet	203.0	90	80-120	0.4	20
Cadmium	81.7	1.75	mg/kg wet	96.00	85	80-120	6	20
Chromium	119	3.51	mg/kg wet	136.0	88	80-120	7	20
Lead	124	17.5	mg/kg wet	133.0	93	80-120	8	20
Selenium	149	17.5	mg/kg wet	177.0	84	77-123	6	20
Silver	34.9	1.75	mg/kg wet	40.20	87	80-120	4	20

Batch CJ51630 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	14.5	1.80	mg/kg wet	12.90	112	80-120
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LCS Dup

Mercury	14.7	1.77	mg/kg wet	12.90	114	80-120	2	20
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Reference

Mercury	1.03	0.183	mg/kg wet	1.000	103	70-130
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 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



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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 CJ51648 - 5035

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
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



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 5035

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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0535		mg/kg wet	0.05000		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0484		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0528		mg/kg wet	0.05000		106	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,2-Trichloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloropropene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trimethylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichloropropane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	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 / Low Level

Batch CJ51648 - 5035

1,3-Dichlorobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichloropropane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dioxane	0.921	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130			
2-Chlorotoluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
4-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
4-Isopropyltoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
Acetone	0.285	0.0500	mg/kg wet	0.2500		114	70-130			
Benzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Bromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromodichloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromomethane	0.0510	0.0100	mg/kg wet	0.05000		102	70-130			
Carbon Disulfide	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Carbon Tetrachloride	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Chloroethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130			
Chloroform	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Chloromethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
cis-1,2-Dichloroethene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
cis-1,3-Dichloropropene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromochloromethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
Dibromomethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Diethyl Ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Ethyl tertiary-butyl ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0569	0.0250	mg/kg wet	0.05000		114	70-130			
Naphthalene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
n-Propylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Styrene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 5035

Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Toluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Trichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0852	0.0050	mg/kg wet	0.05000		170	70-130			B+
Vinyl Chloride	0.0446	0.0100	mg/kg wet	0.05000		89	70-130			
Xylene O	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0495		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,1-Trichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
1,1,2-Trichloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	3	25	
1,1-Dichloroethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
1,1-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
1,1-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
1,2,3-Trichlorobenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
1,2,3-Trichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
1,2,4-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,2-Dibromoethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
1,2-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	8	25	
1,2-Dichloroethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
1,2-Dichloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,3,5-Trimethylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	8	25	
1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130	10	20	
1-Chlorohexane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
2,2-Dichloropropane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	6	25	
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130	3	25	
2-Chlorotoluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
2-Hexanone	0.279	0.0500	mg/kg wet	0.2500		111	70-130	3	25	
4-Chlorotoluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	8	25	



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 5035

4-Methyl-2-Pentanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130	3	25	
Acetone	0.296	0.0500	mg/kg wet	0.2500		119	70-130	4	25	
Benzene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
Bromobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	4	25	
Bromodichloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Bromoform	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Bromomethane	0.0519	0.0100	mg/kg wet	0.05000		104	70-130	2	25	
Carbon Disulfide	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	6	25	
Carbon Tetrachloride	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Chlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Chloroethane	0.0403	0.0100	mg/kg wet	0.05000		81	70-130	18	25	
Chloroform	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Chloromethane	0.0558	0.0100	mg/kg wet	0.05000		112	70-130	7	25	
cis-1,2-Dichloroethene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
cis-1,3-Dichloropropene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	5	25	
Dibromochloromethane	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	5	25	
Dibromomethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
Diethyl Ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
Di-isopropyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Ethyl tertiary-butyl ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	6	25	
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Hexachlorobutadiene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
Isopropylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
Methyl tert-Butyl Ether	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	5	25	
Methylene Chloride	0.0605	0.0250	mg/kg wet	0.05000		121	70-130	6	25	
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
n-Propylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
sec-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	
tert-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Tertiary-amyl methyl ether	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrahydrofuran	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	2	25	
Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
trans-1,2-Dichloroethene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
trans-1,3-Dichloropropene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Trichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Trichlorofluoromethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
Vinyl Acetate	0.0886	0.0050	mg/kg wet	0.05000		177	70-130	4	25	B+
Vinyl Chloride	0.0464	0.0100	mg/kg wet	0.05000		93	70-130	4	25	
Xylene O	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Xylene P,M	0.0986	0.0100	mg/kg wet	0.1000		99	70-130	5	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

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 CJ51648 - [CALC]

Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0492		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0488		mg/kg wet	0.05000		98	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ51413 - 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	4.59		mg/kg wet	5.000		92	40-140			
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LCS

Decane (C10)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Total Petroleum Hydrocarbons	30.2	37.5	mg/kg wet	35.00		86	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		91	40-140			

Surrogate: O-Terphenyl	4.80		mg/kg wet	5.000		96	40-140			
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LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500		89	40-140	0.5	25	
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140	2	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510376

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 CJ51413 - 3546

Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		98	40-140	2	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140	1	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140	3	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140	2	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140	0.8	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		94	40-140	1	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		99	40-140	2	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140	2	25	
Total Petroleum Hydrocarbons	30.6	37.5	mg/kg wet	35.00		87	40-140	1	25	
Triacotane (C30)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	

Surrogate: O-Terphenyl 4.84 mg/kg wet 5.000 97 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510376

Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

4-Nitroaniline	ND	0.333	mg/kg wet
4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet
Isophorone	ND	0.333	mg/kg wet
Naphthalene	ND	0.333	mg/kg wet
Nitrobenzene	ND	0.333	mg/kg wet
N-Nitrosodimethylamine	ND	0.333	mg/kg wet
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet
N-nitrosodiphenylamine	ND	0.333	mg/kg wet
Pentachlorophenol	ND	1.67	mg/kg wet
Phenanthrene	ND	0.333	mg/kg wet
Phenol	ND	0.333	mg/kg wet
Pyrene	ND	0.333	mg/kg wet



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.58		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Chlorophenol-d4	2.98		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	2.04		mg/kg wet	3.333		61	30-130			
Surrogate: 2-Fluorophenol	2.72		mg/kg wet	5.000		54	30-130			
Surrogate: Nitrobenzene-d5	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: Phenol-d6	2.99		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.29		mg/kg wet	3.333		69	30-130			

LCS

1,1-Biphenyl	2.18	0.333	mg/kg wet	3.333		66	40-140			
1,2,4-Trichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
1,4-Dichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.47	1.67	mg/kg wet	3.333		74	30-130			
2,4,5-Trichlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
2,4,6-Trichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dimethylphenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dinitrophenol	2.20	1.67	mg/kg wet	3.333		66	30-130			
2,4-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2,6-Dinitrotoluene	2.40	0.333	mg/kg wet	3.333		72	40-140			
2-Chloronaphthalene	2.00	0.333	mg/kg wet	3.333		60	40-140			
2-Chlorophenol	2.04	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140			
2-Methylphenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Nitroaniline	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.38	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.66	0.667	mg/kg wet	6.667		70	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			
4,6-Dinitro-2-Methylphenol	2.19	1.67	mg/kg wet	3.333		66	30-130			
4-Bromophenyl-phenylether	2.49	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.35	0.333	mg/kg wet	3.333		70	30-130			
4-Chloroaniline	1.94	0.667	mg/kg wet	3.333		58	40-140			
4-Chloro-phenyl-phenyl ether	2.34	0.333	mg/kg wet	3.333		70	40-140			
4-Nitroaniline	2.52	0.333	mg/kg wet	3.333		76	40-140			
4-Nitrophenol	2.35	1.67	mg/kg wet	3.333		71	30-130			
Acenaphthene	2.28	0.333	mg/kg wet	3.333		68	40-140			
Acenaphthylene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Acetophenone	2.35	0.667	mg/kg wet	3.333		70	40-140			
Aniline	1.68	0.667	mg/kg wet	3.333		50	40-140			
Anthracene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Azobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Benzo(a)anthracene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)pyrene	2.48	0.167	mg/kg wet	3.333		74	40-140			
Benzo(b)fluoranthene	2.37	0.333	mg/kg wet	3.333		71	40-140			
Benzo(g,h,i)perylene	2.14	0.333	mg/kg wet	3.333		64	40-140			
Benzo(k)fluoranthene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Benzoic Acid	2.98	1.67	mg/kg wet	3.333		89	40-140			
Benzyl Alcohol	2.32	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140			
bis(2-chloroisopropyl)Ether	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	2.42	0.333	mg/kg wet	3.333		73	40-140			
Butylbenzylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140			
Carbazole	2.56	0.333	mg/kg wet	3.333		77	40-140			
Chrysene	2.57	0.167	mg/kg wet	3.333		77	40-140			
Dibenzo(a,h)Anthracene	2.25	0.167	mg/kg wet	3.333		67	40-140			
Dibenzofuran	2.20	0.333	mg/kg wet	3.333		66	40-140			
Diethylphthalate	2.49	0.333	mg/kg wet	3.333		75	40-140			
Dimethylphthalate	2.35	0.333	mg/kg wet	3.333		70	40-140			
Di-n-butylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	2.08	0.333	mg/kg wet	3.333		63	40-140			
Fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Fluorene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140			
Hexachlorobutadiene	2.20	0.333	mg/kg wet	3.333		66	40-140			
Hexachlorocyclopentadiene	1.42	1.67	mg/kg wet	3.333		43	40-140			
Hexachloroethane	2.02	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140			
Naphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Nitrobenzene	2.26	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.46	0.333	mg/kg wet	3.333		74	40-140			
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130			
Phenanthrene	2.47	0.333	mg/kg wet	3.333		74	40-140			
Phenol	2.09	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	2.22	0.333	mg/kg wet	3.333		67	40-140			
Pyridine	1.42	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	4.19		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Chlorophenol-d4	3.15		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.86		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.21		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.35		mg/kg wet	3.333		71	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510376

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

LCS Dup

1,1-Biphenyl	2.52	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,2,4-Trichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	13	30	
1,2-Dichlorobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,3-Dichlorobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	13	30	
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	13	30	
2,3,4,6-Tetrachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	15	30	
2,4,5-Trichlorophenol	2.89	0.333	mg/kg wet	3.333		87	30-130	16	30	
2,4,6-Trichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	17	30	
2,4-Dichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	15	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	16	30	
2,4-Dinitrophenol	2.62	1.67	mg/kg wet	3.333		79	30-130	18	30	
2,4-Dinitrotoluene	3.12	0.333	mg/kg wet	3.333		94	40-140	15	30	
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140	18	30	
2-Chloronaphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140	15	30	
2-Chlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	14	30	
2-Methylnaphthalene	2.41	0.333	mg/kg wet	3.333		72	40-140	14	30	
2-Methylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130	14	30	
2-Nitroaniline	2.33	0.333	mg/kg wet	3.333		70	40-140	16	30	
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		86	30-130	15	30	
3,3'-Dichlorobenzidine	2.61	0.667	mg/kg wet	3.333		78	40-140	9	30	
3+4-Methylphenol	5.28	0.667	mg/kg wet	6.667		79	30-130	13	30	
3-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	14	30	
4,6-Dinitro-2-Methylphenol	2.64	1.67	mg/kg wet	3.333		79	30-130	18	30	
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140	15	30	
4-Chloro-3-Methylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130	13	30	
4-Chloroaniline	2.26	0.667	mg/kg wet	3.333		68	40-140	15	30	
4-Chloro-phenyl-phenyl ether	2.68	0.333	mg/kg wet	3.333		80	40-140	13	30	
4-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	13	30	
4-Nitrophenol	2.77	1.67	mg/kg wet	3.333		83	30-130	16	30	
Acenaphthene	2.64	0.333	mg/kg wet	3.333		79	40-140	15	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	16	30	
Acetophenone	2.71	0.667	mg/kg wet	3.333		81	40-140	14	30	
Aniline	1.94	0.667	mg/kg wet	3.333		58	40-140	15	30	
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	14	30	
Azobenzene	2.80	0.333	mg/kg wet	3.333		84	40-140	16	30	
Benzo(a)anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140	14	30	
Benzo(a)pyrene	2.86	0.167	mg/kg wet	3.333		86	40-140	14	30	
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140	8	30	
Benzo(g,h,i)perylene	2.56	0.333	mg/kg wet	3.333		77	40-140	18	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	17	30	
Benzoic Acid	3.43	1.67	mg/kg wet	3.333		103	40-140	14	30	
Benzyl Alcohol	2.43	0.333	mg/kg wet	3.333		73	40-140	4	30	
bis(2-Chloroethoxy)methane	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
bis(2-Chloroethyl)ether	2.41	0.333	mg/kg wet	3.333		72	40-140	15	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ51414 - 3546										
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Ethylhexyl)phthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	14	30	
Butylbenzylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140	16	30	
Carbazole	2.94	0.333	mg/kg wet	3.333		88	40-140	14	30	
Chrysene	2.98	0.167	mg/kg wet	3.333		89	40-140	15	30	
Dibenzo(a,h)Anthracene	2.65	0.167	mg/kg wet	3.333		79	40-140	16	30	
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140	14	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	15	30	
Dimethylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140	16	30	
Di-n-butylphthalate	3.25	0.333	mg/kg wet	3.333		98	40-140	14	30	
Di-n-octylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140	12	30	
Fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140	12	30	
Fluorene	2.70	0.333	mg/kg wet	3.333		81	40-140	14	30	
Hexachlorobenzene	2.80	0.167	mg/kg wet	3.333		84	40-140	16	30	
Hexachlorobutadiene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Hexachlorocyclopentadiene	1.71	1.67	mg/kg wet	3.333		51	40-140	19	30	
Hexachloroethane	2.31	0.333	mg/kg wet	3.333		69	40-140	14	30	
Indeno(1,2,3-cd)Pyrene	2.66	0.333	mg/kg wet	3.333		80	40-140	17	30	
Isophorone	2.63	0.333	mg/kg wet	3.333		79	40-140	15	30	
Naphthalene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Nitrobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140	15	30	
N-Nitrosodimethylamine	2.08	0.333	mg/kg wet	3.333		62	40-140	18	30	
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.85	0.333	mg/kg wet	3.333		86	40-140	15	30	
Pentachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130	15	30	
Phenanthrene	2.85	0.333	mg/kg wet	3.333		86	40-140	14	30	
Phenol	2.39	0.333	mg/kg wet	3.333		72	30-130	13	30	
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140	15	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.57		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	4.70		mg/kg wet	5.000		94	30-130			
Surrogate: 2-Chlorophenol-d4	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: Phenol-d6	3.60		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.66		mg/kg wet	3.333		80	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

Notes and Definitions

- Z-10 Soil pH measured in water at 19.2 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510376

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15100376
 Date Project Due: 10/19/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <u>Cooler Temp: 14.7</u> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <u>Iced With: Ice</u> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: _____ | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: _____ | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: _____ | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: _____ | |

18. Was there need to call project manager to discuss status? If yes, please explain.
L L KIAIS Frozen @ 1825 JL 10/14/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature] Date/Time: 10/14/15 1816
 Reviewed By: [Signature] Date/Time: 10/14/15 1825

CHAIN OF CUSTODY

ESS Lab # **1510376**

Reporting Limits **RI DEM RDEC**

Turn Time **3** Days

Regulatory State **Rhode Island**

Is this project for any of the following?

OCT RCP MA MCP RGP DOD ODD

Data Checker Other (Please Specify →) Excel

Company Name **Charter Environmental**

Contact Person **Paul J. Leofanti, Jr.**

Project # **74-15-0002.134**

Address **500 Harrison Avenue, Suite 4R**

City **Boston** State **MA** Zip Code **02118** PO #

Telephone Number **(857) 246-6812** FAX Number

Email Address **pleofanti@charter.us**

Project Name **Textron Providence**

PH: Conductivity 9045

VOC

VOC Low Level

SVOC

RCRA 8

TPH

Analysis

Sample ID

G Lopes 10% Organics ~~10.1~~ B

EH 10/15/15

Number of Containers: 1

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-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

Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAc, NaOH, 9-NH4Cl, 10-Other

1	10/14/15	16:00	Grab	Soil	

Number of Containers: 1 1 1 2 1

Sampled by: **G. Gilbert-Thielsch**

Comments: **Please specify "Other" preservative and containers types in this space**

Please CC: **mpolsky@thielsch.com**

Cooler Present: yes Drop Off

Seals Intact: no Pickup

Cooler Temperature: 14.7°C Technician Hours →

Received by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
<i>[Signature]</i> 10/14/15 16:00	<i>[Signature]</i> 10/14/15 16:50		
Reinquired by: (Signature, Date & Time)	Reinquired by: (Signature, Date & Time)	Reinquired by: (Signature, Date & Time)	Reinquired by: (Signature, Date & Time)

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # **1510316**

Reporting Limits **RI DEM RDEC**

Turn Time **3** Days
Regulatory State **Rhode Island**

Is this project for any of the following:
 OCT RCP MA MCP RGP DOD

Electronic Deliverables Data Checker Other (Please Specify →) Excel

Company Name **Charter Environmental**

Project # **74-15-0002.134** Project Name **Textron Providence**

Contact Person **Paul J. Leofanti, Jr.**

Address **500 Harrison Avenue, Suite 4R**

City **Boston** State **MA** Zip Code **02118** PO #

Email Address **pleofanti@charter.us**

Telephone Number **(957) 246-6812** FAX Number

ESS Lab ID **1** Collection Date **10/14/15** Collection Time **16:00** Sample Type **Grab** Sample Matrix **Soil** Sample ID **Loam B**

Analysis

PH: Conductivity 9045
VOC
VOC Low Level
SVOC
RCRA 8
TPH

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	J	V	V	J	J	J
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	7	10 10 10
Preservation Code:	1-Non Preserved,	2-HCl,	3-H2SO4,	4-HNO3,	5-NaOH,	6-MeOH,	7-Na2S2O3,	8-ZnAcAc,	9-NH4Cl,	10-Other	1	1	6	10	1 1 1 1
											Number of Containers:				
										1	1	1	2	1	

Sampled by: G. Gilbert-Thielsch

Cooler Present: yes Drop Off

Seals Intact: no Pickup

Cooler Temperature: 14.7°C Technician Hours →

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Comments: Please specify "Other" preservative and containers types in this space

Please CC: mpolsky@thielsch.com

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)



CERTIFICATE OF ANALYSIS

Paul J. Leofanti, Jr.
Charter Environmental, Inc.
500 Harrison Avenue, Suite 4R
Boston, MA 02118

RE: Textron Providence (74-15-0002.134)
ESS Laboratory Work Order Number: 1510373

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 3:30 pm, Oct 19, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

SAMPLE RECEIPT

The following samples were received on October 14, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

Low Level VOA vials were frozen by ESS Laboratory on October 14, 2015 at 18:25.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510373-01	G Lopes 10% Organics A	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ51648-BS1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (170% @ 70-130%)

CJ51648-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (177% @ 70-130%)

8270D Semi-Volatile Organic Compounds

1510373-01 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**

Perylene-d12 (223% @ 50-200%)

CYJ0168-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (93% @ 80-120%), Benzoic Acid (103% @ 80-120%)

CYJ0168-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

Pyridine (25% @ 20%)

CYJ0180-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (65% @ 80-120%)

CYJ0180-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (28% @ 20%), Benzoic Acid (35% @ 20%), Di-n-octylphthalate (27% @ 20%), N-Nitrosodimethylamine (41% @ 20%), Pentachlorophenol (31% @ 20%), Pyrene (26% @ 20%), Pyridine (34% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP 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
- 5035 - 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: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

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	2.44 (2.27)		6010C		1	KJK	10/16/15 10:37	2.26	100	CJ51452
Barium	17.5 (2.27)		6010C		1	KJK	10/16/15 10:37	2.26	100	CJ51452
Cadmium	ND (0.45)		6010C		1	KJK	10/16/15 10:37	2.26	100	CJ51452
Chromium	5.68 (0.91)		6010C		1	KJK	10/16/15 10:37	2.26	100	CJ51452
Lead	20.8 (4.55)		6010C		1	KJK	10/16/15 22:06	2.26	100	CJ51452
Mercury	ND (0.031)		7471B		1	BJV	10/16/15 13:23	0.65	40	CJ51630
Selenium	ND (4.55)		6010C		1	KJK	10/16/15 10:37	2.26	100	CJ51452
Silver	ND (0.45)		6010C		1	KJK	10/16/15 10:37	2.26	100	CJ51452



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97
Initial Volume: 4.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
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 (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,1,1-Trichloroethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,1,2,2-Tetrachloroethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,1,2-Trichloroethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,1-Dichloroethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,1-Dichloroethene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,1-Dichloropropene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2,3-Trichlorobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2,3-Trichloropropane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2,4-Trichlorobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2,4-Trimethylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2-Dibromo-3-Chloropropane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2-Dibromoethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2-Dichlorobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2-Dichloroethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,2-Dichloropropane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,3,5-Trimethylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,3-Dichlorobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,3-Dichloropropane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,4-Dichlorobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1,4-Dioxane	ND (0.107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
1-Chlorohexane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
2,2-Dichloropropane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
2-Butanone	ND (0.0535)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
2-Chlorotoluene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
2-Hexanone	ND (0.0535)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
4-Chlorotoluene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
4-Isopropyltoluene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
4-Methyl-2-Pentanone	ND (0.0535)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Acetone	ND (0.0535)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Benzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Bromobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97
Initial Volume: 4.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
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 (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Bromodichloromethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Bromoform	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Bromomethane	ND (0.0107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Carbon Disulfide	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Carbon Tetrachloride	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Chlorobenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Chloroethane	ND (0.0107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Chloroform	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Chloromethane	ND (0.0107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
cis-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
cis-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Dibromochloromethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Dibromomethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Dichlorodifluoromethane	ND (0.0107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Diethyl Ether	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Di-isopropyl ether	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Ethyl tertiary-butyl ether	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Ethylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Hexachlorobutadiene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Isopropylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Methyl tert-Butyl Ether	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Methylene Chloride	ND (0.0268)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Naphthalene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
n-Butylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
n-Propylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
sec-Butylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Styrene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
tert-Butylbenzene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Tertiary-amyl methyl ether	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Tetrachloroethene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Tetrahydrofuran	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: G Lopes 10% Organics A
 Date Sampled: 10/14/15 15:30
 Percent Solids: 97
 Initial Volume: 4.8
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510373
 ESS Laboratory Sample ID: 1510373-01
 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 (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
trans-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
trans-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Trichloroethene	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Trichlorofluoromethane	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Vinyl Acetate	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Vinyl Chloride	ND (0.0107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Xylene O	ND (0.0054)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Xylene P,M	ND (0.0107)		8260B Low		1	10/16/15 14:30	CYJ0209	CJ51648
Xylenes (Total)	ND (0.0107)		8260B Low		1	10/16/15 14:30		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>121 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>112 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/15/15 11:50

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	149 (39.3)		8100M		1	10/15/15 17:41	CYJ0201	CJ51413
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>87 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-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-Biphenyl	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
1,2,4-Trichlorobenzene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
1,2-Dichlorobenzene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
1,3-Dichlorobenzene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
1,4-Dichlorobenzene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,3,4,6-Tetrachlorophenol	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,4,5-Trichlorophenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,4,6-Trichlorophenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,4-Dichlorophenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,4-Dimethylphenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,4-Dinitrophenol	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,4-Dinitrotoluene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2,6-Dinitrotoluene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2-Chloronaphthalene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2-Chlorophenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2-Methylnaphthalene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2-Methylphenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2-Nitroaniline	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
2-Nitrophenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
3,3'-Dichlorobenzidine	ND (0.704)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
3+4-Methylphenol	ND (0.704)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
3-Nitroaniline	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4,6-Dinitro-2-Methylphenol	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4-Bromophenyl-phenylether	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4-Chloro-3-Methylphenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4-Chloroaniline	ND (0.704)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4-Chloro-phenyl-phenyl ether	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4-Nitroaniline	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
4-Nitrophenol	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Acenaphthene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Acenaphthylene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Acetophenone	ND (0.704)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: G Lopes 10% Organics A
 Date Sampled: 10/14/15 15:30
 Percent Solids: 97
 Initial Volume: 14.6
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510373
 ESS Laboratory Sample ID: 1510373-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: VSC
 Prepared: 10/15/15 11:50

8270D Semi-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>
Aniline	ND (0.704)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Anthracene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Azobenzene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzo(a)anthracene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzo(a)pyrene	0.196 (0.176)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzo(b)fluoranthene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzo(g,h,i)perylene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzo(k)fluoranthene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzoic Acid	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Benzyl Alcohol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
bis(2-Chloroethoxy)methane	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
bis(2-Chloroethyl)ether	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
bis(2-chloroisopropyl)Ether	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
bis(2-Ethylhexyl)phthalate	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Butylbenzylphthalate	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Carbazole	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Chrysene	0.243 (0.176)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Dibenzo(a,h)Anthracene	ND (0.176)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Dibenzofuran	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Diethylphthalate	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Dimethylphthalate	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Di-n-butylphthalate	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Di-n-octylphthalate	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Fluoranthene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Fluorene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Hexachlorobenzene	ND (0.176)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Hexachlorobutadiene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Hexachlorocyclopentadiene	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Hexachloroethane	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Indeno(1,2,3-cd)Pyrene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Isophorone	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Naphthalene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-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>
Nitrobenzene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
N-Nitrosodimethylamine	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
N-Nitroso-Di-n-Propylamine	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
N-nitrosodiphenylamine	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Pentachlorophenol	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Phenanthrene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Phenol	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Pyrene	ND (0.352)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414
Pyridine	ND (1.76)		8270D		1	10/15/15 16:03	CYJ0180	CJ51414

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>47 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>72 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>50 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>61 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>42 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>51 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>49 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>57 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: G Lopes 10% Organics A
Date Sampled: 10/14/15 15:30
Percent Solids: 97

ESS Laboratory Work Order: 1510373
ESS Laboratory Sample ID: 1510373-01
Sample Matrix: Soil

Classical Chemistry

<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>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.09 (N/A)		9045		1	JLK	10/15/15 9:45	S.U.	CJ51504
Corrosivity (pH) Sample Temp	Soil pH measured in water at 18.7 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51452 - 3005A

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	114	9.80	mg/kg wet	139.0	82	80-120
Barium	183	9.80	mg/kg wet	203.0	90	80-120
Cadmium	77.1	1.96	mg/kg wet	96.00	80	80-120
Chromium	112	3.92	mg/kg wet	136.0	82	80-120
Lead	114	19.6	mg/kg wet	133.0	86	80-120
Selenium	140	19.6	mg/kg wet	177.0	79	77-123
Silver	33.6	1.96	mg/kg wet	40.20	83	80-120

LCS Dup

Arsenic	123	8.77	mg/kg wet	139.0	88	80-120	7	20
Barium	182	8.77	mg/kg wet	203.0	90	80-120	0.4	20
Cadmium	81.7	1.75	mg/kg wet	96.00	85	80-120	6	20
Chromium	119	3.51	mg/kg wet	136.0	88	80-120	7	20
Lead	124	17.5	mg/kg wet	133.0	93	80-120	8	20
Selenium	149	17.5	mg/kg wet	177.0	84	77-123	6	20
Silver	34.9	1.75	mg/kg wet	40.20	87	80-120	4	20

Batch CJ51630 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	14.5	1.80	mg/kg wet	12.90	112	80-120
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LCS Dup

Mercury	14.7	1.77	mg/kg wet	12.90	114	80-120	2	20
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Reference

Mercury	1.03	0.183	mg/kg wet	1.000	103	70-130
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51648 - 5035

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
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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51648 - 5035

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							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0535		mg/kg wet	0.05000		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0484		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0528		mg/kg wet	0.05000		106	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,2-Trichloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloropropene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trimethylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichloropropane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51648 - 5035

1,3-Dichlorobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichloropropane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dioxane	0.921	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130			
2-Chlorotoluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
4-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
4-Isopropyltoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
Acetone	0.285	0.0500	mg/kg wet	0.2500		114	70-130			
Benzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Bromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromodichloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromomethane	0.0510	0.0100	mg/kg wet	0.05000		102	70-130			
Carbon Disulfide	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Carbon Tetrachloride	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Chloroethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130			
Chloroform	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Chloromethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
cis-1,2-Dichloroethene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
cis-1,3-Dichloropropene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromochloromethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
Dibromomethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Diethyl Ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Ethyl tertiary-butyl ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0569	0.0250	mg/kg wet	0.05000		114	70-130			
Naphthalene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
n-Propylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Styrene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51648 - 5035

Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Toluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Trichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0852	0.0050	mg/kg wet	0.05000		170	70-130			B+
Vinyl Chloride	0.0446	0.0100	mg/kg wet	0.05000		89	70-130			
Xylene O	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0495		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,1-Trichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
1,1,2-Trichloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	3	25	
1,1-Dichloroethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
1,1-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
1,1-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
1,2,3-Trichlorobenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
1,2,3-Trichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
1,2,4-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,2-Dibromoethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
1,2-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	8	25	
1,2-Dichloroethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
1,2-Dichloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,3,5-Trimethylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	8	25	
1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130	10	20	
1-Chlorohexane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
2,2-Dichloropropane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	6	25	
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130	3	25	
2-Chlorotoluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
2-Hexanone	0.279	0.0500	mg/kg wet	0.2500		111	70-130	3	25	
4-Chlorotoluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	8	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51648 - 5035

4-Methyl-2-Pentanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130	3	25	
Acetone	0.296	0.0500	mg/kg wet	0.2500		119	70-130	4	25	
Benzene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
Bromobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	4	25	
Bromodichloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Bromoform	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Bromomethane	0.0519	0.0100	mg/kg wet	0.05000		104	70-130	2	25	
Carbon Disulfide	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	6	25	
Carbon Tetrachloride	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Chlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Chloroethane	0.0403	0.0100	mg/kg wet	0.05000		81	70-130	18	25	
Chloroform	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Chloromethane	0.0558	0.0100	mg/kg wet	0.05000		112	70-130	7	25	
cis-1,2-Dichloroethene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
cis-1,3-Dichloropropene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	5	25	
Dibromochloromethane	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	5	25	
Dibromomethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
Diethyl Ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
Di-isopropyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Ethyl tertiary-butyl ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	6	25	
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Hexachlorobutadiene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
Isopropylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
Methyl tert-Butyl Ether	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	5	25	
Methylene Chloride	0.0605	0.0250	mg/kg wet	0.05000		121	70-130	6	25	
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
n-Propylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
sec-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	
tert-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Tertiary-amyl methyl ether	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrahydrofuran	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	2	25	
Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
trans-1,2-Dichloroethene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
trans-1,3-Dichloropropene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Trichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Trichlorofluoromethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
Vinyl Acetate	0.0886	0.0050	mg/kg wet	0.05000		177	70-130	4	25	B+
Vinyl Chloride	0.0464	0.0100	mg/kg wet	0.05000		93	70-130	4	25	
Xylene O	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Xylene P,M	0.0986	0.0100	mg/kg wet	0.1000		99	70-130	5	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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 CJ51648 - [CALC]

Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0492		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0488		mg/kg wet	0.05000		98	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ51413 - 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	4.59		mg/kg wet	5.000		92	40-140			
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LCS

Decane (C10)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Total Petroleum Hydrocarbons	30.2	37.5	mg/kg wet	35.00		86	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		91	40-140			

Surrogate: O-Terphenyl	4.80		mg/kg wet	5.000		96	40-140			
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LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500		89	40-140	0.5	25	
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140	2	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510373

Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CJ51413 - 3546

Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		98	40-140	2	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140	1	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140	3	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140	2	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140	0.8	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		94	40-140	1	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		99	40-140	2	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140	2	25	
Total Petroleum Hydrocarbons	30.6	37.5	mg/kg wet	35.00		87	40-140	1	25	
Triacotane (C30)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	

Surrogate: O-Terphenyl 4.84 mg/kg wet 5.000 97 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	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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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	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							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							



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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.58		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Chlorophenol-d4	2.98		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	2.04		mg/kg wet	3.333		61	30-130			
Surrogate: 2-Fluorophenol	2.72		mg/kg wet	5.000		54	30-130			
Surrogate: Nitrobenzene-d5	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: Phenol-d6	2.99		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.29		mg/kg wet	3.333		69	30-130			

LCS

1,1-Biphenyl	2.18	0.333	mg/kg wet	3.333		66	40-140			
1,2,4-Trichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
1,4-Dichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.47	1.67	mg/kg wet	3.333		74	30-130			
2,4,5-Trichlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
2,4,6-Trichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dimethylphenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dinitrophenol	2.20	1.67	mg/kg wet	3.333		66	30-130			
2,4-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2,6-Dinitrotoluene	2.40	0.333	mg/kg wet	3.333		72	40-140			
2-Chloronaphthalene	2.00	0.333	mg/kg wet	3.333		60	40-140			
2-Chlorophenol	2.04	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140			
2-Methylphenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Nitroaniline	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.38	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.66	0.667	mg/kg wet	6.667		70	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			
4,6-Dinitro-2-Methylphenol	2.19	1.67	mg/kg wet	3.333		66	30-130			
4-Bromophenyl-phenylether	2.49	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.35	0.333	mg/kg wet	3.333		70	30-130			
4-Chloroaniline	1.94	0.667	mg/kg wet	3.333		58	40-140			
4-Chloro-phenyl-phenyl ether	2.34	0.333	mg/kg wet	3.333		70	40-140			
4-Nitroaniline	2.52	0.333	mg/kg wet	3.333		76	40-140			
4-Nitrophenol	2.35	1.67	mg/kg wet	3.333		71	30-130			
Acenaphthene	2.28	0.333	mg/kg wet	3.333		68	40-140			
Acenaphthylene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Acetophenone	2.35	0.667	mg/kg wet	3.333		70	40-140			
Aniline	1.68	0.667	mg/kg wet	3.333		50	40-140			
Anthracene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Azobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510373

Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Benzo(a)anthracene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)pyrene	2.48	0.167	mg/kg wet	3.333		74	40-140			
Benzo(b)fluoranthene	2.37	0.333	mg/kg wet	3.333		71	40-140			
Benzo(g,h,i)perylene	2.14	0.333	mg/kg wet	3.333		64	40-140			
Benzo(k)fluoranthene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Benzoic Acid	2.98	1.67	mg/kg wet	3.333		89	40-140			
Benzyl Alcohol	2.32	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140			
bis(2-chloroisopropyl)Ether	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	2.42	0.333	mg/kg wet	3.333		73	40-140			
Butylbenzylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140			
Carbazole	2.56	0.333	mg/kg wet	3.333		77	40-140			
Chrysene	2.57	0.167	mg/kg wet	3.333		77	40-140			
Dibenzo(a,h)Anthracene	2.25	0.167	mg/kg wet	3.333		67	40-140			
Dibenzofuran	2.20	0.333	mg/kg wet	3.333		66	40-140			
Diethylphthalate	2.49	0.333	mg/kg wet	3.333		75	40-140			
Dimethylphthalate	2.35	0.333	mg/kg wet	3.333		70	40-140			
Di-n-butylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	2.08	0.333	mg/kg wet	3.333		63	40-140			
Fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Fluorene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140			
Hexachlorobutadiene	2.20	0.333	mg/kg wet	3.333		66	40-140			
Hexachlorocyclopentadiene	1.42	1.67	mg/kg wet	3.333		43	40-140			
Hexachloroethane	2.02	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140			
Naphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Nitrobenzene	2.26	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.46	0.333	mg/kg wet	3.333		74	40-140			
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130			
Phenanthrene	2.47	0.333	mg/kg wet	3.333		74	40-140			
Phenol	2.09	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	2.22	0.333	mg/kg wet	3.333		67	40-140			
Pyridine	1.42	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	4.19		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Chlorophenol-d4	3.15		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.86		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.21		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.35		mg/kg wet	3.333		71	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

LCS Dup

1,1-Biphenyl	2.52	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,2,4-Trichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	13	30	
1,2-Dichlorobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,3-Dichlorobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	13	30	
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	13	30	
2,3,4,6-Tetrachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	15	30	
2,4,5-Trichlorophenol	2.89	0.333	mg/kg wet	3.333		87	30-130	16	30	
2,4,6-Trichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	17	30	
2,4-Dichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	15	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	16	30	
2,4-Dinitrophenol	2.62	1.67	mg/kg wet	3.333		79	30-130	18	30	
2,4-Dinitrotoluene	3.12	0.333	mg/kg wet	3.333		94	40-140	15	30	
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140	18	30	
2-Chloronaphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140	15	30	
2-Chlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	14	30	
2-Methylnaphthalene	2.41	0.333	mg/kg wet	3.333		72	40-140	14	30	
2-Methylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130	14	30	
2-Nitroaniline	2.33	0.333	mg/kg wet	3.333		70	40-140	16	30	
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		86	30-130	15	30	
3,3'-Dichlorobenzidine	2.61	0.667	mg/kg wet	3.333		78	40-140	9	30	
3+4-Methylphenol	5.28	0.667	mg/kg wet	6.667		79	30-130	13	30	
3-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	14	30	
4,6-Dinitro-2-Methylphenol	2.64	1.67	mg/kg wet	3.333		79	30-130	18	30	
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140	15	30	
4-Chloro-3-Methylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130	13	30	
4-Chloroaniline	2.26	0.667	mg/kg wet	3.333		68	40-140	15	30	
4-Chloro-phenyl-phenyl ether	2.68	0.333	mg/kg wet	3.333		80	40-140	13	30	
4-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	13	30	
4-Nitrophenol	2.77	1.67	mg/kg wet	3.333		83	30-130	16	30	
Acenaphthene	2.64	0.333	mg/kg wet	3.333		79	40-140	15	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	16	30	
Acetophenone	2.71	0.667	mg/kg wet	3.333		81	40-140	14	30	
Aniline	1.94	0.667	mg/kg wet	3.333		58	40-140	15	30	
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	14	30	
Azobenzene	2.80	0.333	mg/kg wet	3.333		84	40-140	16	30	
Benzo(a)anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140	14	30	
Benzo(a)pyrene	2.86	0.167	mg/kg wet	3.333		86	40-140	14	30	
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140	8	30	
Benzo(g,h,i)perylene	2.56	0.333	mg/kg wet	3.333		77	40-140	18	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	17	30	
Benzoic Acid	3.43	1.67	mg/kg wet	3.333		103	40-140	14	30	
Benzyl Alcohol	2.43	0.333	mg/kg wet	3.333		73	40-140	4	30	
bis(2-Chloroethoxy)methane	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
bis(2-Chloroethyl)ether	2.41	0.333	mg/kg wet	3.333		72	40-140	15	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ51414 - 3546										
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Ethylhexyl)phthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	14	30	
Butylbenzylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140	16	30	
Carbazole	2.94	0.333	mg/kg wet	3.333		88	40-140	14	30	
Chrysene	2.98	0.167	mg/kg wet	3.333		89	40-140	15	30	
Dibenzo(a,h)Anthracene	2.65	0.167	mg/kg wet	3.333		79	40-140	16	30	
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140	14	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	15	30	
Dimethylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140	16	30	
Di-n-butylphthalate	3.25	0.333	mg/kg wet	3.333		98	40-140	14	30	
Di-n-octylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140	12	30	
Fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140	12	30	
Fluorene	2.70	0.333	mg/kg wet	3.333		81	40-140	14	30	
Hexachlorobenzene	2.80	0.167	mg/kg wet	3.333		84	40-140	16	30	
Hexachlorobutadiene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Hexachlorocyclopentadiene	1.71	1.67	mg/kg wet	3.333		51	40-140	19	30	
Hexachloroethane	2.31	0.333	mg/kg wet	3.333		69	40-140	14	30	
Indeno(1,2,3-cd)Pyrene	2.66	0.333	mg/kg wet	3.333		80	40-140	17	30	
Isophorone	2.63	0.333	mg/kg wet	3.333		79	40-140	15	30	
Naphthalene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Nitrobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140	15	30	
N-Nitrosodimethylamine	2.08	0.333	mg/kg wet	3.333		62	40-140	18	30	
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.85	0.333	mg/kg wet	3.333		86	40-140	15	30	
Pentachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130	15	30	
Phenanthrene	2.85	0.333	mg/kg wet	3.333		86	40-140	14	30	
Phenol	2.39	0.333	mg/kg wet	3.333		72	30-130	13	30	
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140	15	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.57		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	4.70		mg/kg wet	5.000		94	30-130			
Surrogate: 2-Chlorophenol-d4	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: Phenol-d6	3.60		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.66		mg/kg wet	3.333		80	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

Notes and Definitions

- Z-10 Soil pH measured in water at 18.7 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- IM Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510373

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/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

Sample and Cooler Receipt Checklist

Client: Charter Environmental
 Client Project ID: _____
 Shipped/Delivered Via: Other

ESS Project ID: 15100373
 Date Project Due: 10/19/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <u>Cooler Temp: 14.7</u> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <u>Iced With: Ice</u> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: _____ | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: _____ | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: _____ | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: _____ | |

18. Was there need to call project manager to discuss status? If yes, please explain.

LL VIALS FROZEN @ 1825 JI 10/14/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	40 ml - VOA	2	other
1	Yes	8 oz Soil Jar	1	NP

Completed By: [Signature]

Date/Time: 10/14/15 1818

Reviewed By: [Signature]

Date/Time: 10/14/15 1825

CHAIN OF CUSTODY

ESS Lab # **1510373**

Turn Time: 3 Days Reporting Limits: RI DEM RDEC	
Regulatory State: Rhode Island Is this project for any of the following?: <input type="radio"/> OCT RCP <input type="radio"/> MA MCP <input type="radio"/> ORGP <input type="radio"/> DOD	
Project # 74-15-0002.134 Project Name: Textron Providence	
Address: 500 Harrison Avenue, Suite 4R PO #	
City: Boston State: MA Zip Code: 02118	
Telephone Number: (857) 246-6812 FAX Number: Email Address: pleofanti@charter.us	
Company Name: Charter Environmental	
Contact Person: Paul J. Leofanti, Jr.	
ESS Lab ID: 1	Collection Date: 10/14/15
Collection Time: 15:50	Sample Type: Grab
Sample Matrix: Soil	Sample ID: G Lopes 10% Organics A
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-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	
Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAce, NaOH, 9-NH4Cl, 10-Other*	
PH: Corrosivity 9045	
Analysis:	
VOC Low Level: <input checked="" type="checkbox"/>	
SVOC: <input checked="" type="checkbox"/>	
RCRA 8: <input checked="" type="checkbox"/>	
TPH: <input checked="" type="checkbox"/>	
Number of Containers: 1	

Laboratory Use Only Sampled by: G. Gilbert-Thielsch	
Comments: Please specify "Other" preservative and containers types in this space	
Cooler Present: <input checked="" type="checkbox"/> YES <input type="checkbox"/> Drop Off	
Seals Intact: <input checked="" type="checkbox"/> NO <input type="checkbox"/> Pickup	
Cooler Temperature: 14.7 Technician Hours: 10/14/15 16:50	
Received by: (Signature, Date & Time) <i>Paul J. Leofanti</i> 10/14/15 16:50	Requisitioned by: (Signature, Date & Time)
Received by: (Signature, Date & Time)	Requisitioned by: (Signature, Date & Time)

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # **1510373**

Turn Time		3 Days		Reporting Limits			RI DEM RDEC			
Regulatory State		Rhode Island		Electronic Deliverables			<input checked="" type="checkbox"/> Data Checker <input type="checkbox"/> Other (Please Specify →)			
<input type="checkbox"/> OCT RCP <input type="checkbox"/> OMA MCP <input type="checkbox"/> ORGP <input type="checkbox"/> ODOB		Is this project for any of the following?: Project # 74-15-0002.134 Project Name Textron Providence			<input checked="" type="checkbox"/> PH: Corrosivity 9045			<input type="checkbox"/> VOC <input type="checkbox"/> VOC Low Level <input type="checkbox"/> SVOC <input type="checkbox"/> RCRA 8 <input type="checkbox"/> TPH		
Address 500 Harrison Avenue, Suite 4R Zip Code 02118 PO # Email Address pleofanti@charter.us		State MA		Project Name Textron Providence						
City	Boston	State	MA	Address	500 Harrison Avenue, Suite 4R		Zip Code	02118	PO #	
Telephone Number	(857) 246-6812	FAX Number		Sample Type	Grab		Sample Matrix	Soil		
ESS Lab ID	1	Collection Date	10/14/15	Collection Time	15:50		Sample ID	Loam A		
Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-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									
Preservation Code:	1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAce, NaOH, 9-NH4Cl, 10-Other*									
Number of Containers:	1 1 1 1 2 1									

Company Name: Charter Environmental
 Contact Person: Paul J. Leofanti, Jr.
 City: Boston State: MA
 Telephone Number: (857) 246-6812
 FAX Number:
 Address: 500 Harrison Avenue, Suite 4R
 Zip Code: 02118
 PO #:
 Email Address: pleofanti@charter.us
 Project Name: Textron Providence
 Project # 74-15-0002.134
 Sample Type: Grab
 Sample Matrix: Soil
 Sample ID: Loam A
 Collection Date: 10/14/15
 Collection Time: 15:50
 Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-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
 Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAce, NaOH, 9-NH4Cl, 10-Other*
 Number of Containers: 1 1 1 1 2 1
 Analyzed: _____
 Container Type: _____
 Container Volume: _____
 Preservation Code: _____
 Number of Containers: _____

Laboratory Use Only

Cooler Present: YES Drop Off

Seals Intact: NO Pickup

Cooler Temperature: 14.7 deg C Technician Hours → 10/14/15 16:50

Received by: _____ 10/14/15
 Requisitioned by: _____ 16:50

Received by: (Signature, Date & Time)
 Requisitioned by: (Signature, Date & Time)

Sampled by: G. Gilbert-Thielsch
 Comments: Please specify "Other" preservative and containers types in this space
 Please CC: mpolsky@thielsch.com



195 Frances Avenue
 Cranston RI, 02910
 Phone: (401)-467-6454
 Fax: (401)-467-2398
<http://www.thielsch.com>

Client Information:
Charter Contracting
Boston, MA

PM: Paul Leofanti Jr.
 Assigned By: Paul Leofanti Jr.

Laboratory Information
 Project Name:
Textron Providence
Providence, RI
 TEI Project Number: CTS-74-15-0002.134
 Report Date: 7/20/2015

LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic Mix	L3	15-S-700				8.8		14.2							Brown Poorly-graded Sand with Silt and Gravel (SP-SM)

Reviewed By *Matthew O'Neil*

Date Reviewed 7/20/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
23.7%

Sand
67.5%

Fines
8.8%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-700	G. Lopes	10% Organic Mix	L3	Brown Poorly-graded Sand with Silt and Gravel (SP-SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	71.0
3"	100.0	#20	56.6
2"	100.0	#40	36.5
1"	100.0	#60	21.5
3/4"	99.6	#100	13.0
1/2"	95.9	#200	8.8
#4	76.3		



195 Frances Ave., Cranston, RI 02109
401-467-6454

Client: Charter Contracting
Textron Providence
Providence, RI
Thielsch CTS File # 74-15-0002.134
Tested by: MK Date: 7/17/15
Reviewed by: MBP Date: 7/20/15



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Client Information:
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 Boston, MA

PM: Paul Leofanti Jr.
 Assigned By: Paul Leofanti Jr.

Laboratory Information
 Project Name:
Textron Providence
 Providence, RI

TEI Project Number: CTS-74-15-0002.134
 Report Date: 9/22/2015

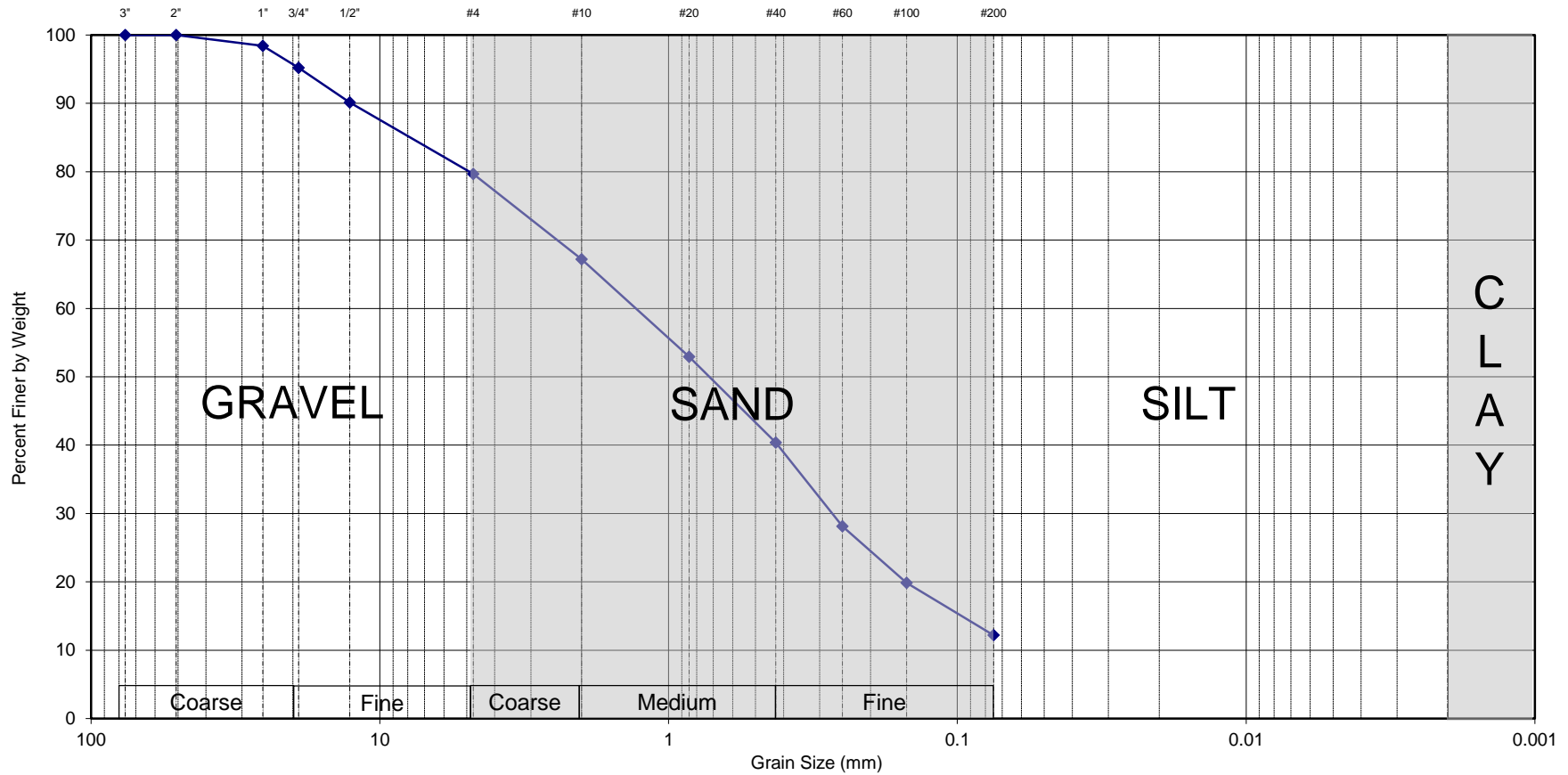
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic + Sand	3	15-S-918	18.6			12.2		11.8							Dark brown Silty Sand with Gravel (SM)

Reviewed By 

Date Reviewed 9/22/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
20.3%

Sand
67.5%

Fines
12.2%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-918	G. Lopes	10% Organic + Sand	Topsoil-3	Dark brown Silty Sand with Gravel (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	67.2
3"	100.0	#20	52.9
2"	100.0	#40	40.4
1"	98.4	#60	28.1
3/4"	95.2	#100	19.9
1/2"	90.1	#200	12.2
#4	79.7		



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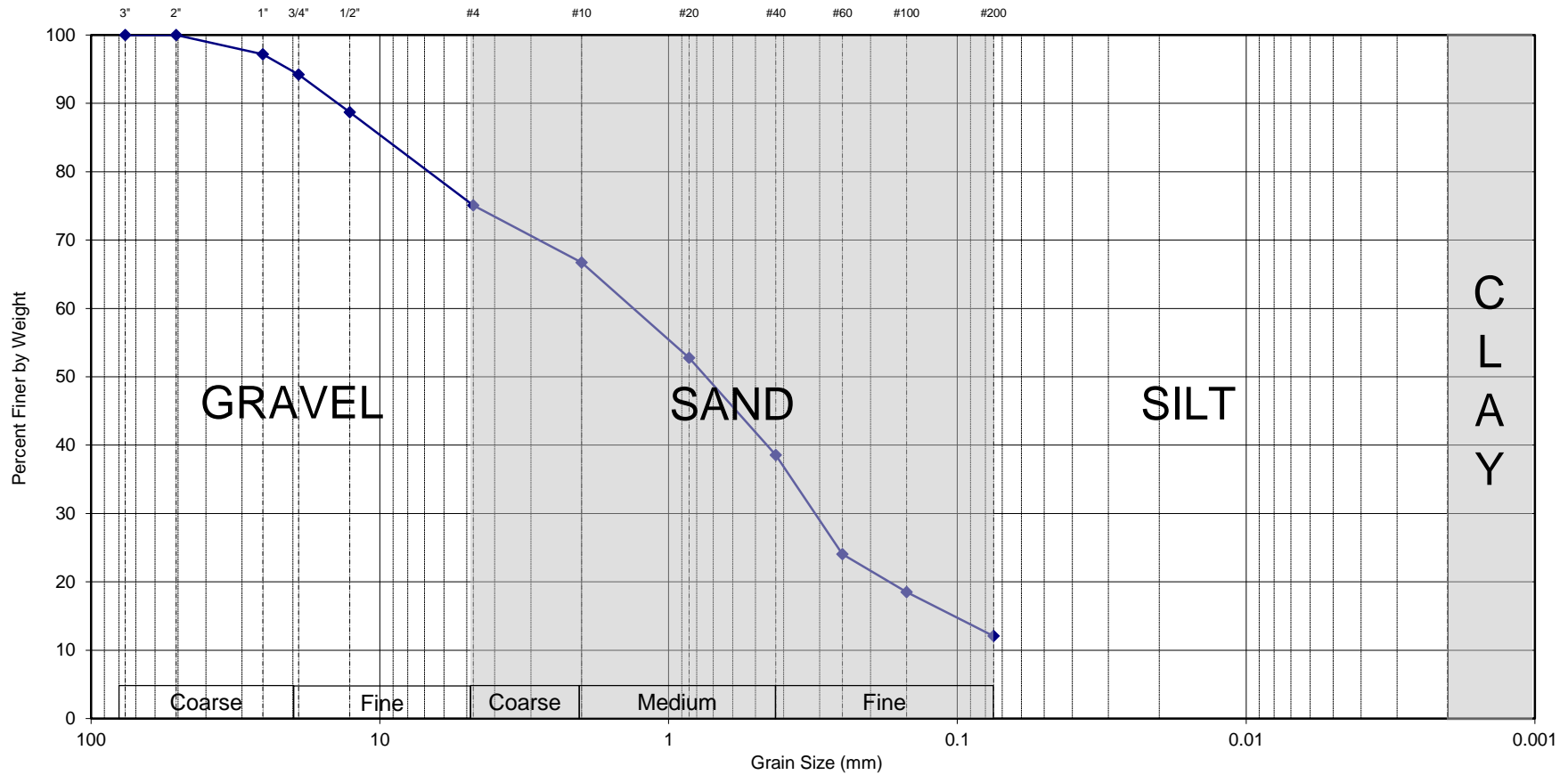
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic + Sand	1	15-S-916	19.1			12.1		11.5							Dark brown Silty Sand with Gravel (SM)

Reviewed By

Date Reviewed 9/22/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
24.9%

Sand
63.0%

Fines
12.1%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-916	G. Lopes	10% Organic + Sand	Topsoil-1	Dark brown Silty Sand with Gravel (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	66.7
3"	100.0	#20	52.8
2"	100.0	#40	38.5
1"	97.2	#60	24.1
3/4"	94.2	#100	18.5
1/2"	88.7	#200	12.1
#4	75.1		



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Laboratory Information
 Project Name:
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 Providence, RI

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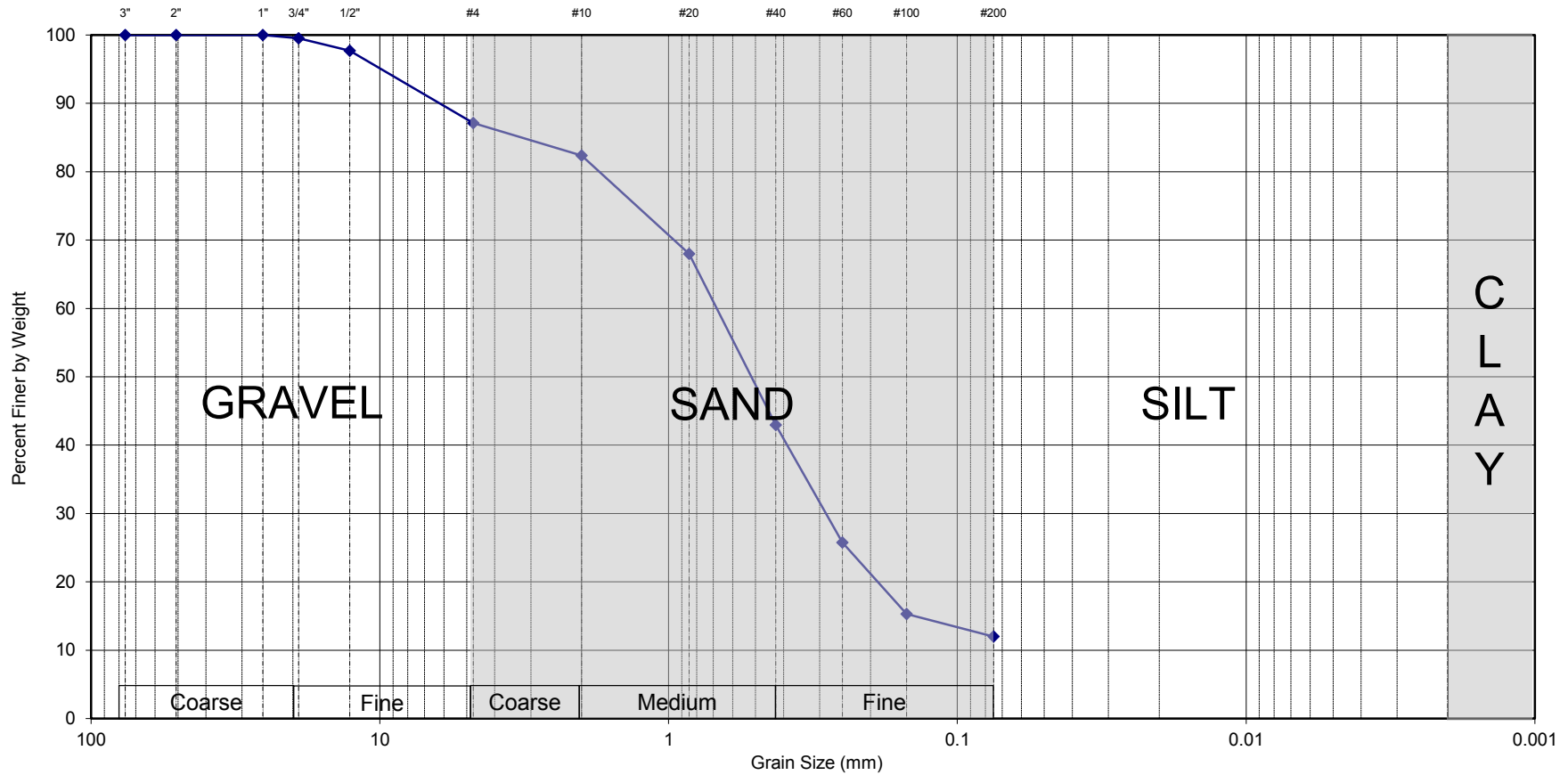
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic + Sand	4	15-S-927	12.4			12.0		11.1							Brown Silty Sand (SM)

Reviewed By 

Date Reviewed 9/25/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
12.9%

Sand
75.1%

Fines
12.0%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-927	G Lopes	Topsoil+10%	with Sand	Brown Silty Sand (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	82.4
3"	100.0	#20	68.0
2"	100.0	#40	42.9
1"	100.0	#60	25.8
3/4"	99.5	#100	15.3
1/2"	97.7	#200	12.0
#4	87.1		



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Laboratory Information
 Project Name:
Textron Providence
 Providence, RI

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 Report Date: 10/2/2015

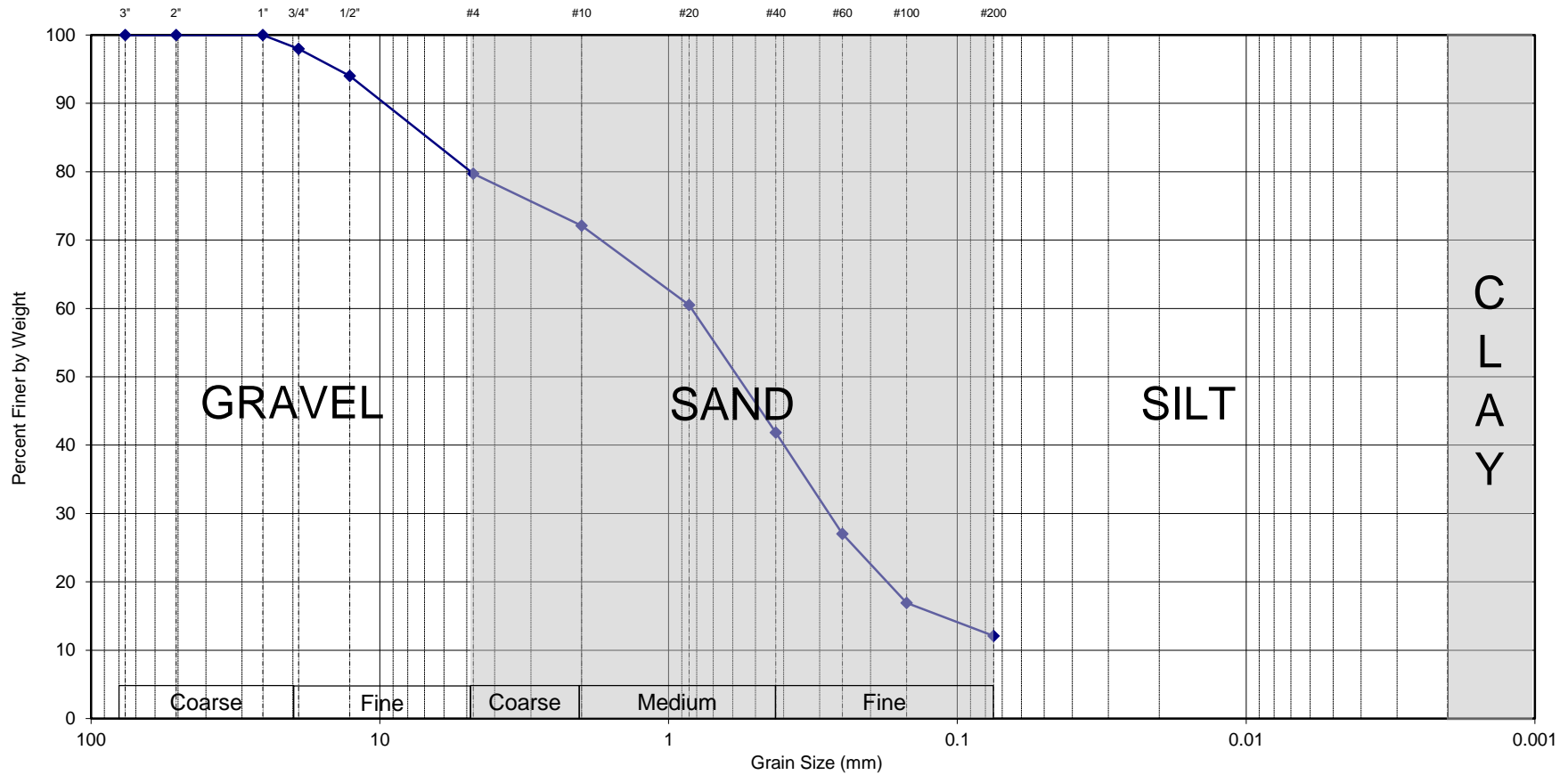
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2 μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic + Sand	6	15-S-942	14.2			12.1		12.1							Brown Silty Sand with Gravel (SM)

Reviewed By 

Date Reviewed 10/2/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
20.3%

Sand
67.6%

Fines
12.1%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-942	G Lopes	Topsoil+10%	with Sand	Brown Silty Sand with Gravel (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	72.1
3"	100.0	#20	60.5
2"	100.0	#40	41.8
1"	100.0	#60	27.0
3/4"	98.0	#100	16.9
1/2"	94.0	#200	12.1
#4	79.7		



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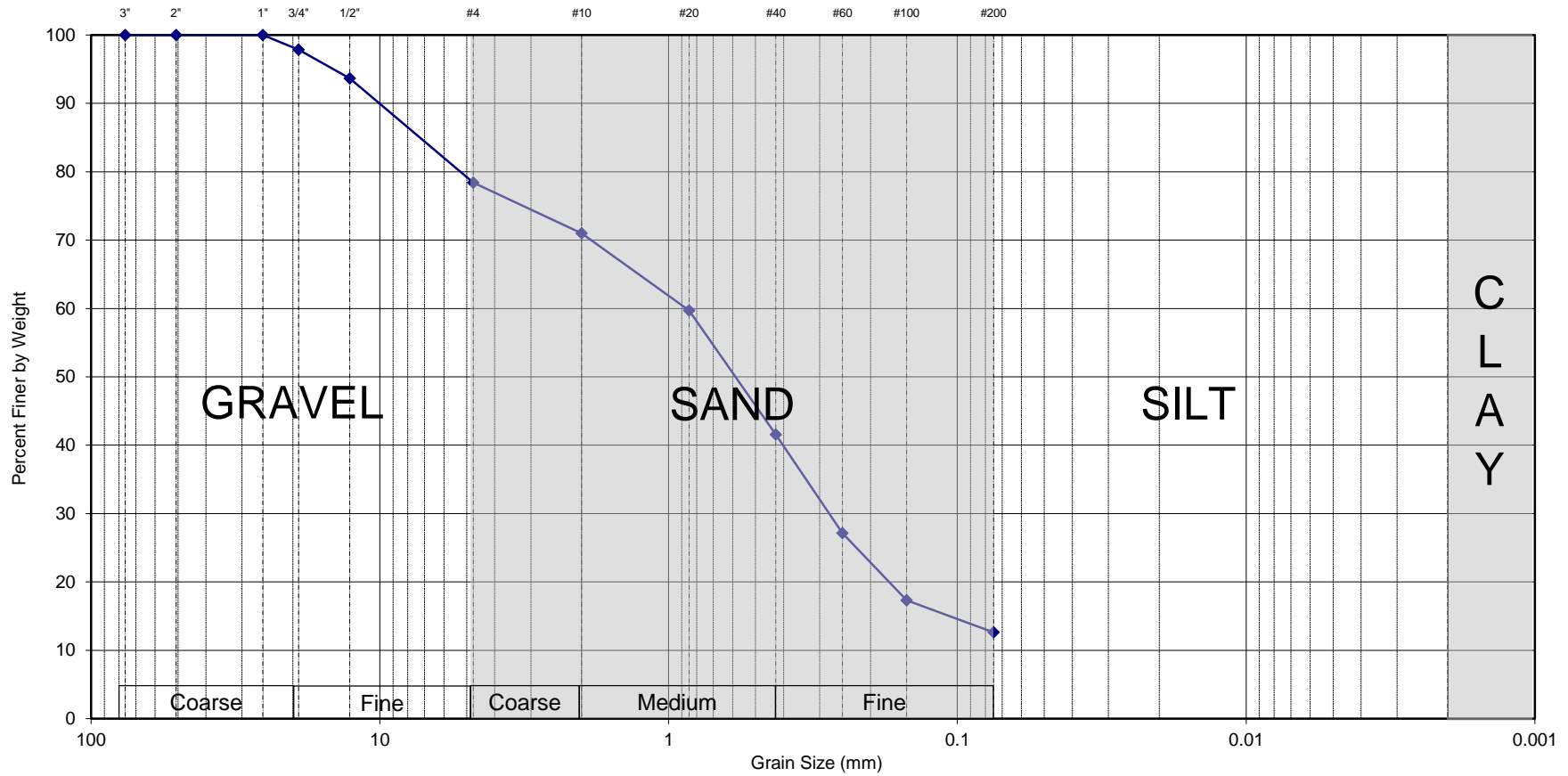
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic + Sand	8	15-S-944	13.8			12.6		12.5							Brown Silty Sand with Gravel (SM)

Reviewed By

Date Reviewed 10/2/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
21.6%

Sand
65.8%

Fines
12.6%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-944	G Lopes	Topsoil+10%	with Sand	Brown Silty Sand with Gravel (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	71.0
3"	100.0	#20	59.7
2"	100.0	#40	41.6
1"	100.0	#60	27.2
3/4"	97.9	#100	17.3
1/2"	93.6	#200	12.6
#4	78.4		



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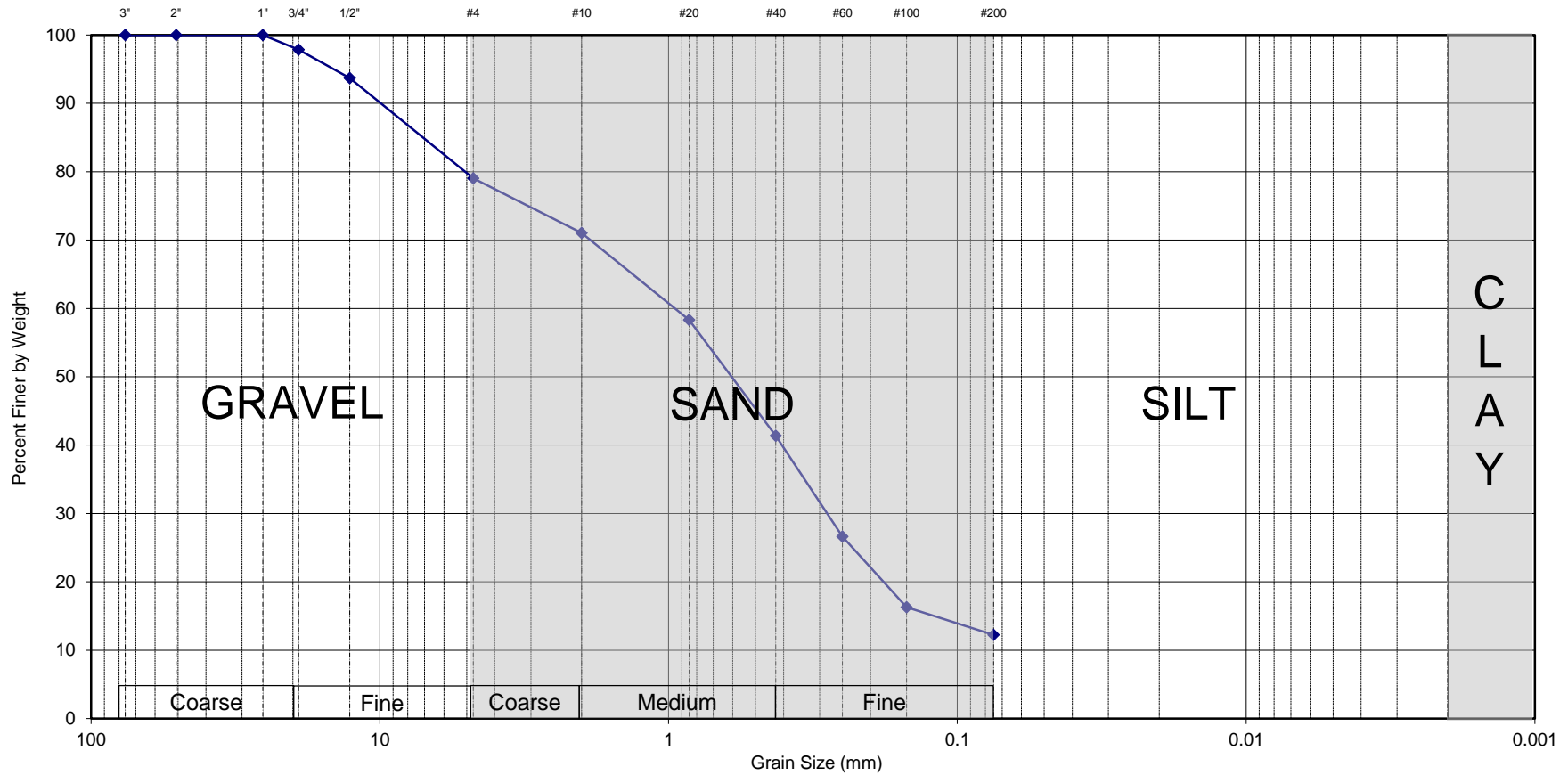
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic + Sand	9	15-S-945	12.6			12.2		12.1							Brown Silty Sand with Gravel (SM)

Reviewed By

Date Reviewed 10/2/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
21.0%

Sand
66.8%

Fines
12.2%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-945	G Lopes	Topsoil+10%	with Sand	Brown Silty Sand with Gravel (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	71.0
3"	100.0	#20	58.3
2"	100.0	#40	41.4
1"	100.0	#60	26.6
3/4"	97.9	#100	16.3
1/2"	93.7	#200	12.2
#4	79.0		



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 Providence, RI

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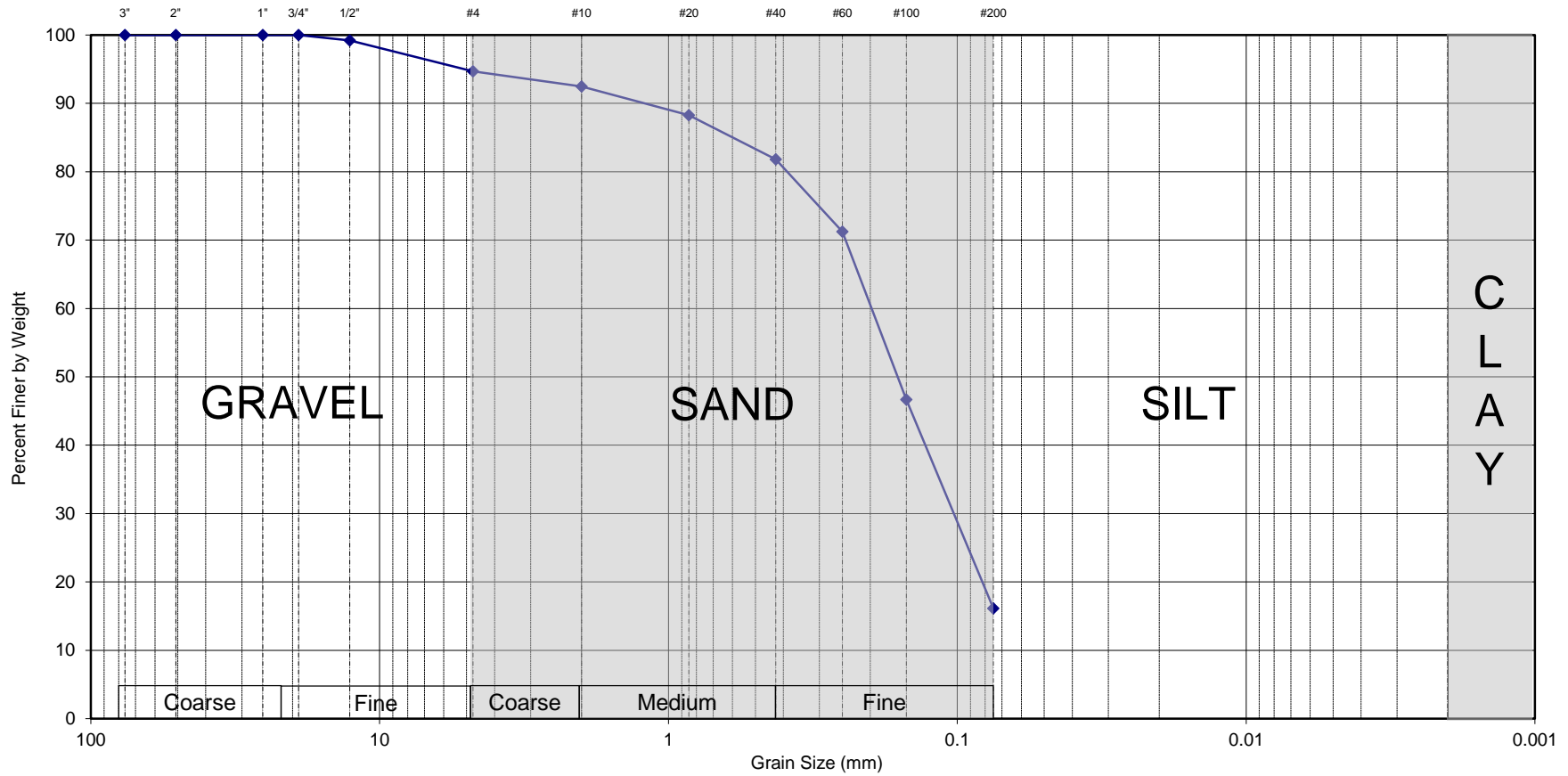
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2 μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic	2	15-S-1030	17.5			16.1		13.1							Dark brown Silty Sand with Gravel (SM)

Reviewed By

Date Reviewed 10/14/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
5.3%

Sand
78.6%

Fines
16.1%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-1029	Lopes-Raynham	Topsoil+10%	2	Brown Silty Sand (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	92.5
3"	100.0	#20	88.3
2"	100.0	#40	81.8
1"	100.0	#60	71.2
3/4"	100.0	#100	46.7
1/2"	99.2	#200	16.1
#4	94.7		

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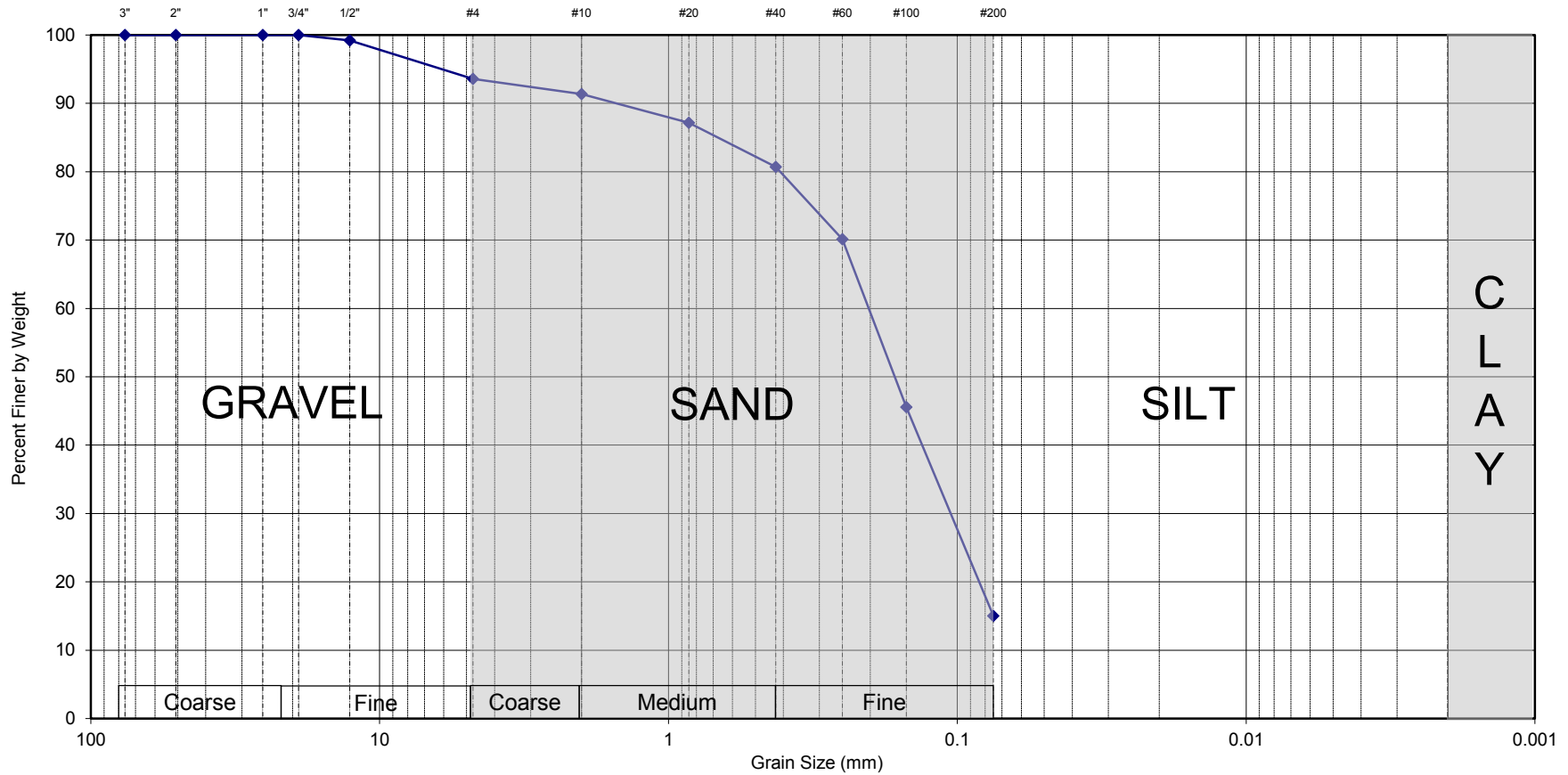
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic	4	15-S-1029	18.9			15.0		12.9							Dark brown Silty Sand with Gravel (SM)

Reviewed By

Date Reviewed 10/14/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
6.4%

Sand
78.6%

Fines
15.0%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-1029	Lopes-Raynham	Topsoil+10%	4	Brown Silty Sand (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	91.4
3"	100.0	#20	87.2
2"	100.0	#40	80.7
1"	100.0	#60	70.1
3/4"	100.0	#100	45.6
1/2"	99.2	#200	15.0
#4	93.6		

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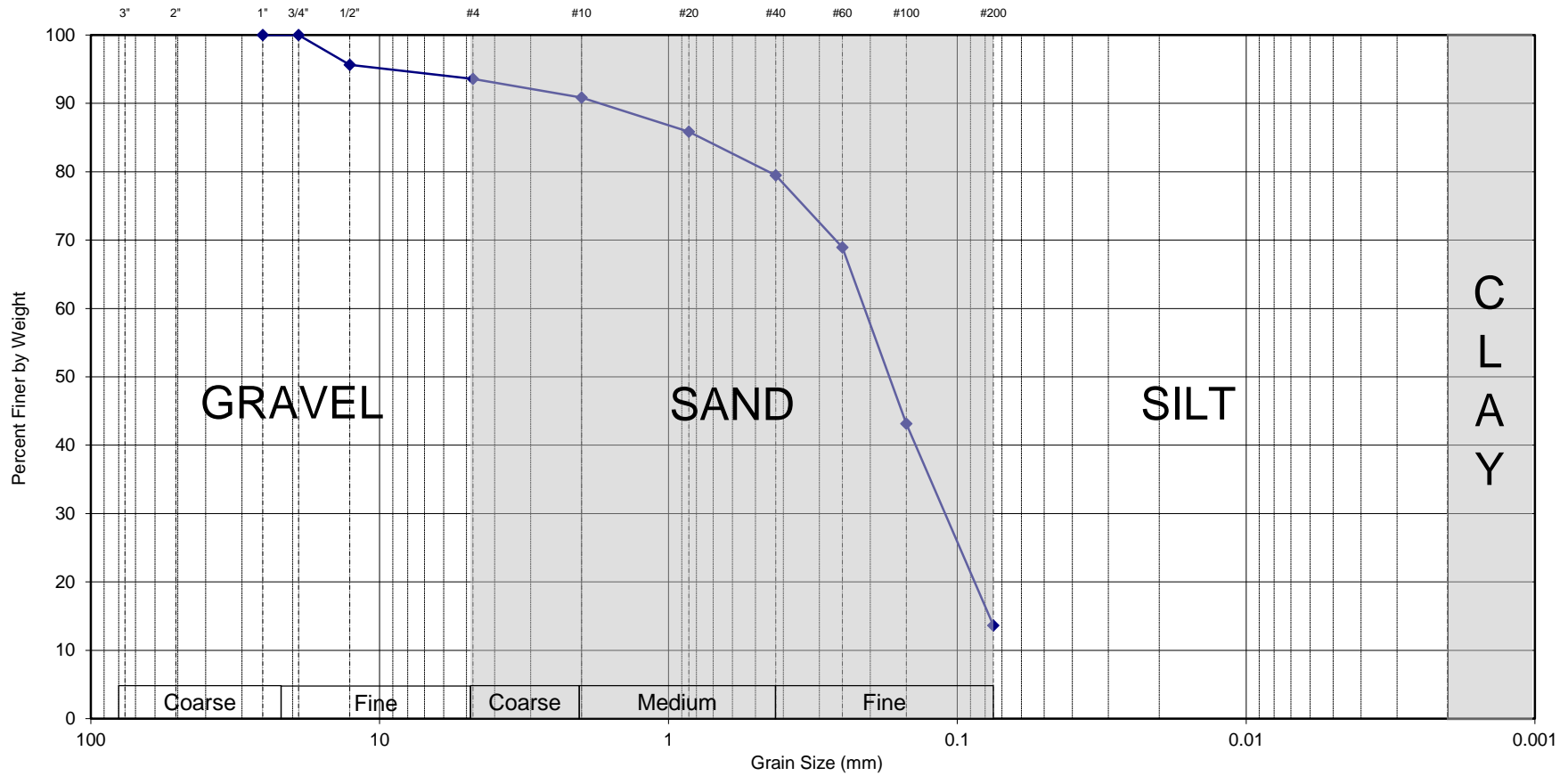
LABORATORY TESTING DATA SHEET

Source	Material	Sample	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	pH	Loose unit wt. pcf	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) Corrected	CBR Dry unit wt. pcf	CBR @ 0.1" @ 0.2"	Laboratory Log and Soil Description
G. Lopes	10% Organic	A	15-S-1057	13.8			13.6		11.6							Dark brown Silty Sand (SM)

Reviewed By 

Date Reviewed 10/19/2015

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
6.4%

Sand
80.0%

Fines
13.6%

Lab #	Source	Material	Sample	Description	WC	LL	PL	PI
15-S-1057	Lopes-Raynham	Topsoil+10%	A	Brown Silty Sand (SM)				

Gravel		Sand	
Sieve Size	% Passing	Sieve Size	% Passing
4"	100.0	#10	90.8
3"	0.0	#20	85.9
2"	0.0	#40	79.5
1"	100.0	#60	68.9
3/4"	100.0	#100	43.2
1/2"	95.6	#200	13.6
#4	93.6		

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