



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: 1510061

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:05 pm, Oct 09, 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 October 02, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on October 2, 2015 at 17:30.

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>
1510061-01	Material S&S Loam 4	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



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PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ50521-BS1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (141% @ 70-130%)

CJ50521-BSD1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (173% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0063-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).

Total Petroleum Hydrocarbons (21% @ 20%)

8270D Semi-Volatile Organic Compounds

CYJ0051-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (100% @ 80-120%), Benzoic Acid (83% @ 80-120%)

CYJ0051-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

3-Nitroaniline (22% @ 20%), 4-Nitroaniline (23% @ 20%), 4-Nitrophenol (28% @ 20%),
bis(2-Chloroethyl)ether (26% @ 20%)

CYJ0051-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (25% @ 20%), Pyridine (24% @ 20%)

CYJ0066-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (76% @ 80-120%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

Aniline (32% @ 20%), Azobenzene (24% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%),
Di-n-octylphthalate (22% @ 20%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Benzoic Acid (24% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (29% @ 20%)

CYJ0076-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (106% @ 80-120%), Benzoic Acid (81% @ 80-120%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

bis(2-Chloroethyl)ether (30% @ 20%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (30% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pyridine (28% @ 20%)

Total Metals

CJ50535-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Arsenic (32% @ 20%)

No other observations noted.

End of Project Narrative.



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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: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
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 (2.47)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535
Barium	21.3 (2.47)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535
Cadmium	ND (0.49)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535
Chromium	4.03 (0.99)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535
Lead	6.79 (4.94)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535
Mercury	ND (0.033)		7471B		1	PJP	10/06/15 14:12	0.65	40	CJ50536
Selenium	ND (4.94)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535
Silver	ND (0.49)		6010C		1	KJK	10/06/15 21:56	2.22	100	CJ50535



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Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
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 (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,1,2,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1,4-Dioxane	ND (0.0929)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
1-Chlorohexane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
2-Butanone	ND (0.0465)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
2-Chlorotoluene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
2-Hexanone	ND (0.0465)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
4-Chlorotoluene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
4-Methyl-2-Pentanone	ND (0.0465)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Acetone	ND (0.0465)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Benzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Bromobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521



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 Client Sample ID: Material S&S Loam 4
 Date Sampled: 10/02/15 14:30
 Percent Solids: 91
 Initial Volume: 5.9
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510061
 ESS Laboratory Sample ID: 1510061-01
 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 (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Bromodichloromethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Bromoform	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Bromomethane	ND (0.0093)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Carbon Disulfide	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Chlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Chloroethane	ND (0.0093)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Chloroform	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Chloromethane	ND (0.0093)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Dibromochloromethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Dibromomethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Dichlorodifluoromethane	ND (0.0093)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Diethyl Ether	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Di-isopropyl ether	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Ethylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Isopropylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Methylene Chloride	ND (0.0232)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Naphthalene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
n-Butylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
n-Propylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
sec-Butylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Styrene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
tert-Butylbenzene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Tetrachloroethene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Tetrahydrofuran	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521



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Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
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 (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Trichloroethene	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Vinyl Acetate	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Vinyl Chloride	ND (0.0093)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Xylene O	ND (0.0046)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Xylene P,M	ND (0.0093)		8260B Low		1	10/05/15 14:23	CYJ0047	CJ50521
Xylenes (Total)	ND (0.0093)		8260B Low		1	10/05/15 14:23		[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>75 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>96 %</i>		<i>70-130</i>



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Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/2/15 18:05

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	75.8 (42.8)		8100M		1	10/06/15 1:04	CYJ0063	CJ50214
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		63 %		40-140				



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Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
1,2,4-Trichlorobenzene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
1,2-Dichlorobenzene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
1,3-Dichlorobenzene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
1,4-Dichlorobenzene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,3,4,6-Tetrachlorophenol	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,4,5-Trichlorophenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,4,6-Trichlorophenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,4-Dichlorophenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,4-Dimethylphenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,4-Dinitrophenol	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,4-Dinitrotoluene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2,6-Dinitrotoluene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2-Chloronaphthalene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2-Chlorophenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2-Methylnaphthalene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2-Methylphenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2-Nitroaniline	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
2-Nitrophenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
3,3'-Dichlorobenzidine	ND (0.773)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
3+4-Methylphenol	ND (0.773)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
3-Nitroaniline	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4,6-Dinitro-2-Methylphenol	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4-Bromophenyl-phenylether	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4-Chloro-3-Methylphenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4-Chloroaniline	ND (0.773)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4-Chloro-phenyl-phenyl ether	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4-Nitroaniline	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
4-Nitrophenol	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Acenaphthene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Acenaphthylene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Acetophenone	ND (0.773)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.773)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Anthracene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Azobenzene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzo(a)anthracene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzo(a)pyrene	ND (0.193)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzo(b)fluoranthene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzo(g,h,i)perylene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzo(k)fluoranthene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzoic Acid	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Benzyl Alcohol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
bis(2-Chloroethoxy)methane	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
bis(2-Chloroethyl)ether	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
bis(2-chloroisopropyl)Ether	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
bis(2-Ethylhexyl)phthalate	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Butylbenzylphthalate	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Carbazole	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Chrysene	ND (0.193)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Dibenzo(a,h)Anthracene	ND (0.193)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Dibenzofuran	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Diethylphthalate	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Dimethylphthalate	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Di-n-butylphthalate	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Di-n-octylphthalate	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Fluoranthene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Fluorene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Hexachlorobenzene	ND (0.193)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Hexachlorobutadiene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Hexachlorocyclopentadiene	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Hexachloroethane	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Indeno(1,2,3-cd)Pyrene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Isophorone	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Naphthalene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
N-Nitrosodimethylamine	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
N-Nitroso-Di-n-Propylamine	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
N-nitrosodiphenylamine	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Pentachlorophenol	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Phenanthrene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Phenol	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Pyrene	ND (0.386)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515
Pyridine	ND (1.93)		8270D		1	10/05/15 19:03	CYJ0051	CJ50515

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>67 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>73 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>72 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>77 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>67 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 10/02/15 14:30
Percent Solids: 91

ESS Laboratory Work Order: 1510061
ESS Laboratory Sample ID: 1510061-01
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)	5.60 (N/A)		9045		1	MJV	10/02/15 18:16	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.5 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510061

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 CJ50535 - 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	63.4	9.80	mg/kg wet	52.30	121	43-169
Barium	141	9.80	mg/kg wet	145.0	97	80-120
Cadmium	55.0	1.96	mg/kg wet	71.60	77	62-138
Chromium	79.9	3.92	mg/kg wet	88.50	90	80-120
Lead	54.7	19.6	mg/kg wet	77.80	70	69-131
Selenium	77.5	19.6	mg/kg wet	81.10	96	80-120
Silver	117	1.96	mg/kg wet	114.0	102	80-120

LCS Dup

Arsenic	45.8	9.26	mg/kg wet	52.30	88	43-169	32	20	D+
Barium	146	9.26	mg/kg wet	145.0	101	80-120	4	20	
Cadmium	56.0	1.85	mg/kg wet	71.60	78	62-138	2	20	
Chromium	82.7	3.70	mg/kg wet	88.50	93	80-120	3	20	
Lead	55.4	18.5	mg/kg wet	77.80	71	69-131	1	20	
Selenium	80.2	18.5	mg/kg wet	81.10	99	80-120	3	20	
Silver	121	1.85	mg/kg wet	114.0	106	80-120	4	20	

Batch CJ50536 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.40	3.81	mg/kg wet	9.700	97	80-120
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LCS Dup

Mercury	10.5	3.60	mg/kg wet	9.700	109	80-120	11	20	
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 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: 1510061

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 CJ50521 - 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: 1510061

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 CJ50521 - 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	0.0614		mg/kg wet	0.05000		123	70-130			
Surrogate: 4-Bromofluorobenzene	0.0416		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0452		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,2,2-Tetrachloroethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,1,2-Trichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloropropene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,3-Trichloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trichlorobenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromo-3-Chloropropane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloropropane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,3-Dichloropropane	0.0468	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: 1510061

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 CJ50521 - 5035

1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130			
1-Chlorohexane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
2,2-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
2-Hexanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
4-Isopropyltoluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130			
Acetone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
Benzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Bromobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Bromochloromethane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Bromodichloromethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Bromomethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Carbon Disulfide	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Chlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Chloroform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Chloromethane	0.0461	0.0100	mg/kg wet	0.05000		92	70-130			
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromomethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0475	0.0100	mg/kg wet	0.05000		95	70-130			
Diethyl Ether	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Ethyl tertiary-butyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Hexachlorobutadiene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Methyl tert-Butyl Ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0547	0.0250	mg/kg wet	0.05000		109	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
n-Propylbenzene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
sec-Butylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Styrene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
tert-Butylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
Tertiary-amyl methyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrachloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510061

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 CJ50521 - 5035

Toluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,3-Dichloropropene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichloroethene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Trichlorofluoromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0705	0.0050	mg/kg wet	0.05000		141	70-130			B+
Vinyl Chloride	0.0503	0.0100	mg/kg wet	0.05000		101	70-130			
Xylene O	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0905	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0546		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0483		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0492		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
1,1,1-Trichloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	17	25	
1,1,2-Trichloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	15	25	
1,1-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	13	25	
1,1-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	14	25	
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
1,2,3-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	16	25	
1,2,3-Trichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
1,2,4-Trichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	15	25	
1,2-Dibromo-3-Chloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	21	25	
1,2-Dibromoethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	16	25	
1,2-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,2-Dichloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	15	25	
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,3,5-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	14	25	
1,3-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,3-Dichloropropane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
1,4-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130	13	20	
1-Chlorohexane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
2,2-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	14	25	
2-Butanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130	18	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	13	25	
2-Hexanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	20	25	
4-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	12	25	
4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	20	25	
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130	21	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 5035

Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	12	25	
Bromobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Bromochloromethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	16	25	
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	14	25	
Bromoform	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	16	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	22	25	
Carbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	14	25	
Carbon Tetrachloride	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	13	25	
Chlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
Chloroethane	0.0423	0.0100	mg/kg wet	0.05000		85	70-130	9	25	
Chloroform	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	13	25	
Chloromethane	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	13	25	
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	13	25	
cis-1,3-Dichloropropene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
Dibromochloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130	16	25	
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
Dichlorodifluoromethane	0.0538	0.0100	mg/kg wet	0.05000		108	70-130	12	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	17	25	
Di-isopropyl ether	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
Ethyl tertiary-butyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	12	25	
Hexachlorobutadiene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
Isopropylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	19	25	
Methylene Chloride	0.0628	0.0250	mg/kg wet	0.05000		126	70-130	14	25	
Naphthalene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	19	25	
n-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
n-Propylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	15	25	
sec-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
Styrene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
tert-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	17	25	
Tetrachloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tetrahydrofuran	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	23	25	
Toluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	12	25	
trans-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	15	25	
Vinyl Acetate	0.0864	0.0050	mg/kg wet	0.05000		173	70-130	20	25	B+
Vinyl Chloride	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	11	25	
Xylene O	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	11	25	
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0556		mg/kg wet	0.05000		111	70-130			



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 5035

Surrogate: 4-Bromofluorobenzene	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50214 - 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	4.95		mg/kg wet	5.000		99	40-140			
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LCS

Decane (C10)	1.7	0.2	mg/kg wet	2.500		69	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		93	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		97	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		90	40-140			

Surrogate: O-Terphenyl	4.38		mg/kg wet	5.000		88	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	11	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		103	40-140	13	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		84	40-140	14	25	



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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ50214 - 3546										
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140	15	25	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		104	40-140	12	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		98	40-140	10	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	14	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140	8	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	10	25	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		104	40-140	15	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		97	40-140	13	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	14	25	
Total Petroleum Hydrocarbons	34.6	37.5	mg/kg wet	35.00		99	40-140	13	25	
Triacotane (C30)	2.5	0.2	mg/kg wet	2.500		99	40-140	9	25	

Surrogate: O-Terphenyl 4.93 mg/kg wet 5.000 99 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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 CJ50515 - 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



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8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.79		mg/kg wet	3.333		84	30-130			
Surrogate: 2,4,6-Tribromophenol	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Chlorophenol-d4	4.51		mg/kg wet	5.000		90	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.76		mg/kg wet	5.000		95	30-130			
Surrogate: Nitrobenzene-d5	3.22		mg/kg wet	3.333		97	30-130			
Surrogate: Phenol-d6	4.96		mg/kg wet	5.000		99	30-130			
Surrogate: p-Terphenyl-d14	3.46		mg/kg wet	3.333		104	30-130			

LCS

1,1-Biphenyl	2.91	0.333	mg/kg wet	3.333		87	40-140			
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,4-Dichlorobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2,3,4,6-Tetrachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
2,4,5-Trichlorophenol	3.14	0.333	mg/kg wet	3.333		94	30-130			
2,4,6-Trichlorophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	3.19	0.333	mg/kg wet	3.333		96	30-130			
2,4-Dinitrophenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
2,4-Dinitrotoluene	3.34	0.333	mg/kg wet	3.333		100	40-140			
2,6-Dinitrotoluene	3.00	0.333	mg/kg wet	3.333		90	40-140			
2-Chloronaphthalene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2-Chlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Methylnaphthalene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	3.02	0.333	mg/kg wet	3.333		90	30-130			
2-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
2-Nitrophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140			
3+4-Methylphenol	6.13	0.667	mg/kg wet	6.667		92	30-130			
3-Nitroaniline	3.26	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
4-Bromophenyl-phenylether	2.95	0.333	mg/kg wet	3.333		89	40-140			
4-Chloro-3-Methylphenol	3.05	0.333	mg/kg wet	3.333		92	30-130			
4-Chloroaniline	2.53	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	2.95	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.45	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.37	1.67	mg/kg wet	3.333		101	30-130			
Acenaphthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Acenaphthylene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Acetophenone	3.09	0.667	mg/kg wet	3.333		93	40-140			
Aniline	2.45	0.667	mg/kg wet	3.333		73	40-140			
Anthracene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Benzo(a)anthracene	3.01	0.333	mg/kg wet	3.333		90	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510061

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 CJ50515 - 3546

Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		80	40-140			
bis(2-Chloroethoxy)methane	3.15	0.333	mg/kg wet	3.333		95	40-140			
bis(2-Chloroethyl)ether	3.43	0.333	mg/kg wet	3.333		103	40-140			
bis(2-chloroisopropyl)Ether	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140			
Carbazole	3.21	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140			
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.83	0.333	mg/kg wet	3.333		85	40-140			
Diethylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Di-n-octylphthalate	3.37	0.333	mg/kg wet	3.333		101	40-140			
Fluoranthene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Fluorene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobenzene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Hexachlorobutadiene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorocyclopentadiene	2.52	1.67	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.71	0.333	mg/kg wet	3.333		81	40-140			
Indeno(1,2,3-cd)Pyrene	3.08	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.99	0.333	mg/kg wet	3.333		90	40-140			
Naphthalene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	1.93	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.99	0.333	mg/kg wet	3.333		90	40-140			
N-nitrosodiphenylamine	3.05	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.51	1.67	mg/kg wet	3.333		45	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.42		mg/kg wet	5.000		88	30-130			
Surrogate: 2-Fluorobiphenyl	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.66		mg/kg wet	5.000		93	30-130			
Surrogate: Nitrobenzene-d5	3.07		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.82		mg/kg wet	5.000		96	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510061

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 CJ50515 - 3546

LCS Dup

1,1-Biphenyl	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
1,2,4-Trichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,2-Dichlorobenzene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
1,3-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,4-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		76	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.32	1.67	mg/kg wet	3.333		70	30-130	8	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	6	30	
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130	6	30	
2,4-Dichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	6	30	
2,4-Dimethylphenol	3.00	0.333	mg/kg wet	3.333		90	30-130	6	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	5	30	
2,4-Dinitrotoluene	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
2-Chlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
2-Methylnaphthalene	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130	7	30	
2-Nitroaniline	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
2-Nitrophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	5	30	
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140	0.02	30	
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130	8	30	
3-Nitroaniline	3.10	0.333	mg/kg wet	3.333		93	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
4-Bromophenyl-phenylether	2.83	0.333	mg/kg wet	3.333		85	40-140	4	30	
4-Chloro-3-Methylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130	6	30	
4-Chloroaniline	2.42	0.667	mg/kg wet	3.333		73	40-140	4	30	
4-Chloro-phenyl-phenyl ether	2.74	0.333	mg/kg wet	3.333		82	40-140	7	30	
4-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140	5	30	
4-Nitrophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	11	30	
Acenaphthene	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140	6	30	
Acetophenone	2.87	0.667	mg/kg wet	3.333		86	40-140	7	30	
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140	6	30	
Anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	5	30	
Azobenzene	3.15	0.333	mg/kg wet	3.333		95	40-140	5	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
Benzo(a)pyrene	2.94	0.167	mg/kg wet	3.333		88	40-140	5	30	
Benzo(b)fluoranthene	3.15	0.333	mg/kg wet	3.333		94	40-140	3	30	
Benzo(g,h,i)perylene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	8	30	
Benzoic Acid	2.25	1.67	mg/kg wet	3.333		68	40-140	4	30	
Benzyl Alcohol	2.55	0.333	mg/kg wet	3.333		77	40-140	5	30	
bis(2-Chloroethoxy)methane	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
bis(2-Chloroethyl)ether	3.20	0.333	mg/kg wet	3.333		96	40-140	7	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510061

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 CJ50515 - 3546

bis(2-chloroisopropyl)Ether	2.67	0.333	mg/kg wet	3.333		80	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	8	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	7	30	
Carbazole	3.07	0.333	mg/kg wet	3.333		92	40-140	5	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	6	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	5	30	
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140	7	30	
Dimethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	7	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Di-n-octylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140	7	30	
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	5	30	
Fluorene	2.84	0.333	mg/kg wet	3.333		85	40-140	6	30	
Hexachlorobenzene	2.52	0.167	mg/kg wet	3.333		76	40-140	4	30	
Hexachlorobutadiene	2.46	0.333	mg/kg wet	3.333		74	40-140	6	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	6	30	
Hexachloroethane	2.55	0.333	mg/kg wet	3.333		76	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	6	30	
Isophorone	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Naphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140	6	30	
Nitrobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	6	30	
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	7	30	
N-Nitroso-Di-n-Propylamine	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	4	30	
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
Phenol	2.72	0.333	mg/kg wet	3.333		82	30-130	9	30	
Pyrene	2.82	0.333	mg/kg wet	3.333		85	40-140	6	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		40	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: 2,4,6-Tribromophenol	3.66		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: Nitrobenzene-d5	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.24		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		78	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510061

Notes and Definitions

- Z-10 Soil pH measured in water at 20.5 °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+).
- 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: 1510061

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: 15100061
 Date Project Due: 10/9/15
 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: 10.8"/> | | 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 @ 1730 JC 10/2/15

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: 10/2/15 1534

Reviewed By: [Signature]

Date/Time: 10/2/15 17:20

CHAIN OF CUSTODY

ESS Lab # **1510061**

Turn Time: 5 Days Regulatory State: Rhode Island Reporting Limits: RI DEM RDEC		Is this project for any of the following? <input type="radio"/> CT RCP <input type="radio"/> MA MCP <input type="radio"/> RGP <input type="radio"/> DOD	
Project # 74-15-0002.134 Project Name: Textron Providence		PH: Corrosivity 9045 <input checked="" type="checkbox"/> Data Checker <input checked="" type="checkbox"/> Other (Please Specify →)	
Address: 500 Harrison Avenue, Suite 4R Zip Code: 02118 PO #:		Electronic Deliverables: <input checked="" type="checkbox"/> VOC <input checked="" type="checkbox"/> VOC Low Level <input checked="" type="checkbox"/> SVOC <input checked="" type="checkbox"/> RCRA 8 <input checked="" type="checkbox"/> TPH	
City: Boston State: MA Telephone Number: (857) 246-6812 FAX Number:		Sample Matrix: Soil Material S&S: Loam 4	
Company Name: Charter Environmental Contact Person: Paul J. Leofanti, Jr.		Email Address: pleofanti@charter.us Sample ID:	
ESS Lab ID	Collection Date	Collection Time	Sample Type
1	10/2/15	11:30	Grab
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial 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			
Number of Containers: 1 1 1 2 1			

Laboratory Use Only Cooler Present: <u>Yes</u> Drop Off Seals Intact: <u>No</u> Pickup Cooler Temperature: <u>0.8°C @ 10/2/15</u> Technician Hours → Received by: (Signature, Date & Time) <u>[Signature] 10/2/15 14:50</u> Requisitioned by: (Signature, Date & Time) <u>[Signature] 10/2/15</u>		Sampled by: G. Gilbert-Thielsch Comments: Please specify "Other" preservative and containers types in this space Please CC: mpolsky@thielsch.com Requisitioned by: (Signature, Date & Time) <u>[Signature] 10/2/15 14:50</u> Requisitioned by: (Signature, Date & Time)	
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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: 1507225

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 4:54 pm, Jul 16, 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: 1507225

SAMPLE RECEIPT

The following samples were received on July 09, 2015 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

Low Level VOA vials were frozen by ESS Laboratory on July 9, 2015 at 20:25.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1507225-01	L1 Material S&S Loam	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: 1507225

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CG51314-BS1 **Blank Spike recovery is below lower control limit (B-).**

Tetrahydrofuran (66% @ 70-130%)

CYG0130-CCV1 **Continuing Calibration recovery is below lower control limit (C-).**

Tetrahydrofuran (66% @ 70-130%)

8270D Semi-Volatile Organic Compounds

CYG0116-CCV1 **Continuing Calibration recovery is above upper control limit (C+).**

Di-n-butylphthalate (121% @ 80-120%)

CYG0116-CCV1 **Initial Calibration Verification recovery is below lower control limit (ICV-).**

Hexachlorocyclopentadiene

CYG0123-CCV1 **Continuing Calibration recovery is above upper control limit (C+).**

Aniline (122% @ 80-120%), Di-n-butylphthalate (121% @ 80-120%)

CYG0123-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

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

ESS Laboratory Work Order: 1507225

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: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
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 (2.53)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913
Barium	31.9 (2.53)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913
Cadmium	ND (0.51)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913
Chromium	5.84 (1.01)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913
Lead	14.3 (5.06)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913
Mercury	0.039 (0.035)		7471B		1	BJV	07/10/15 14:12	0.62	40	CG50951
Selenium	ND (5.06)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913
Silver	ND (0.51)		6010C		1	KJK	07/10/15 13:16	2.19	100	CG50913



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 7.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

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 (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,1,1-Trichloroethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,1,2,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,1,2-Trichloroethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,1-Dichloroethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,1-Dichloroethene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,1-Dichloropropene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2,3-Trichlorobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2,3-Trichloropropane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2,4-Trichlorobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2,4-Trimethylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2-Dibromo-3-Chloropropane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2-Dibromoethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2-Dichlorobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2-Dichloroethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,2-Dichloropropane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,3,5-Trimethylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,3-Dichlorobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,3-Dichloropropane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,4-Dichlorobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1,4-Dioxane	ND (0.0759)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
1-Chlorohexane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
2,2-Dichloropropane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
2-Butanone	ND (0.0380)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
2-Chlorotoluene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
2-Hexanone	ND (0.0380)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
4-Chlorotoluene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
4-Isopropyltoluene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
4-Methyl-2-Pentanone	ND (0.0380)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Acetone	ND (0.0380)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Benzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Bromobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 7.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

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 (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Bromodichloromethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Bromoform	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Bromomethane	ND (0.0076)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Carbon Disulfide	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Carbon Tetrachloride	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Chlorobenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Chloroethane	ND (0.0076)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Chloroform	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Chloromethane	ND (0.0076)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
cis-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
cis-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Dibromochloromethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Dibromomethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Dichlorodifluoromethane	ND (0.0076)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Diethyl Ether	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Di-isopropyl ether	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Ethyl tertiary-butyl ether	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Ethylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Hexachlorobutadiene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Isopropylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Methyl tert-Butyl Ether	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Methylene Chloride	ND (0.0190)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Naphthalene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
n-Butylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
n-Propylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
sec-Butylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Styrene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
tert-Butylbenzene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Tertiary-amyl methyl ether	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Tetrachloroethene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Tetrahydrofuran	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 7.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

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 (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
trans-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
trans-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Trichloroethene	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Trichlorofluoromethane	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Vinyl Acetate	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Vinyl Chloride	ND (0.0076)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Xylene O	ND (0.0038)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Xylene P,M	ND (0.0076)		8260B Low		1	07/13/15 13:50	CYG0130	CG51314
Xylenes (Total)	ND (0.0076)		8260B Low		1	07/13/15 13:50		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>83 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>74 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>81 %</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: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 7/10/15 13:44

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	82.3 (43.1)		8100M		1	07/11/15 1:09	CYG0120	CG51027
		<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: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 7/10/15 13:44

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 (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
1,2,4-Trichlorobenzene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
1,2-Dichlorobenzene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
1,3-Dichlorobenzene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
1,4-Dichlorobenzene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,3,4,6-Tetrachlorophenol	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,4,5-Trichlorophenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,4,6-Trichlorophenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,4-Dichlorophenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,4-Dimethylphenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,4-Dinitrophenol	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,4-Dinitrotoluene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2,6-Dinitrotoluene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2-Chloronaphthalene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2-Chlorophenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2-Methylnaphthalene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2-Methylphenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2-Nitroaniline	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
2-Nitrophenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
3,3'-Dichlorobenzidine	ND (0.755)		8270D		1	07/11/15 4:07	CYG0123	CG51029
3+4-Methylphenol	ND (0.755)		8270D		1	07/11/15 4:07	CYG0123	CG51029
3-Nitroaniline	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4,6-Dinitro-2-Methylphenol	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4-Bromophenyl-phenylether	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4-Chloro-3-Methylphenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4-Chloroaniline	ND (0.755)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4-Chloro-phenyl-phenyl ether	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4-Nitroaniline	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
4-Nitrophenol	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Acenaphthene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Acenaphthylene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Acetophenone	ND (0.755)		8270D		1	07/11/15 4:07	CYG0123	CG51029



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 7/10/15 13:44

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 (0.755)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Anthracene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Azobenzene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzo(a)anthracene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzo(a)pyrene	ND (0.189)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzo(b)fluoranthene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzo(g,h,i)perylene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzo(k)fluoranthene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzoic Acid	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Benzyl Alcohol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
bis(2-Chloroethoxy)methane	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
bis(2-Chloroethyl)ether	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
bis(2-chloroisopropyl)Ether	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
bis(2-Ethylhexyl)phthalate	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Butylbenzylphthalate	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Carbazole	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Chrysene	ND (0.189)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Dibenzo(a,h)Anthracene	ND (0.189)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Dibenzofuran	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Diethylphthalate	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Dimethylphthalate	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Di-n-butylphthalate	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Di-n-octylphthalate	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Fluoranthene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Fluorene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Hexachlorobenzene	ND (0.189)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Hexachlorobutadiene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Hexachlorocyclopentadiene	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Hexachloroethane	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Indeno(1,2,3-cd)Pyrene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Isophorone	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Naphthalene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 7/10/15 13:44

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 (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
N-Nitrosodimethylamine	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
N-Nitroso-Di-n-Propylamine	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
N-nitrosodiphenylamine	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Pentachlorophenol	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Phenanthrene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Phenol	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Pyrene	ND (0.377)		8270D		1	07/11/15 4:07	CYG0123	CG51029
Pyridine	ND (1.89)		8270D		1	07/11/15 4:07	CYG0123	CG51029

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>90 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>112 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>84 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>89 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>82 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>83 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>81 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>88 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: L1 Material S&S Loam
Date Sampled: 07/09/15 15:30
Percent Solids: 90

ESS Laboratory Work Order: 1507225
ESS Laboratory Sample ID: 1507225-01
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)	5.18 (N/A)		9045		1	MJV	07/10/15 12:40	S.U.	CG51034
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.2 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

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 CG50913 - 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	118	9.62	mg/kg wet	133.0	89	80-120
Barium	217	9.62	mg/kg wet	229.0	95	80-120
Cadmium	106	1.92	mg/kg wet	123.0	86	80-120
Chromium	57.0	3.85	mg/kg wet	63.20	90	80-120
Lead	97.7	19.2	mg/kg wet	108.0	90	80-120
Selenium	66.3	19.2	mg/kg wet	81.40	81	80-120
Silver	70.0	1.92	mg/kg wet	74.80	94	80-120

LCS Dup

Arsenic	118	9.09	mg/kg wet	133.0	89	80-120	0.2	20
Barium	202	9.09	mg/kg wet	229.0	88	80-120	7	20
Cadmium	107	1.82	mg/kg wet	123.0	87	80-120	1	20
Chromium	57.2	3.64	mg/kg wet	63.20	91	80-120	0.4	20
Lead	97.5	18.2	mg/kg wet	108.0	90	80-120	0.2	20
Selenium	68.3	18.2	mg/kg wet	81.40	84	80-120	3	20
Silver	70.6	1.82	mg/kg wet	74.80	94	80-120	0.8	20

Batch CG50951 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	29.3	3.67	mg/kg wet	24.90	118	80-120
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LCS Dup

Mercury	29.5	3.25	mg/kg wet	24.90	118	80-120	0.5	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CG51314 - 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: 1507225

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 CG51314 - 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: 1507225

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 CG51314 - 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	0.0457		mg/kg wet	0.05000		91	70-130			
Surrogate: 4-Bromofluorobenzene	0.0403		mg/kg wet	0.05000		81	70-130			
Surrogate: Dibromofluoromethane	0.0456		mg/kg wet	0.05000		91	70-130			
Surrogate: Toluene-d8	0.0427		mg/kg wet	0.05000		85	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0412	0.0050	mg/kg wet	0.05000		82	70-130			
1,1,2,2-Tetrachloroethane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,1,2-Trichloroethane	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
1,1-Dichloroethane	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
1,1-Dichloroethene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
1,1-Dichloropropene	0.0398	0.0050	mg/kg wet	0.05000		80	70-130			
1,2,3-Trichlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichloropropane	0.0405	0.0050	mg/kg wet	0.05000		81	70-130			
1,2,4-Trichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,4-Trimethylbenzene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
1,2-Dibromo-3-Chloropropane	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromoethane	0.0407	0.0050	mg/kg wet	0.05000		81	70-130			
1,2-Dichlorobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
1,2-Dichloropropane	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
1,3,5-Trimethylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,3-Dichloropropane	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

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 CG51314 - 5035

1,4-Dichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,4-Dioxane	0.781	0.100	mg/kg wet	1.000		78	70-130			
1-Chlorohexane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
2,2-Dichloropropane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
2-Butanone	0.203	0.0500	mg/kg wet	0.2500		81	70-130			
2-Chlorotoluene	0.0427	0.0050	mg/kg wet	0.05000		85	70-130			
2-Hexanone	0.182	0.0500	mg/kg wet	0.2500		73	70-130			
4-Chlorotoluene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
4-Isopropyltoluene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
4-Methyl-2-Pentanone	0.188	0.0500	mg/kg wet	0.2500		75	70-130			
Acetone	0.233	0.0500	mg/kg wet	0.2500		93	70-130			
Benzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Bromobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Bromodichloromethane	0.0399	0.0050	mg/kg wet	0.05000		80	70-130			
Bromoform	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Bromomethane	0.0435	0.0100	mg/kg wet	0.05000		87	70-130			
Carbon Disulfide	0.0406	0.0050	mg/kg wet	0.05000		81	70-130			
Carbon Tetrachloride	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Chlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Chloroethane	0.0349	0.0100	mg/kg wet	0.05000		70	70-130			
Chloroform	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
Chloromethane	0.0387	0.0100	mg/kg wet	0.05000		77	70-130			
cis-1,2-Dichloroethene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
cis-1,3-Dichloropropene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Dibromochloromethane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
Dibromomethane	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
Dichlorodifluoromethane	0.0403	0.0100	mg/kg wet	0.05000		81	70-130			
Diethyl Ether	0.0377	0.0050	mg/kg wet	0.05000		75	70-130			
Di-isopropyl ether	0.0384	0.0050	mg/kg wet	0.05000		77	70-130			
Ethyl tertiary-butyl ether	0.0372	0.0050	mg/kg wet	0.05000		74	70-130			
Ethylbenzene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Hexachlorobutadiene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Isopropylbenzene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
Methyl tert-Butyl Ether	0.0378	0.0050	mg/kg wet	0.05000		76	70-130			
Methylene Chloride	0.0429	0.0250	mg/kg wet	0.05000		86	70-130			
Naphthalene	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
n-Butylbenzene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Propylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
sec-Butylbenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Styrene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
tert-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Tertiary-amyl methyl ether	0.0405	0.0050	mg/kg wet	0.05000		81	70-130			
Tetrachloroethene	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
Tetrahydrofuran	0.0328	0.0050	mg/kg wet	0.05000		66	70-130			

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CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

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 CG51314 - 5035

Toluene	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
trans-1,2-Dichloroethene	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
trans-1,3-Dichloropropene	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
Trichloroethene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Trichlorofluoromethane	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
Vinyl Acetate	0.0405	0.0050	mg/kg wet	0.05000		81	70-130			
Vinyl Chloride	0.0404	0.0100	mg/kg wet	0.05000		81	70-130			
Xylene O	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
Xylene P,M	0.0859	0.0100	mg/kg wet	0.1000		86	70-130			
Xylenes (Total)	0.127	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0471		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Dibromofluoromethane	0.0516		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0467		mg/kg wet	0.05000		93	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,1,1-Trichloroethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
1,1,2-Trichloroethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
1,1-Dichloroethane	0.0423	0.0050	mg/kg wet	0.05000		85	70-130	5	25	
1,1-Dichloroethene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
1,1-Dichloropropene	0.0415	0.0050	mg/kg wet	0.05000		83	70-130	4	25	
1,2,3-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.8	25	
1,2,3-Trichloropropane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	1	25	
1,2,4-Trichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,4-Trimethylbenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0408	0.0050	mg/kg wet	0.05000		82	70-130	4	25	
1,2-Dibromoethane	0.0416	0.0050	mg/kg wet	0.05000		83	70-130	2	25	
1,2-Dichlorobenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	1	25	
1,2-Dichloroethane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
1,2-Dichloropropane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	4	25	
1,3,5-Trimethylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,3-Dichlorobenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
1,3-Dichloropropane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
1,4-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,4-Dioxane	0.786	0.100	mg/kg wet	1.000		79	70-130	0.6	20	
1-Chlorohexane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	3	25	
2,2-Dichloropropane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
2-Butanone	0.208	0.0500	mg/kg wet	0.2500		83	70-130	3	25	
2-Chlorotoluene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
2-Hexanone	0.179	0.0500	mg/kg wet	0.2500		72	70-130	2	25	
4-Chlorotoluene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
4-Isopropyltoluene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
4-Methyl-2-Pentanone	0.187	0.0500	mg/kg wet	0.2500		75	70-130	0.3	25	
Acetone	0.229	0.0500	mg/kg wet	0.2500		92	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CG51314 - 5035

Benzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Bromobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Bromochloromethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Bromodichloromethane	0.0410	0.0050	mg/kg wet	0.05000		82	70-130	3	25	
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	2	25	
Bromomethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130	3	25	
Carbon Disulfide	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	4	25	
Carbon Tetrachloride	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Chloroethane	0.0359	0.0100	mg/kg wet	0.05000		72	70-130	3	25	
Chloroform	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloromethane	0.0410	0.0100	mg/kg wet	0.05000		82	70-130	6	25	
cis-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
cis-1,3-Dichloropropene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Dibromochloromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
Dibromomethane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
Dichlorodifluoromethane	0.0417	0.0100	mg/kg wet	0.05000		83	70-130	3	25	
Diethyl Ether	0.0392	0.0050	mg/kg wet	0.05000		78	70-130	4	25	
Di-isopropyl ether	0.0412	0.0050	mg/kg wet	0.05000		82	70-130	7	25	
Ethyl tertiary-butyl ether	0.0394	0.0050	mg/kg wet	0.05000		79	70-130	6	25	
Ethylbenzene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130	3	25	
Hexachlorobutadiene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.7	25	
Isopropylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Methyl tert-Butyl Ether	0.0401	0.0050	mg/kg wet	0.05000		80	70-130	6	25	
Methylene Chloride	0.0423	0.0250	mg/kg wet	0.05000		85	70-130	2	25	
Naphthalene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	0.6	25	
n-Butylbenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
sec-Butylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	3	25	
Styrene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
tert-Butylbenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
Tertiary-amyl methyl ether	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	5	25	
Tetrachloroethene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	0.9	25	
Tetrahydrofuran	0.0373	0.0050	mg/kg wet	0.05000		75	70-130	13	25	
Toluene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	3	25	
trans-1,2-Dichloroethene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	4	25	
trans-1,3-Dichloropropene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	7	25	
Trichloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
Trichlorofluoromethane	0.0416	0.0050	mg/kg wet	0.05000		83	70-130	4	25	
Vinyl Acetate	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	7	25	
Vinyl Chloride	0.0421	0.0100	mg/kg wet	0.05000		84	70-130	4	25	
Xylene O	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	2	25	
Xylene P,M	0.0880	0.0100	mg/kg wet	0.1000		88	70-130	2	25	
Xylenes (Total)	0.130	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0489		mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1507225

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 CG51314 - 5035

Surrogate: 4-Bromofluorobenzene	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: Dibromofluoromethane	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0471		mg/kg wet	0.05000		94	70-130			

8100M Total Petroleum Hydrocarbons

Batch CG51027 - 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	4.51		mg/kg wet	5.000		90	40-140			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		78	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		82	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	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		88	40-140			
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		68	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Total Petroleum Hydrocarbons	29.8	37.5	mg/kg wet	35.00		85	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		94	40-140			

Surrogate: O-Terphenyl	4.63		mg/kg wet	5.000		93	40-140			
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LCS Dup

Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140	2	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		94	40-140	3	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		84	40-140	3	25	



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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 CG51027 - 3546

Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		93	40-140	3	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140	3	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		91	40-140	4	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	3	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	2	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		97	40-140	3	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		91	40-140	4	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		90	40-140	3	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	4	25	
Total Petroleum Hydrocarbons	30.7	37.5	mg/kg wet	35.00		88	40-140	3	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		97	40-140	3	25	

Surrogate: O-Terphenyl 4.73 mg/kg wet 5.000 95 40-140

8270D Semi-Volatile Organic Compounds

Batch CG51029 - 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 CG51029 - 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



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8270D Semi-Volatile Organic Compounds

Batch CG51029 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	3.00		mg/kg wet	6.667		45	30-130			
Surrogate: 2,4,6-Tribromophenol	5.26		mg/kg wet	10.00		53	30-130			
Surrogate: 2-Chlorophenol-d4	4.25		mg/kg wet	10.00		43	30-130			
Surrogate: 2-Fluorobiphenyl	2.99		mg/kg wet	6.667		45	30-130			
Surrogate: 2-Fluorophenol	4.26		mg/kg wet	10.00		43	30-130			
Surrogate: Nitrobenzene-d5	2.79		mg/kg wet	6.667		42	30-130			
Surrogate: Phenol-d6	4.19		mg/kg wet	10.00		42	30-130			
Surrogate: p-Terphenyl-d14	2.98		mg/kg wet	6.667		45	30-130			

LCS

1,1-Biphenyl	2.86	0.333	mg/kg wet	3.333		86	40-140			
1,2,4-Trichlorobenzene	2.81	0.333	mg/kg wet	3.333		84	40-140			
1,2-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.75	0.333	mg/kg wet	3.333		82	40-140			
1,4-Dichlorobenzene	2.77	0.333	mg/kg wet	3.333		83	40-140			
2,3,4,6-Tetrachlorophenol	2.98	1.67	mg/kg wet	3.333		89	30-130			
2,4,5-Trichlorophenol	2.95	0.333	mg/kg wet	3.333		89	30-130			
2,4,6-Trichlorophenol	3.12	0.333	mg/kg wet	3.333		94	30-130			
2,4-Dichlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2,4-Dimethylphenol	2.96	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dinitrophenol	2.63	1.67	mg/kg wet	3.333		79	30-130			
2,4-Dinitrotoluene	3.14	0.333	mg/kg wet	3.333		94	40-140			
2,6-Dinitrotoluene	3.22	0.333	mg/kg wet	3.333		97	40-140			
2-Chloronaphthalene	2.46	0.333	mg/kg wet	3.333		74	40-140			
2-Chlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2-Methylnaphthalene	2.69	0.333	mg/kg wet	3.333		81	40-140			
2-Methylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Nitroaniline	2.94	0.333	mg/kg wet	3.333		88	40-140			
2-Nitrophenol	3.03	0.333	mg/kg wet	3.333		91	30-130			
3,3'-Dichlorobenzidine	2.85	0.667	mg/kg wet	3.333		85	40-140			
3+4-Methylphenol	5.82	0.667	mg/kg wet	6.667		87	30-130			
3-Nitroaniline	3.05	0.333	mg/kg wet	3.333		92	40-140			
4,6-Dinitro-2-Methylphenol	3.12	1.67	mg/kg wet	3.333		94	30-130			
4-Bromophenyl-phenylether	3.25	0.333	mg/kg wet	3.333		98	40-140			
4-Chloro-3-Methylphenol	2.96	0.333	mg/kg wet	3.333		89	30-130			
4-Chloroaniline	2.54	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	2.74	0.333	mg/kg wet	3.333		82	40-140			
4-Nitroaniline	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Nitrophenol	3.35	1.67	mg/kg wet	3.333		101	30-130			
Acenaphthene	2.85	0.333	mg/kg wet	3.333		85	40-140			
Acenaphthylene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Acetophenone	2.84	0.667	mg/kg wet	3.333		85	40-140			
Aniline	2.32	0.667	mg/kg wet	3.333		70	40-140			
Anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	3.02	0.333	mg/kg wet	3.333		91	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.
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1507225

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 CG51029 - 3546

Benzo(a)pyrene	3.20	0.167	mg/kg wet	3.333		96	40-140			
Benzo(b)fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Benzo(g,h,i)perylene	3.35	0.333	mg/kg wet	3.333		100	40-140			
Benzo(k)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzoic Acid	3.08	1.67	mg/kg wet	3.333		92	40-140			
Benzyl Alcohol	3.48	0.333	mg/kg wet	3.333		104	40-140			
bis(2-Chloroethoxy)methane	2.90	0.333	mg/kg wet	3.333		87	40-140			
bis(2-Chloroethyl)ether	2.81	0.333	mg/kg wet	3.333		84	40-140			
bis(2-chloroisopropyl)Ether	2.78	0.333	mg/kg wet	3.333		83	40-140			
bis(2-Ethylhexyl)phthalate	3.39	0.333	mg/kg wet	3.333		102	40-140			
Butylbenzylphthalate	3.81	0.333	mg/kg wet	3.333		114	40-140			
Carbazole	3.21	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	3.15	0.167	mg/kg wet	3.333		94	40-140			
Dibenzo(a,h)Anthracene	3.47	0.167	mg/kg wet	3.333		104	40-140			
Dibenzofuran	2.79	0.333	mg/kg wet	3.333		84	40-140			
Diethylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140			
Dimethylphthalate	3.12	0.333	mg/kg wet	3.333		94	40-140			
Di-n-butylphthalate	3.43	0.333	mg/kg wet	3.333		103	40-140			
Di-n-octylphthalate	3.44	0.333	mg/kg wet	3.333		103	40-140			
Fluoranthene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Fluorene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Hexachlorobenzene	2.97	0.167	mg/kg wet	3.333		89	40-140			
Hexachlorobutadiene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorocyclopentadiene	3.11	1.67	mg/kg wet	3.333		93	40-140			
Hexachloroethane	2.55	0.333	mg/kg wet	3.333		76	40-140			
Indeno(1,2,3-cd)Pyrene	3.55	0.333	mg/kg wet	3.333		106	40-140			
Isophorone	2.91	0.333	mg/kg wet	3.333		87	40-140			
Naphthalene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Nitrobenzene	2.79	0.333	mg/kg wet	3.333		84	40-140			
N-Nitrosodimethylamine	2.94	0.333	mg/kg wet	3.333		88	40-140			
N-Nitroso-Di-n-Propylamine	2.70	0.333	mg/kg wet	3.333		81	40-140			
N-nitrosodiphenylamine	2.95	0.333	mg/kg wet	3.333		89	40-140			
Pentachlorophenol	3.41	1.67	mg/kg wet	3.333		102	30-130			
Phenanthrene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Phenol	2.91	0.333	mg/kg wet	3.333		87	30-130			
Pyrene	3.13	0.333	mg/kg wet	3.333		94	40-140			
Pyridine	2.78	1.67	mg/kg wet	3.333		83	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.98		mg/kg wet	6.667		45	30-130			
Surrogate: 2,4,6-Tribromophenol	5.11		mg/kg wet	10.00		51	30-130			
Surrogate: 2-Chlorophenol-d4	4.36		mg/kg wet	10.00		44	30-130			
Surrogate: 2-Fluorobiphenyl	2.94		mg/kg wet	6.667		44	30-130			
Surrogate: 2-Fluorophenol	4.69		mg/kg wet	10.00		47	30-130			
Surrogate: Nitrobenzene-d5	3.01		mg/kg wet	6.667		45	30-130			
Surrogate: Phenol-d6	4.84		mg/kg wet	10.00		48	30-130			
Surrogate: p-Terphenyl-d14	3.47		mg/kg wet	6.667		52	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

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 CG51029 - 3546

LCS Dup

1,1-Biphenyl	3.09	0.333	mg/kg wet	3.333		93	40-140	8	30	
1,2,4-Trichlorobenzene	3.02	0.333	mg/kg wet	3.333		91	40-140	7	30	
1,2-Dichlorobenzene	2.96	0.333	mg/kg wet	3.333		89	40-140	8	30	
1,3-Dichlorobenzene	3.02	0.333	mg/kg wet	3.333		91	40-140	10	30	
1,4-Dichlorobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140	9	30	
2,3,4,6-Tetrachlorophenol	3.16	1.67	mg/kg wet	3.333		95	30-130	6	30	
2,4,5-Trichlorophenol	3.18	0.333	mg/kg wet	3.333		95	30-130	7	30	
2,4,6-Trichlorophenol	3.37	0.333	mg/kg wet	3.333		101	30-130	8	30	
2,4-Dichlorophenol	3.07	0.333	mg/kg wet	3.333		92	30-130	6	30	
2,4-Dimethylphenol	3.16	0.333	mg/kg wet	3.333		95	30-130	6	30	
2,4-Dinitrophenol	2.82	1.67	mg/kg wet	3.333		85	30-130	7	30	
2,4-Dinitrotoluene	3.33	0.333	mg/kg wet	3.333		100	40-140	6	30	
2,6-Dinitrotoluene	3.44	0.333	mg/kg wet	3.333		103	40-140	7	30	
2-Chloronaphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140	8	30	
2-Chlorophenol	2.82	0.333	mg/kg wet	3.333		85	30-130	7	30	
2-Methylnaphthalene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
2-Methylphenol	3.10	0.333	mg/kg wet	3.333		93	30-130	7	30	
2-Nitroaniline	3.19	0.333	mg/kg wet	3.333		96	40-140	8	30	
2-Nitrophenol	3.27	0.333	mg/kg wet	3.333		98	30-130	8	30	
3,3'-Dichlorobenzidine	3.07	0.667	mg/kg wet	3.333		92	40-140	7	30	
3+4-Methylphenol	5.97	0.667	mg/kg wet	6.667		89	30-130	2	30	
3-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140	7	30	
4,6-Dinitro-2-Methylphenol	3.35	1.67	mg/kg wet	3.333		101	30-130	7	30	
4-Bromophenyl-phenylether	3.42	0.333	mg/kg wet	3.333		103	40-140	5	30	
4-Chloro-3-Methylphenol	3.11	0.333	mg/kg wet	3.333		93	30-130	5	30	
4-Chloroaniline	2.67	0.667	mg/kg wet	3.333		80	40-140	5	30	
4-Chloro-phenyl-phenyl ether	2.93	0.333	mg/kg wet	3.333		88	40-140	7	30	
4-Nitroaniline	3.11	0.333	mg/kg wet	3.333		93	40-140	6	30	
4-Nitrophenol	3.53	1.67	mg/kg wet	3.333		106	30-130	5	30	
Acenaphthene	3.08	0.333	mg/kg wet	3.333		92	40-140	8	30	
Acenaphthylene	3.20	0.333	mg/kg wet	3.333		96	40-140	7	30	
Acetophenone	3.05	0.667	mg/kg wet	3.333		91	40-140	7	30	
Aniline	2.52	0.667	mg/kg wet	3.333		76	40-140	8	30	
Anthracene	3.17	0.333	mg/kg wet	3.333		95	40-140	6	30	
Azobenzene	3.25	0.333	mg/kg wet	3.333		97	40-140	7	30	
Benzo(a)anthracene	3.28	0.333	mg/kg wet	3.333		98	40-140	6	30	
Benzo(a)pyrene	3.42	0.167	mg/kg wet	3.333		103	40-140	6	30	
Benzo(b)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140	5	30	
Benzo(g,h,i)perylene	3.57	0.333	mg/kg wet	3.333		107	40-140	6	30	
Benzo(k)fluoranthene	3.17	0.333	mg/kg wet	3.333		95	40-140	8	30	
Benzoic Acid	3.27	1.67	mg/kg wet	3.333		98	40-140	6	30	
Benzyl Alcohol	3.09	0.333	mg/kg wet	3.333		93	40-140	12	30	
bis(2-Chloroethoxy)methane	3.10	0.333	mg/kg wet	3.333		93	40-140	7	30	
bis(2-Chloroethyl)ether	3.03	0.333	mg/kg wet	3.333		91	40-140	8	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CG51029 - 3546										
bis(2-chloroisopropyl)Ether	3.03	0.333	mg/kg wet	3.333		91	40-140	9	30	
bis(2-Ethylhexyl)phthalate	3.62	0.333	mg/kg wet	3.333		109	40-140	6	30	
Butylbenzylphthalate	4.08	0.333	mg/kg wet	3.333		122	40-140	7	30	
Carbazole	3.42	0.333	mg/kg wet	3.333		102	40-140	6	30	
Chrysene	3.36	0.167	mg/kg wet	3.333		101	40-140	6	30	
Dibenzo(a,h)Anthracene	3.71	0.167	mg/kg wet	3.333		111	40-140	7	30	
Dibenzofuran	2.99	0.333	mg/kg wet	3.333		90	40-140	7	30	
Diethylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	6	30	
Dimethylphthalate	3.34	0.333	mg/kg wet	3.333		100	40-140	7	30	
Di-n-butylphthalate	3.63	0.333	mg/kg wet	3.333		109	40-140	6	30	
Di-n-octylphthalate	3.69	0.333	mg/kg wet	3.333		111	40-140	7	30	
Fluoranthene	3.52	0.333	mg/kg wet	3.333		106	40-140	6	30	
Fluorene	3.01	0.333	mg/kg wet	3.333		90	40-140	6	30	
Hexachlorobenzene	3.18	0.167	mg/kg wet	3.333		95	40-140	7	30	
Hexachlorobutadiene	2.90	0.333	mg/kg wet	3.333		87	40-140	8	30	
Hexachlorocyclopentadiene	3.40	1.67	mg/kg wet	3.333		102	40-140	9	30	
Hexachloroethane	2.83	0.333	mg/kg wet	3.333		85	40-140	10	30	
Indeno(1,2,3-cd)Pyrene	3.80	0.333	mg/kg wet	3.333		114	40-140	7	30	
Isophorone	3.08	0.333	mg/kg wet	3.333		92	40-140	6	30	
Naphthalene	3.05	0.333	mg/kg wet	3.333		92	40-140	6	30	
Nitrobenzene	2.99	0.333	mg/kg wet	3.333		90	40-140	7	30	
N-Nitrosodimethylamine	3.30	0.333	mg/kg wet	3.333		99	40-140	12	30	
N-Nitroso-Di-n-Propylamine	2.83	0.333	mg/kg wet	3.333		85	40-140	5	30	
N-nitrosodiphenylamine	3.16	0.333	mg/kg wet	3.333		95	40-140	7	30	
Pentachlorophenol	3.62	1.67	mg/kg wet	3.333		109	30-130	6	30	
Phenanthrene	3.16	0.333	mg/kg wet	3.333		95	40-140	6	30	
Phenol	3.32	0.333	mg/kg wet	3.333		100	30-130	13	30	
Pyrene	3.31	0.333	mg/kg wet	3.333		99	40-140	6	30	
Pyridine	3.12	1.67	mg/kg wet	3.333		94	40-140	12	30	
Surrogate: 1,2-Dichlorobenzene-d4	3.22		mg/kg wet	6.667		48	30-130			
Surrogate: 2,4,6-Tribromophenol	5.22		mg/kg wet	10.00		52	30-130			
Surrogate: 2-Chlorophenol-d4	4.45		mg/kg wet	10.00		44	30-130			
Surrogate: 2-Fluorobiphenyl	3.04		mg/kg wet	6.667		46	30-130			
Surrogate: 2-Fluorophenol	4.87		mg/kg wet	10.00		49	30-130			
Surrogate: Nitrobenzene-d5	3.09		mg/kg wet	6.667		46	30-130			
Surrogate: Phenol-d6	4.97		mg/kg wet	10.00		50	30-130			
Surrogate: p-Terphenyl-d14	3.52		mg/kg wet	6.667		53	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1507225

Notes and Definitions

- Z-10 Soil pH measured in water at 23.2 °C.
- U Analyte included in the analysis, but not detected
- 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-).
- 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: 1507225

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: 15070225
 Date Project Due: 7/16/15
 Days For Project: 5 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? * No
 Cooler Temp: 26.2
 Iced With: None
- 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? * No
- 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.

6L VIALS frozen at 2025 JL 7/9/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	* No	40 ml - VOA	1	MeOH
1	* No	40 ml - VOA	2	other
1	* No	8 oz Soil Jar	1	NP

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

Date/Time: 7/9/15 2007
 Date/Time: 7/9/15 2025

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 # **1507225**

Turn Time **5** Days

Regulatory State **Rhode Island**

Reporting Limits **RI DEM RDEC**

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

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

Company Name Charter Environmental	Project # 74-15-0002.134	Project Name Textron Providence	Analysis		PH: Corrosivity 9045		VOC		VOC Low Level		SVOC		RCRA 8		TPH						
Contact Person Paul J. Leofanti, Jr.	Address 500 Harrison Avenue, Suite 4R	Zip Code 02118	PO #	Email Address pleofanti@charter.us		Sample ID		L1 Material S&S Loam													
City Boston	State MA	FAX Number	Sample Type	Sample Matrix	Sample ID																
Telephone Number (857) 246-6812	Collection Date 7/9	Collection Time 1530	Grab	Soil																	
ESS Lab ID 01																					
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-ZnAcAc		9-NH4Cl		10-Other*			
Number of Containers:		1		1		1		2		1		1		1		1					

Laboratory Use Only

Cooler Present: NO Drop Off

Seals Intact: NO Pickup

Cooler Temperature: 26.2°C Technician Hours → 7-9-15 17:50

Received by: (Signature, Date & Time) George Hobbs 7-9-15 17:50

Relinquished by: (Signature, Date & Time) Paul J. Leofanti, Jr. 7/9/15 17:50

Sampled by: Charter Environmental

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

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: 1508737

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

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 5:03 pm, Sep 01, 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: 1508737

SAMPLE RECEIPT

The following samples were received on August 25, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on August 25, 2015 at 18:21.

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

Lab Number	Sample Name	Matrix	Analysis
1508737-01	Material S+S - Sandy Fill - A	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045
1508737-02	Material S+S - Sandy Fill - B	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045
1508737-03	Material S+S - Sandy Fill - C	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045
1508737-04	Material S+S - Sandy Fill - D	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045
1508737-05	Material S+S - Sandy Fill - E	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045
1508737-06	Material S+S - Top Soil - A	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D
1508737-07	Material S+S - Top Soil - B	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D
1508737-08	Material S+S - Top Soil - C	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D
1508737-09	Material S+S - Top Soil - D	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1508737-06 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (47% @ 50-200%)
- 1508737-07 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (34% @ 50-200%)
- 1508737-08 **Internal Standard(s) outside of criteria (I).**
Chlorobenzene-d5 (48% @ 50-200%)
- 1508737-08 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (27% @ 50-200%)
- 1508737-08 **Surrogate recovery(ies) above upper control limit (S+).**
1,2-Dichloroethane-d4 (132% @ 70-130%)
- CH52614-BLK1 **Internal Standard(s) outside of criteria (I).**
1,4-Dichlorobenzene-D4 (45% @ 50-200%)
- CH52614-BS1 **Blank Spike recovery is above upper control limit (B+).**
2,2-Dichloropropane (135% @ 70-130%), Vinyl Acetate (147% @ 70-130%)
- CH52614-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (133% @ 70-130%)
- CH52721-BS1 **Blank Spike recovery is above upper control limit (B+).**
Chloroethane (131% @ 70-130%)
- CH52721-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Chloromethane (64% @ 70-130%), Vinyl Chloride (67% @ 70-130%)
- CH52721-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Acetone (30% @ 25%), Diethyl Ether (27% @ 25%), Ethyl tertiary-butyl ether (26% @ 25%), Methyl tert-Butyl Ether (30% @ 25%), Vinyl Acetate (28% @ 25%)
- CYH0359-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Chloroethane (48% @ 30%)
- CYH0359-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Vinyl Chloride (21% @ 20%)

8270D Semi-Volatile Organic Compounds

- CH52513-BS1 **Blank Spike recovery is below lower control limit (B-).**
Benzoic Acid (35% @ 40-140%)
- CYH0326-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (78% @ 80-120%), Benzoic Acid (47% @ 80-120%)
- CYH0326-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
3,3'-Dichlorobenzidine (4% @ 20%), bis(2-Ethylhexyl)phthalate (22% @ 20%), Di-n-octylphthalate (11% @ 20%)
- CYH0326-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (22% @ 20%), Benzoic Acid (53% @ 20%)
- CYH0326-CCV1 **Initial Calibration Verification recovery is below lower control limit (ICV-).**
3,3'-Dichlorobenzidine
- CYH0346-CCV1 **Calibration required quadratic regression (Q).**



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.

Client Project ID: Textron Providence

ESS Laboratory Work Order: 1508737

CYH0346-CCV1 2,4-Dinitrophenol (84% @ 80-120%), Benzoic Acid (84% @ 80-120%)

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

CYH0346-CCV1 3,3'-Dichlorobenzidine (4% @ 20%), Di-n-octylphthalate (5% @ 20%)

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

CYH0346-CCV1 2,4-Dinitrophenol (16% @ 20%), Benzoic Acid (16% @ 20%)

Initial Calibration Verification recovery is below lower control limit (ICV-).

3,3'-Dichlorobenzidine

CYH0352-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (99% @ 80-120%), Benzoic Acid (96% @ 80-120%)

CYH0352-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

3,3'-Dichlorobenzidine (1% @ 20%), Benzoic Acid (4% @ 20%)

CYH0352-CCV1 **Initial Calibration Verification recovery is below lower control limit (ICV-).**

3,3'-Dichlorobenzidine

Total Metals

CH52539-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Arsenic (191% @ 43-169%)

CH52539-BSD1 **Blank Spike recovery is below lower control limit (B-).**

Lead (66% @ 69-131%)

CH52539-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**

Arsenic (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: 1508737

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: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
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 (2.37)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539
Barium	9.39 (2.37)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539
Cadmium	ND (0.47)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539
Chromium	1.62 (0.95)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539
Lead	ND (4.75)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539
Mercury	ND (0.029)		7471B		1	BJV	08/26/15 14:44	0.69	40	CH52541
Selenium	ND (4.75)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539
Silver	ND (0.47)		6010C		1	KJK	08/26/15 18:04	2.11	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
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 (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1,4-Dioxane	ND (0.0759)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
1-Chlorohexane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
2-Butanone	ND (0.0379)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
2-Chlorotoluene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
2-Hexanone	ND (0.0379)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
4-Chlorotoluene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0379)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Acetone	ND (0.0379)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Benzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Bromobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
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 (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Bromodichloromethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Bromoform	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Bromomethane	ND (0.0076)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Carbon Disulfide	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Chlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Chloroethane	ND (0.0076)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Chloroform	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Chloromethane	ND (0.0076)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Dibromochloromethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Dibromomethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0076)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Diethyl Ether	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Di-isopropyl ether	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Ethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Isopropylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Methylene Chloride	ND (0.0190)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Naphthalene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
n-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
n-Propylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
sec-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Styrene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
tert-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Tetrachloroethene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Tetrahydrofuran	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
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 (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Trichloroethene	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Vinyl Acetate	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Vinyl Chloride	ND (0.0076)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Xylene O	ND (0.0038)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Xylene P,M	ND (0.0076)		8260B Low		1	08/26/15 15:33	CYH0342	CH52614
Xylenes (Total)	ND (0.0076)		8260B Low		1	08/26/15 15:33		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>122 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 12:48

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	ND (38.9)		8100M		1	08/27/15 10:43	CYH0360	CH52610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		95 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
1,2,4-Trichlorobenzene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
1,2-Dichlorobenzene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
1,3-Dichlorobenzene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
1,4-Dichlorobenzene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,3,4,6-Tetrachlorophenol	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,4,5-Trichlorophenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,4,6-Trichlorophenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,4-Dichlorophenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,4-Dimethylphenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,4-Dinitrophenol	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,4-Dinitrotoluene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2,6-Dinitrotoluene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2-Chloronaphthalene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2-Chlorophenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2-Methylnaphthalene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2-Methylphenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2-Nitroaniline	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
2-Nitrophenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
3,3'-Dichlorobenzidine	ND (0.668)		8270D		1	08/27/15 8:30	CYH0352	CH52513
3+4-Methylphenol	ND (0.668)		8270D		1	08/27/15 8:30	CYH0352	CH52513
3-Nitroaniline	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4,6-Dinitro-2-Methylphenol	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4-Bromophenyl-phenylether	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4-Chloro-3-Methylphenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4-Chloroaniline	ND (0.668)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4-Chloro-phenyl-phenyl ether	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4-Nitroaniline	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
4-Nitrophenol	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Acenaphthene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Acenaphthylene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Acetophenone	ND (0.668)		8270D		1	08/27/15 8:30	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.668)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Anthracene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Azobenzene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzo(a)anthracene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzo(a)pyrene	ND (0.167)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzo(b)fluoranthene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzo(g,h,i)perylene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzo(k)fluoranthene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzoic Acid	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Benzyl Alcohol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
bis(2-Chloroethoxy)methane	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
bis(2-Chloroethyl)ether	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
bis(2-chloroisopropyl)Ether	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
bis(2-Ethylhexyl)phthalate	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Butylbenzylphthalate	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Carbazole	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Chrysene	ND (0.167)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Dibenzo(a,h)Anthracene	ND (0.167)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Dibenzofuran	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Diethylphthalate	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Dimethylphthalate	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Di-n-butylphthalate	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Di-n-octylphthalate	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Fluoranthene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Fluorene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Hexachlorobenzene	ND (0.167)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Hexachlorobutadiene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Hexachlorocyclopentadiene	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Hexachloroethane	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Indeno(1,2,3-cd)Pyrene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Isophorone	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Naphthalene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S+S - Sandy Fill - A
 Date Sampled: 08/24/15 15:00
 Percent Solids: 100
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1508737
 ESS Laboratory Sample ID: 1508737-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 8/26/15 10:00

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 (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
N-Nitrosodimethylamine	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
N-Nitroso-Di-n-Propylamine	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
N-nitrosodiphenylamine	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Pentachlorophenol	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Phenanthrene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Phenol	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Pyrene	ND (0.334)		8270D		1	08/27/15 8:30	CYH0352	CH52513
Pyridine	ND (1.67)		8270D		1	08/27/15 8:30	CYH0352	CH52513

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>79 %</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>84 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>84 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>82 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>81 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>86 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>92 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - A
Date Sampled: 08/24/15 15:00
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-01
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)	6.02 (N/A)		9045		1	MJV	08/26/15 10:45	S.U.	CH52626
Corrosivity (pH) Sample Temp	Soil pH measured in water at 24.3 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
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 (2.43)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539
Barium	9.68 (2.43)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539
Cadmium	ND (0.49)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539
Chromium	1.74 (0.97)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539
Lead	ND (4.87)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539
Mercury	ND (0.028)		7471B		1	BJV	08/26/15 14:55	0.7	40	CH52541
Selenium	ND (4.87)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539
Silver	ND (0.49)		6010C		1	KJK	08/26/15 18:25	2.06	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
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 (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1,4-Dioxane	ND (0.0759)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
1-Chlorohexane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
2-Butanone	ND (0.0380)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
2-Chlorotoluene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
2-Hexanone	ND (0.0380)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
4-Chlorotoluene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0380)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Acetone	ND (0.0380)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Benzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Bromobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
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 (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Bromodichloromethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Bromoform	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Bromomethane	ND (0.0076)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Carbon Disulfide	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Chlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Chloroethane	ND (0.0076)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Chloroform	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Chloromethane	ND (0.0076)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Dibromochloromethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Dibromomethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0076)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Diethyl Ether	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Di-isopropyl ether	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Ethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Isopropylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Methylene Chloride	ND (0.0190)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Naphthalene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
n-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
n-Propylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
sec-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Styrene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
tert-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Tetrachloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Tetrahydrofuran	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
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 (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Trichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Vinyl Acetate	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Vinyl Chloride	ND (0.0076)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Xylene O	ND (0.0038)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Xylene P,M	ND (0.0076)		8260B Low		1	08/26/15 16:01	CYH0342	CH52614
Xylenes (Total)	ND (0.0076)		8260B Low		1	08/26/15 16:01		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>123 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100
Initial Volume: 20.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 12:48

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	ND (37.2)		8100M		1	08/27/15 11:22	CYH0360	CH52610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>100 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
1,2,4-Trichlorobenzene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
1,2-Dichlorobenzene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
1,3-Dichlorobenzene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
1,4-Dichlorobenzene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,3,4,6-Tetrachlorophenol	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,4,5-Trichlorophenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,4,6-Trichlorophenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,4-Dichlorophenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,4-Dimethylphenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,4-Dinitrophenol	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,4-Dinitrotoluene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2,6-Dinitrotoluene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2-Chloronaphthalene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2-Chlorophenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2-Methylnaphthalene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2-Methylphenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2-Nitroaniline	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
2-Nitrophenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
3,3'-Dichlorobenzidine	ND (0.673)		8270D		1	08/27/15 9:07	CYH0352	CH52513
3+4-Methylphenol	ND (0.673)		8270D		1	08/27/15 9:07	CYH0352	CH52513
3-Nitroaniline	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4,6-Dinitro-2-Methylphenol	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4-Bromophenyl-phenylether	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4-Chloro-3-Methylphenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4-Chloroaniline	ND (0.673)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4-Chloro-phenyl-phenyl ether	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4-Nitroaniline	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
4-Nitrophenol	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Acenaphthene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Acenaphthylene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Acetophenone	ND (0.673)		8270D		1	08/27/15 9:07	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S+S - Sandy Fill - B
 Date Sampled: 08/24/15 15:20
 Percent Solids: 100
 Initial Volume: 14.9
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1508737
 ESS Laboratory Sample ID: 1508737-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 8/26/15 10:00

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 (0.673)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Anthracene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Azobenzene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzo(a)anthracene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzo(a)pyrene	ND (0.169)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzo(b)fluoranthene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzo(g,h,i)perylene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzo(k)fluoranthene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzoic Acid	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Benzyl Alcohol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
bis(2-Chloroethoxy)methane	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
bis(2-Chloroethyl)ether	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
bis(2-chloroisopropyl)Ether	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
bis(2-Ethylhexyl)phthalate	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Butylbenzylphthalate	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Carbazole	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Chrysene	ND (0.169)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Dibenzo(a,h)Anthracene	ND (0.169)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Dibenzofuran	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Diethylphthalate	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Dimethylphthalate	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Di-n-butylphthalate	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Di-n-octylphthalate	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Fluoranthene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Fluorene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Hexachlorobenzene	ND (0.169)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Hexachlorobutadiene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Hexachlorocyclopentadiene	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Hexachloroethane	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Indeno(1,2,3-cd)Pyrene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Isophorone	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Naphthalene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
N-Nitrosodimethylamine	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
N-Nitroso-Di-n-Propylamine	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
N-nitrosodiphenylamine	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Pentachlorophenol	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Phenanthrene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Phenol	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Pyrene	ND (0.336)		8270D		1	08/27/15 9:07	CYH0352	CH52513
Pyridine	ND (1.69)		8270D		1	08/27/15 9:07	CYH0352	CH52513

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>63 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>60 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>68 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>67 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>70 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>73 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - B
Date Sampled: 08/24/15 15:20
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-02
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)	5.54 (N/A)		9045		1	MJV	08/26/15 10:45	S.U.	CH52626
Corrosivity (pH) Sample Temp	Soil pH measured in water at 24.4 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (2.22)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539
Barium	10.9 (2.22)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539
Cadmium	ND (0.44)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539
Chromium	1.78 (0.89)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539
Lead	ND (4.43)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539
Mercury	ND (0.032)		7471B		1	BJV	08/26/15 14:57	0.62	40	CH52541
Selenium	ND (4.43)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539
Silver	ND (0.44)		6010C		1	KJK	08/26/15 18:28	2.26	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1,4-Dioxane	ND (0.0759)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
1-Chlorohexane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
2-Butanone	ND (0.0379)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
2-Chlorotoluene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
2-Hexanone	ND (0.0379)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
4-Chlorotoluene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0379)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Acetone	ND (0.0379)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Benzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Bromobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Bromodichloromethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Bromoform	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Bromomethane	ND (0.0076)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Carbon Disulfide	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Chlorobenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Chloroethane	ND (0.0076)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Chloroform	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Chloromethane	ND (0.0076)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Dibromochloromethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Dibromomethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0076)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Diethyl Ether	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Di-isopropyl ether	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Ethylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Isopropylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Methylene Chloride	ND (0.0190)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Naphthalene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
n-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
n-Propylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
sec-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Styrene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
tert-Butylbenzene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Tetrachloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Tetrahydrofuran	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Trichloroethene	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Vinyl Acetate	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Vinyl Chloride	ND (0.0076)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Xylene O	ND (0.0038)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Xylene P,M	ND (0.0076)		8260B Low		1	08/26/15 16:30	CYH0342	CH52614
Xylenes (Total)	ND (0.0076)		8260B Low		1	08/26/15 16:30		[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>86 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 12:48

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	ND (38.1)		8100M		1	08/27/15 12:01	CYH0360	CH52610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		95 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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	08/27/15 9:45	CYH0352	CH52513
1,2,4-Trichlorobenzene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
1,2-Dichlorobenzene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
1,3-Dichlorobenzene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
1,4-Dichlorobenzene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,3,4,6-Tetrachlorophenol	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,4,5-Trichlorophenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,4,6-Trichlorophenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,4-Dichlorophenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,4-Dimethylphenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,4-Dinitrophenol	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,4-Dinitrotoluene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2,6-Dinitrotoluene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2-Chloronaphthalene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2-Chlorophenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2-Methylnaphthalene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2-Methylphenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2-Nitroaniline	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
2-Nitrophenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
3,3'-Dichlorobenzidine	ND (0.716)		8270D		1	08/27/15 9:45	CYH0352	CH52513
3+4-Methylphenol	ND (0.716)		8270D		1	08/27/15 9:45	CYH0352	CH52513
3-Nitroaniline	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4,6-Dinitro-2-Methylphenol	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4-Bromophenyl-phenylether	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4-Chloro-3-Methylphenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4-Chloroaniline	ND (0.716)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4-Chloro-phenyl-phenyl ether	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4-Nitroaniline	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
4-Nitrophenol	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Acenaphthene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Acenaphthylene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Acetophenone	ND (0.716)		8270D		1	08/27/15 9:45	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.716)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Anthracene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Azobenzene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzo(a)anthracene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzo(a)pyrene	ND (0.179)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzo(b)fluoranthene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzo(g,h,i)perylene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzo(k)fluoranthene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzoic Acid	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Benzyl Alcohol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
bis(2-Chloroethoxy)methane	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
bis(2-Chloroethyl)ether	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
bis(2-chloroisopropyl)Ether	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
bis(2-Ethylhexyl)phthalate	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Butylbenzylphthalate	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Carbazole	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Chrysene	ND (0.179)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Dibenzo(a,h)Anthracene	ND (0.179)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Dibenzofuran	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Diethylphthalate	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Dimethylphthalate	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Di-n-butylphthalate	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Di-n-octylphthalate	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Fluoranthene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Fluorene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Hexachlorobenzene	ND (0.179)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Hexachlorobutadiene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Hexachlorocyclopentadiene	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Hexachloroethane	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Indeno(1,2,3-cd)Pyrene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Isophorone	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Naphthalene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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	08/27/15 9:45	CYH0352	CH52513
N-Nitrosodimethylamine	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
N-Nitroso-Di-n-Propylamine	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
N-nitrosodiphenylamine	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Pentachlorophenol	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Phenanthrene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Phenol	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Pyrene	ND (0.357)		8270D		1	08/27/15 9:45	CYH0352	CH52513
Pyridine	ND (1.79)		8270D		1	08/27/15 9:45	CYH0352	CH52513

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	60 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	54 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	62 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	64 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	60 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	61 %		30-130
<i>Surrogate: Phenol-d6</i>	65 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	73 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - C
Date Sampled: 08/24/15 15:40
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-03
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)	5.33 (N/A)		9045		1	MJV	08/26/15 10:45	S.U.	CH52626
Corrosivity (pH) Sample Temp	Soil pH measured in water at 24.3 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (1.88)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539
Barium	10.1 (1.88)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539
Cadmium	ND (0.38)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539
Chromium	1.94 (0.75)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539
Lead	ND (3.77)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539
Mercury	ND (0.029)		7471B		1	BJV	08/26/15 14:59	0.68	40	CH52541
Selenium	ND (3.77)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539
Silver	ND (0.38)		6010C		1	KJK	08/26/15 18:45	2.66	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,1,1-Trichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,1,2,2-Tetrachloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,1,2-Trichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,1-Dichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,1-Dichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,1-Dichloropropene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2,3-Trichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2,3-Trichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2,4-Trichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2,4-Trimethylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2-Dibromo-3-Chloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2-Dibromoethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2-Dichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,2-Dichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,3,5-Trimethylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,3-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,3-Dichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,4-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1,4-Dioxane	ND (0.0726)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
1-Chlorohexane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
2,2-Dichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
2-Butanone	ND (0.0363)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
2-Chlorotoluene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
2-Hexanone	ND (0.0363)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
4-Chlorotoluene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
4-Isopropyltoluene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
4-Methyl-2-Pentanone	ND (0.0363)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Acetone	ND (0.0363)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Benzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Bromobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Bromodichloromethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Bromoform	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Bromomethane	ND (0.0073)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Carbon Disulfide	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Carbon Tetrachloride	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Chlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Chloroethane	ND (0.0073)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Chloroform	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Chloromethane	ND (0.0073)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
cis-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
cis-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Dibromochloromethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Dibromomethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Dichlorodifluoromethane	ND (0.0073)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Diethyl Ether	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Di-isopropyl ether	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Ethyl tertiary-butyl ether	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Ethylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Hexachlorobutadiene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Isopropylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Methyl tert-Butyl Ether	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Methylene Chloride	ND (0.0182)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Naphthalene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
n-Butylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
n-Propylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
sec-Butylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Styrene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
tert-Butylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Tertiary-amyl methyl ether	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Tetrachloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Tetrahydrofuran	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
trans-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
trans-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Trichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Trichlorofluoromethane	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Vinyl Acetate	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Vinyl Chloride	ND (0.0073)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Xylene O	ND (0.0036)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Xylene P,M	ND (0.0073)		8260B Low		1	08/28/15 13:28	CYH0359	CH52721
Xylenes (Total)	ND (0.0073)		8260B Low		1	08/28/15 13:28		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>114 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 15:25

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	ND (38.2)		8100M		1	08/27/15 15:27	CYH0360	CH52611
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>100 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
1,2,4-Trichlorobenzene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
1,2-Dichlorobenzene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
1,3-Dichlorobenzene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
1,4-Dichlorobenzene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,3,4,6-Tetrachlorophenol	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,4,5-Trichlorophenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,4,6-Trichlorophenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,4-Dichlorophenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,4-Dimethylphenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,4-Dinitrophenol	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,4-Dinitrotoluene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2,6-Dinitrotoluene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2-Chloronaphthalene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2-Chlorophenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2-Methylnaphthalene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2-Methylphenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2-Nitroaniline	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
2-Nitrophenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
3,3'-Dichlorobenzidine	ND (0.660)		8270D		1	08/27/15 10:22	CYH0352	CH52513
3+4-Methylphenol	ND (0.660)		8270D		1	08/27/15 10:22	CYH0352	CH52513
3-Nitroaniline	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4,6-Dinitro-2-Methylphenol	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4-Bromophenyl-phenylether	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4-Chloro-3-Methylphenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4-Chloroaniline	ND (0.660)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4-Chloro-phenyl-phenyl ether	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4-Nitroaniline	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
4-Nitrophenol	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Acenaphthene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Acenaphthylene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Acetophenone	ND (0.660)		8270D		1	08/27/15 10:22	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.660)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Anthracene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Azobenzene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzo(a)anthracene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzo(a)pyrene	ND (0.165)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzo(b)fluoranthene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzo(g,h,i)perylene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzo(k)fluoranthene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzoic Acid	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Benzyl Alcohol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
bis(2-Chloroethoxy)methane	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
bis(2-Chloroethyl)ether	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
bis(2-chloroisopropyl)Ether	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
bis(2-Ethylhexyl)phthalate	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Butylbenzylphthalate	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Carbazole	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Chrysene	ND (0.165)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Dibenzo(a,h)Anthracene	ND (0.165)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Dibenzofuran	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Diethylphthalate	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Dimethylphthalate	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Di-n-butylphthalate	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Di-n-octylphthalate	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Fluoranthene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Fluorene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Hexachlorobenzene	ND (0.165)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Hexachlorobutadiene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Hexachlorocyclopentadiene	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Hexachloroethane	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Indeno(1,2,3-cd)Pyrene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Isophorone	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Naphthalene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
N-Nitrosodimethylamine	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
N-Nitroso-Di-n-Propylamine	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
N-nitrosodiphenylamine	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Pentachlorophenol	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Phenanthrene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Phenol	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Pyrene	ND (0.329)		8270D		1	08/27/15 10:22	CYH0352	CH52513
Pyridine	ND (1.65)		8270D		1	08/27/15 10:22	CYH0352	CH52513

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	72 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	60 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	76 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	77 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	74 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	74 %		30-130
<i>Surrogate: Phenol-d6</i>	78 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	86 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - D
Date Sampled: 08/24/15 15:50
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-04
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)	5.29 (N/A)		9045		1	MJV	08/26/15 10:45	S.U.	CH52626
Corrosivity (pH) Sample Temp	Soil pH measured in water at 24.4 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
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 (1.72)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539
Barium	10.8 (1.72)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539
Cadmium	ND (0.34)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539
Chromium	1.72 (0.69)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539
Lead	ND (3.45)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539
Mercury	ND (0.029)		7471B		1	BJV	08/26/15 15:00	0.69	40	CH52541
Selenium	ND (3.45)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539
Silver	ND (0.34)		6010C		1	KJK	08/26/15 18:49	2.91	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
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 (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,1,1-Trichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,1,2,2-Tetrachloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,1,2-Trichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,1-Dichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,1-Dichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,1-Dichloropropene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2,3-Trichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2,3-Trichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2,4-Trichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2,4-Trimethylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2-Dibromo-3-Chloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2-Dibromoethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2-Dichloroethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,2-Dichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,3,5-Trimethylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,3-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,3-Dichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,4-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1,4-Dioxane	ND (0.0716)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
1-Chlorohexane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
2,2-Dichloropropane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
2-Butanone	ND (0.0358)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
2-Chlorotoluene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
2-Hexanone	ND (0.0358)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
4-Chlorotoluene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
4-Isopropyltoluene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
4-Methyl-2-Pentanone	ND (0.0358)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Acetone	ND (0.0358)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Benzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Bromobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
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 (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Bromodichloromethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Bromoform	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Bromomethane	ND (0.0072)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Carbon Disulfide	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Carbon Tetrachloride	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Chlorobenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Chloroethane	ND (0.0072)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Chloroform	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Chloromethane	ND (0.0072)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
cis-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
cis-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Dibromochloromethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Dibromomethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Dichlorodifluoromethane	ND (0.0072)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Diethyl Ether	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Di-isopropyl ether	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Ethyl tertiary-butyl ether	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Ethylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Hexachlorobutadiene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Isopropylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Methyl tert-Butyl Ether	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Methylene Chloride	ND (0.0179)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Naphthalene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
n-Butylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
n-Propylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
sec-Butylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Styrene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
tert-Butylbenzene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Tertiary-amyl methyl ether	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Tetrachloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Tetrahydrofuran	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
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 (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
trans-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
trans-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Trichloroethene	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Trichlorofluoromethane	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Vinyl Acetate	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Vinyl Chloride	ND (0.0072)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Xylene O	ND (0.0036)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Xylene P,M	ND (0.0072)		8260B Low		1	08/28/15 13:56	CYH0359	CH52721
Xylenes (Total)	ND (0.0072)		8260B Low		1	08/28/15 13:56		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>114 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</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: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 15:25

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	ND (38.6)		8100M		1	08/27/15 16:06	CYH0360	CH52611
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>102 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
1,2,4-Trichlorobenzene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
1,2-Dichlorobenzene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
1,3-Dichlorobenzene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
1,4-Dichlorobenzene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,3,4,6-Tetrachlorophenol	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,4,5-Trichlorophenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,4,6-Trichlorophenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,4-Dichlorophenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,4-Dimethylphenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,4-Dinitrophenol	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,4-Dinitrotoluene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2,6-Dinitrotoluene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2-Chloronaphthalene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2-Chlorophenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2-Methylnaphthalene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2-Methylphenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2-Nitroaniline	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
2-Nitrophenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
3,3'-Dichlorobenzidine	ND (0.702)		8270D		1	08/27/15 10:59	CYH0352	CH52513
3+4-Methylphenol	ND (0.702)		8270D		1	08/27/15 10:59	CYH0352	CH52513
3-Nitroaniline	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4,6-Dinitro-2-Methylphenol	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4-Bromophenyl-phenylether	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4-Chloro-3-Methylphenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4-Chloroaniline	ND (0.702)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4-Chloro-phenyl-phenyl ether	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4-Nitroaniline	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
4-Nitrophenol	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Acenaphthene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Acenaphthylene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Acetophenone	ND (0.702)		8270D		1	08/27/15 10:59	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.702)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Anthracene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Azobenzene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzo(a)anthracene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzo(a)pyrene	ND (0.176)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzo(b)fluoranthene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzo(g,h,i)perylene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzo(k)fluoranthene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzoic Acid	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Benzyl Alcohol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
bis(2-Chloroethoxy)methane	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
bis(2-Chloroethyl)ether	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
bis(2-chloroisopropyl)Ether	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
bis(2-Ethylhexyl)phthalate	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Butylbenzylphthalate	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Carbazole	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Chrysene	ND (0.176)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Dibenzo(a,h)Anthracene	ND (0.176)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Dibenzofuran	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Diethylphthalate	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Dimethylphthalate	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Di-n-butylphthalate	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Di-n-octylphthalate	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Fluoranthene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Fluorene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Hexachlorobenzene	ND (0.176)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Hexachlorobutadiene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Hexachlorocyclopentadiene	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Hexachloroethane	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Indeno(1,2,3-cd)Pyrene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Isophorone	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Naphthalene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 10:00

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 (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
N-Nitrosodimethylamine	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
N-Nitroso-Di-n-Propylamine	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
N-nitrosodiphenylamine	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Pentachlorophenol	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Phenanthrene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Phenol	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Pyrene	ND (0.350)		8270D		1	08/27/15 10:59	CYH0352	CH52513
Pyridine	ND (1.76)		8270D		1	08/27/15 10:59	CYH0352	CH52513

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	60 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	48 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	62 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	61 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	60 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	61 %		30-130
<i>Surrogate: Phenol-d6</i>	63 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	69 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Sandy Fill - E
Date Sampled: 08/24/15 16:00
Percent Solids: 100

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-05
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)	5.43 (N/A)		9045		1	MJV	08/26/15 10:45	S.U.	CH52626
Corrosivity (pH) Sample Temp	Soil pH measured in water at 24.4 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
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	2.49 (2.17)		6010C		1	KJK	08/26/15 18:53	2.45	100	CH52539
Barium	29.8 (2.17)		6010C		1	KJK	08/26/15 18:53	2.45	100	CH52539
Cadmium	ND (0.43)		6010C		1	KJK	08/26/15 18:53	2.45	100	CH52539
Chromium	5.68 (0.87)		6010C		1	KJK	08/26/15 18:53	2.45	100	CH52539
Lead	13.2 (4.35)		6010C		1	KJK	08/26/15 18:53	2.45	100	CH52539
Mercury	0.039 (0.031)		7471B		1	BJV	08/26/15 15:02	0.67	40	CH52541
Selenium	ND (8.69)		6010C		2	KJK	08/27/15 14:46	2.45	100	CH52539
Silver	ND (0.43)		6010C		1	KJK	08/26/15 18:53	2.45	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
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	08/26/15 17:55	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1,4-Dioxane	ND (0.0859)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
1-Chlorohexane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
2-Butanone	ND (0.0429)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
2-Chlorotoluene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
2-Hexanone	ND (0.0429)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
4-Chlorotoluene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0429)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Acetone	ND (0.0429)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Benzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Bromobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
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	08/26/15 17:55	CYH0342	CH52614
Bromodichloromethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Bromoform	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Bromomethane	ND (0.0086)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Carbon Disulfide	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Chlorobenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Chloroethane	ND (0.0086)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Chloroform	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Chloromethane	ND (0.0086)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Dibromochloromethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Dibromomethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0086)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Diethyl Ether	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Di-isopropyl ether	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Ethylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Isopropylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Methylene Chloride	ND (0.0215)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Naphthalene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
n-Butylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
n-Propylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
sec-Butylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Styrene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
tert-Butylbenzene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Tetrachloroethene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Tetrahydrofuran	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
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	08/26/15 17:55	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Trichloroethene	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Vinyl Acetate	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Vinyl Chloride	ND (0.0086)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Xylene O	ND (0.0043)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Xylene P,M	ND (0.0086)		8260B Low		1	08/26/15 17:55	CYH0342	CH52614
Xylenes (Total)	ND (0.0086)		8260B Low		1	08/26/15 17:55		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>123 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>85 %</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
Client Sample ID: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 15:25

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	194 (41.4)		8100M		1	08/27/15 16:45	CYH0360	CH52611
		<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: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
1,2,4-Trichlorobenzene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
1,2-Dichlorobenzene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
1,3-Dichlorobenzene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
1,4-Dichlorobenzene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,3,4,6-Tetrachlorophenol	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,4,5-Trichlorophenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,4,6-Trichlorophenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,4-Dichlorophenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,4-Dimethylphenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,4-Dinitrophenol	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,4-Dinitrotoluene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2,6-Dinitrotoluene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2-Chloronaphthalene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2-Chlorophenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2-Methylnaphthalene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2-Methylphenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2-Nitroaniline	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
2-Nitrophenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
3,3'-Dichlorobenzidine	ND (0.725)		8270D		1	08/27/15 11:37	CYH0352	CH52613
3+4-Methylphenol	ND (0.725)		8270D		1	08/27/15 11:37	CYH0352	CH52613
3-Nitroaniline	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4,6-Dinitro-2-Methylphenol	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4-Bromophenyl-phenylether	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4-Chloro-3-Methylphenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4-Chloroaniline	ND (0.725)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4-Chloro-phenyl-phenyl ether	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4-Nitroaniline	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
4-Nitrophenol	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Acenaphthene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Acenaphthylene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Acetophenone	ND (0.725)		8270D		1	08/27/15 11:37	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - A
Date Sampled: 08/24/15 16:10
Percent Solids: 94
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.725)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Anthracene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Azobenzene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzo(a)anthracene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzo(a)pyrene	ND (0.181)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzo(b)fluoranthene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzo(g,h,i)perylene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzo(k)fluoranthene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzoic Acid	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Benzyl Alcohol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
bis(2-Chloroethoxy)methane	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
bis(2-Chloroethyl)ether	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
bis(2-chloroisopropyl)Ether	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
bis(2-Ethylhexyl)phthalate	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Butylbenzylphthalate	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Carbazole	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Chrysene	ND (0.181)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Dibenzo(a,h)Anthracene	ND (0.181)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Dibenzofuran	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Diethylphthalate	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Dimethylphthalate	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Di-n-butylphthalate	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Di-n-octylphthalate	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Fluoranthene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Fluorene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Hexachlorobenzene	ND (0.181)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Hexachlorobutadiene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Hexachlorocyclopentadiene	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Hexachloroethane	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Indeno(1,2,3-cd)Pyrene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Isophorone	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Naphthalene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S+S - Top Soil - A
 Date Sampled: 08/24/15 16:10
 Percent Solids: 94
 Initial Volume: 14.7
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1508737
 ESS Laboratory Sample ID: 1508737-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 8/26/15 16:44

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 (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
N-Nitrosodimethylamine	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
N-Nitroso-Di-n-Propylamine	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
N-nitrosodiphenylamine	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Pentachlorophenol	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Phenanthrene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Phenol	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Pyrene	ND (0.362)		8270D		1	08/27/15 11:37	CYH0352	CH52613
Pyridine	ND (1.81)		8270D		1	08/27/15 11:37	CYH0352	CH52613

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	41 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	59 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	47 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	52 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	44 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	47 %		30-130
<i>Surrogate: Phenol-d6</i>	49 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	66 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
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	2.35 (1.94)		6010C		1	KJK	08/26/15 18:57	2.75	100	CH52539
Barium	28.5 (1.94)		6010C		1	KJK	08/26/15 18:57	2.75	100	CH52539
Cadmium	ND (0.39)		6010C		1	KJK	08/26/15 18:57	2.75	100	CH52539
Chromium	5.42 (0.77)		6010C		1	KJK	08/26/15 18:57	2.75	100	CH52539
Lead	13.0 (3.87)		6010C		1	KJK	08/26/15 18:57	2.75	100	CH52539
Mercury	ND (0.033)		7471B		1	BJV	08/26/15 15:04	0.64	40	CH52541
Selenium	ND (7.74)		6010C		2	KJK	08/27/15 14:50	2.75	100	CH52539
Silver	ND (0.39)		6010C		1	KJK	08/26/15 18:57	2.75	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
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	08/26/15 18:23	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1,4-Dioxane	ND (0.0845)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
1-Chlorohexane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
2-Butanone	ND (0.0422)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
2-Chlorotoluene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
2-Hexanone	ND (0.0422)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
4-Chlorotoluene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0422)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Acetone	ND (0.0422)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Benzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Bromobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
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	08/26/15 18:23	CYH0342	CH52614
Bromodichloromethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Bromoform	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Bromomethane	ND (0.0084)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Carbon Disulfide	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Chlorobenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Chloroethane	ND (0.0084)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Chloroform	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Chloromethane	ND (0.0084)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Dibromochloromethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Dibromomethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Diethyl Ether	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Di-isopropyl ether	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Ethylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Isopropylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Methylene Chloride	ND (0.0211)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Naphthalene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
n-Butylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
n-Propylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
sec-Butylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Styrene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
tert-Butylbenzene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Tetrachloroethene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Tetrahydrofuran	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
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	08/26/15 18:23	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Trichloroethene	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Vinyl Acetate	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Vinyl Chloride	ND (0.0084)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Xylene O	ND (0.0042)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Xylene P,M	ND (0.0084)		8260B Low		1	08/26/15 18:23	CYH0342	CH52614
Xylenes (Total)	ND (0.0084)		8260B Low		1	08/26/15 18:23		[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>77 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>114 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 15:25

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	181 (40.5)		8100M		1	08/27/15 17:24	CYH0360	CH52611
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		75 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
1,2,4-Trichlorobenzene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
1,2-Dichlorobenzene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
1,3-Dichlorobenzene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
1,4-Dichlorobenzene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,3,4,6-Tetrachlorophenol	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,4,5-Trichlorophenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,4,6-Trichlorophenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,4-Dichlorophenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,4-Dimethylphenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,4-Dinitrophenol	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,4-Dinitrotoluene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2,6-Dinitrotoluene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2-Chloronaphthalene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2-Chlorophenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2-Methylnaphthalene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2-Methylphenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2-Nitroaniline	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
2-Nitrophenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
3,3'-Dichlorobenzidine	ND (0.674)		8270D		1	08/27/15 12:14	CYH0352	CH52613
3+4-Methylphenol	ND (0.674)		8270D		1	08/27/15 12:14	CYH0352	CH52613
3-Nitroaniline	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4,6-Dinitro-2-Methylphenol	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4-Bromophenyl-phenylether	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4-Chloro-3-Methylphenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4-Chloroaniline	ND (0.674)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4-Chloro-phenyl-phenyl ether	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4-Nitroaniline	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
4-Nitrophenol	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Acenaphthene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Acenaphthylene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Acetophenone	ND (0.674)		8270D		1	08/27/15 12:14	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.674)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Anthracene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Azobenzene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzo(a)anthracene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzo(a)pyrene	ND (0.169)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzo(b)fluoranthene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzo(g,h,i)perylene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzo(k)fluoranthene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzoic Acid	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Benzyl Alcohol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
bis(2-Chloroethoxy)methane	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
bis(2-Chloroethyl)ether	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
bis(2-chloroisopropyl)Ether	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
bis(2-Ethylhexyl)phthalate	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Butylbenzylphthalate	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Carbazole	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Chrysene	ND (0.169)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Dibenzo(a,h)Anthracene	ND (0.169)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Dibenzofuran	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Diethylphthalate	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Dimethylphthalate	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Di-n-butylphthalate	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Di-n-octylphthalate	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Fluoranthene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Fluorene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Hexachlorobenzene	ND (0.169)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Hexachlorobutadiene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Hexachlorocyclopentadiene	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Hexachloroethane	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Indeno(1,2,3-cd)Pyrene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Isophorone	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Naphthalene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - B
Date Sampled: 08/24/15 16:20
Percent Solids: 94
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
N-Nitrosodimethylamine	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
N-Nitroso-Di-n-Propylamine	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
N-nitrosodiphenylamine	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Pentachlorophenol	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Phenanthrene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Phenol	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Pyrene	ND (0.337)		8270D		1	08/27/15 12:14	CYH0352	CH52613
Pyridine	ND (1.69)		8270D		1	08/27/15 12:14	CYH0352	CH52613

	<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>	63 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	46 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	50 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	43 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	45 %		30-130
<i>Surrogate: Phenol-d6</i>	49 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
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	3.08 (2.58)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539
Barium	29.4 (2.58)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539
Cadmium	ND (0.52)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539
Chromium	5.59 (1.03)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539
Lead	17.7 (5.17)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539
Mercury	0.040 (0.034)		7471B		1	BJV	08/26/15 15:05	0.63	40	CH52541
Selenium	ND (5.17)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539
Silver	ND (0.52)		6010C		1	KJK	08/26/15 19:01	2.09	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
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	08/26/15 18:51	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1,4-Dioxane	ND (0.0871)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
1-Chlorohexane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
2-Butanone	ND (0.0435)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
2-Chlorotoluene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
2-Hexanone	ND (0.0435)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
4-Chlorotoluene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0435)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Acetone	ND (0.0435)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Benzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Bromobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
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	08/26/15 18:51	CYH0342	CH52614
Bromodichloromethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Bromoform	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Bromomethane	ND (0.0087)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Carbon Disulfide	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Chlorobenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Chloroethane	ND (0.0087)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Chloroform	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Chloromethane	ND (0.0087)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Dibromochloromethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Dibromomethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Diethyl Ether	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Di-isopropyl ether	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Ethylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Isopropylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Methylene Chloride	ND (0.0218)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Naphthalene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
n-Butylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
n-Propylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
sec-Butylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Styrene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
tert-Butylbenzene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Tetrachloroethene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Tetrahydrofuran	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
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	08/26/15 18:51	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Trichloroethene	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Vinyl Acetate	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Vinyl Chloride	ND (0.0087)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Xylene O	ND (0.0044)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Xylene P,M	ND (0.0087)		8260B Low		1	08/26/15 18:51	CYH0342	CH52614
Xylenes (Total)	ND (0.0087)		8260B Low		1	08/26/15 18:51		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>132 %</i>	<i>S+</i>	<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>71 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>119 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 15:25

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	190 (40.9)		8100M		1	08/27/15 18:04	CYH0360	CH52611
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		79 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
1,2,4-Trichlorobenzene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
1,2-Dichlorobenzene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
1,3-Dichlorobenzene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
1,4-Dichlorobenzene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,3,4,6-Tetrachlorophenol	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,4,5-Trichlorophenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,4,6-Trichlorophenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,4-Dichlorophenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,4-Dimethylphenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,4-Dinitrophenol	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,4-Dinitrotoluene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2,6-Dinitrotoluene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2-Chloronaphthalene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2-Chlorophenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2-Methylnaphthalene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2-Methylphenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2-Nitroaniline	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
2-Nitrophenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
3,3'-Dichlorobenzidine	ND (0.740)		8270D		1	08/27/15 12:51	CYH0352	CH52613
3+4-Methylphenol	ND (0.740)		8270D		1	08/27/15 12:51	CYH0352	CH52613
3-Nitroaniline	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4,6-Dinitro-2-Methylphenol	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4-Bromophenyl-phenylether	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4-Chloro-3-Methylphenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4-Chloroaniline	ND (0.740)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4-Chloro-phenyl-phenyl ether	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4-Nitroaniline	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
4-Nitrophenol	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Acenaphthene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Acenaphthylene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Acetophenone	ND (0.740)		8270D		1	08/27/15 12:51	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.740)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Anthracene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Azobenzene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzo(a)anthracene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzo(a)pyrene	ND (0.185)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzo(b)fluoranthene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzo(g,h,i)perylene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzo(k)fluoranthene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzoic Acid	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Benzyl Alcohol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
bis(2-Chloroethoxy)methane	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
bis(2-Chloroethyl)ether	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
bis(2-chloroisopropyl)Ether	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
bis(2-Ethylhexyl)phthalate	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Butylbenzylphthalate	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Carbazole	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Chrysene	ND (0.185)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Dibenzo(a,h)Anthracene	ND (0.185)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Dibenzofuran	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Diethylphthalate	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Dimethylphthalate	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Di-n-butylphthalate	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Di-n-octylphthalate	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Fluoranthene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Fluorene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Hexachlorobenzene	ND (0.185)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Hexachlorobutadiene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Hexachlorocyclopentadiene	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Hexachloroethane	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Indeno(1,2,3-cd)Pyrene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Isophorone	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Naphthalene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - C
Date Sampled: 08/24/15 16:30
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
N-Nitrosodimethylamine	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
N-Nitroso-Di-n-Propylamine	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
N-nitrosodiphenylamine	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Pentachlorophenol	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Phenanthrene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Phenol	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Pyrene	ND (0.369)		8270D		1	08/27/15 12:51	CYH0352	CH52613
Pyridine	ND (1.85)		8270D		1	08/27/15 12:51	CYH0352	CH52613

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>34 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>53 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>40 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>44 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>38 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>39 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>43 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>56 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
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 (2.38)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539
Barium	27.7 (2.38)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539
Cadmium	ND (0.48)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539
Chromium	5.74 (0.95)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539
Lead	12.7 (4.76)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539
Mercury	0.033 (0.029)		7471B		1	BJV	08/26/15 15:07	0.69	40	CH52541
Selenium	ND (4.76)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539
Silver	ND (0.48)		6010C		1	KJK	08/26/15 19:05	2.1	100	CH52539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
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 (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,1,1-Trichloroethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,1,2,2-Tetrachloroethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,1,2-Trichloroethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,1-Dichloroethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,1-Dichloroethene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,1-Dichloropropene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2,3-Trichlorobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2,3-Trichloropropane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2,4-Trichlorobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2,4-Trimethylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2-Dibromo-3-Chloropropane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2-Dibromoethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2-Dichlorobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2-Dichloroethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,2-Dichloropropane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,3,5-Trimethylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,3-Dichlorobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,3-Dichloropropane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,4-Dichlorobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1,4-Dioxane	ND (0.0806)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
1-Chlorohexane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
2,2-Dichloropropane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
2-Butanone	ND (0.0403)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
2-Chlorotoluene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
2-Hexanone	ND (0.0403)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
4-Chlorotoluene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
4-Isopropyltoluene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
4-Methyl-2-Pentanone	ND (0.0403)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Acetone	0.0660 (0.0403)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Benzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Bromobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
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 (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Bromodichloromethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Bromoform	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Bromomethane	ND (0.0081)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Carbon Disulfide	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Carbon Tetrachloride	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Chlorobenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Chloroethane	ND (0.0081)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Chloroform	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Chloromethane	ND (0.0081)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
cis-1,2-Dichloroethene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
cis-1,3-Dichloropropene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Dibromochloromethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Dibromomethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Dichlorodifluoromethane	ND (0.0081)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Diethyl Ether	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Di-isopropyl ether	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Ethyl tertiary-butyl ether	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Ethylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Hexachlorobutadiene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Isopropylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Methyl tert-Butyl Ether	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Methylene Chloride	ND (0.0202)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Naphthalene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
n-Butylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
n-Propylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
sec-Butylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Styrene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
tert-Butylbenzene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Tertiary-amyl methyl ether	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Tetrachloroethene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Tetrahydrofuran	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
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 (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
trans-1,2-Dichloroethene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
trans-1,3-Dichloropropene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Trichloroethene	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Trichlorofluoromethane	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Vinyl Acetate	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Vinyl Chloride	ND (0.0081)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Xylene O	ND (0.0040)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Xylene P,M	ND (0.0081)		8260B Low		1	08/26/15 19:20	CYH0342	CH52614
Xylenes (Total)	ND (0.0081)		8260B Low		1	08/26/15 19:20		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>127 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</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: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/26/15 15:25

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	213 (38.9)		8100M		1	08/27/15 18:42	CYH0360	CH52611
		<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: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
1,2,4-Trichlorobenzene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
1,2-Dichlorobenzene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
1,3-Dichlorobenzene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
1,4-Dichlorobenzene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,3,4,6-Tetrachlorophenol	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,4,5-Trichlorophenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,4,6-Trichlorophenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,4-Dichlorophenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,4-Dimethylphenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,4-Dinitrophenol	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,4-Dinitrotoluene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2,6-Dinitrotoluene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2-Chloronaphthalene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2-Chlorophenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2-Methylnaphthalene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2-Methylphenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2-Nitroaniline	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
2-Nitrophenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
3,3'-Dichlorobenzidine	ND (0.695)		8270D		1	08/27/15 13:29	CYH0352	CH52613
3+4-Methylphenol	ND (0.695)		8270D		1	08/27/15 13:29	CYH0352	CH52613
3-Nitroaniline	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4,6-Dinitro-2-Methylphenol	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4-Bromophenyl-phenylether	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4-Chloro-3-Methylphenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4-Chloroaniline	ND (0.695)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4-Chloro-phenyl-phenyl ether	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4-Nitroaniline	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
4-Nitrophenol	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Acenaphthene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Acenaphthylene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Acetophenone	ND (0.695)		8270D		1	08/27/15 13:29	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.695)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Anthracene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Azobenzene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzo(a)anthracene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzo(a)pyrene	ND (0.174)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzo(b)fluoranthene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzo(g,h,i)perylene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzo(k)fluoranthene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzoic Acid	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Benzyl Alcohol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
bis(2-Chloroethoxy)methane	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
bis(2-Chloroethyl)ether	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
bis(2-chloroisopropyl)Ether	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
bis(2-Ethylhexyl)phthalate	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Butylbenzylphthalate	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Carbazole	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Chrysene	ND (0.174)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Dibenzo(a,h)Anthracene	ND (0.174)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Dibenzofuran	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Diethylphthalate	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Dimethylphthalate	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Di-n-butylphthalate	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Di-n-octylphthalate	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Fluoranthene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Fluorene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Hexachlorobenzene	ND (0.174)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Hexachlorobutadiene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Hexachlorocyclopentadiene	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Hexachloroethane	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Indeno(1,2,3-cd)Pyrene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Isophorone	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Naphthalene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S+S - Top Soil - D
Date Sampled: 08/24/15 16:40
Percent Solids: 103
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1508737
ESS Laboratory Sample ID: 1508737-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/26/15 16:44

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 (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
N-Nitrosodimethylamine	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
N-Nitroso-Di-n-Propylamine	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
N-nitrosodiphenylamine	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Pentachlorophenol	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Phenanthrene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Phenol	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Pyrene	ND (0.347)		8270D		1	08/27/15 13:29	CYH0352	CH52613
Pyridine	ND (1.74)		8270D		1	08/27/15 13:29	CYH0352	CH52613

	<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>63 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>51 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>54 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>47 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>50 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>53 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>66 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52539 - 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	73.2	8.06	mg/kg wet	52.30	140	43-169
Barium	139	8.06	mg/kg wet	145.0	96	80-120
Cadmium	58.8	1.61	mg/kg wet	71.60	82	62-138
Chromium	86.0	3.23	mg/kg wet	88.50	97	80-120
Lead	56.5	16.1	mg/kg wet	77.80	73	69-131
Selenium	73.2	16.1	mg/kg wet	81.10	90	80-120
Silver	111	1.61	mg/kg wet	114.0	97	80-120

LCS Dup

Arsenic	99.7	7.94	mg/kg wet	52.30	191	43-169	31	20	B+, D+
Barium	133	7.94	mg/kg wet	145.0	92	80-120	5	20	
Cadmium	51.9	1.59	mg/kg wet	71.60	72	62-138	12	20	
Chromium	84.4	3.17	mg/kg wet	88.50	95	80-120	2	20	
Lead	51.6	15.9	mg/kg wet	77.80	66	69-131	9	20	B-
Selenium	66.3	15.9	mg/kg wet	81.10	82	80-120	10	20	
Silver	105	1.59	mg/kg wet	114.0	92	80-120	5	20	

Batch CH52541 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.68	1.62	mg/kg wet	9.700	100	80-120
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LCS Dup

Mercury	10.3	1.55	mg/kg wet	9.700	106	80-120	6	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH52614 - 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: 1508737

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 CH52614 - 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: 1508737

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 CH52614 - 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	0.0570		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0396		mg/kg wet	0.05000		79	70-130			
Surrogate: Dibromofluoromethane	0.0530		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0554		mg/kg wet	0.05000		111	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130			
1,1,1-Trichloroethane	0.0594	0.0050	mg/kg wet	0.05000		119	70-130			
1,1,2,2-Tetrachloroethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,2-Trichloroethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,1-Dichloropropene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,2,3-Trichlorobenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
1,2,3-Trichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
1,2,4-Trichlorobenzene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,4-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dibromo-3-Chloropropane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130			
1,2-Dibromoethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichloroethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130			
1,2-Dichloropropane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,3,5-Trimethylbenzene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,3-Dichlorobenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichloropropane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52614 - 5035

1,4-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,4-Dioxane	1.12	0.100	mg/kg wet	1.000		112	70-130			
1-Chlorohexane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2,2-Dichloropropane	0.0674	0.0050	mg/kg wet	0.05000		135	70-130			B+
2-Butanone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
2-Chlorotoluene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.277	0.0500	mg/kg wet	0.2500		111	70-130			
4-Chlorotoluene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
4-Isopropyltoluene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
4-Methyl-2-Pentanone	0.270	0.0500	mg/kg wet	0.2500		108	70-130			
Acetone	0.277	0.0500	mg/kg wet	0.2500		111	70-130			
Benzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Bromobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Bromochloromethane	0.0588	0.0050	mg/kg wet	0.05000		118	70-130			
Bromodichloromethane	0.0599	0.0050	mg/kg wet	0.05000		120	70-130			
Bromoform	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Bromomethane	0.0495	0.0100	mg/kg wet	0.05000		99	70-130			
Carbon Disulfide	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Carbon Tetrachloride	0.0606	0.0050	mg/kg wet	0.05000		121	70-130			
Chlorobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Chloroethane	0.0584	0.0100	mg/kg wet	0.05000		117	70-130			
Chloroform	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
Chloromethane	0.0398	0.0100	mg/kg wet	0.05000		80	70-130			
cis-1,2-Dichloroethene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
cis-1,3-Dichloropropene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
Dibromochloromethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
Dibromomethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Dichlorodifluoromethane	0.0532	0.0100	mg/kg wet	0.05000		106	70-130			
Diethyl Ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Di-isopropyl ether	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Ethyl tertiary-butyl ether	0.0578	0.0050	mg/kg wet	0.05000		116	70-130			
Ethylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Hexachlorobutadiene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Isopropylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Methyl tert-Butyl Ether	0.0570	0.0050	mg/kg wet	0.05000		114	70-130			
Methylene Chloride	0.0517	0.0250	mg/kg wet	0.05000		103	70-130			
Naphthalene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
n-Butylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
n-Propylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
sec-Butylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Styrene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
tert-Butylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Tertiary-amyl methyl ether	0.0632	0.0050	mg/kg wet	0.05000		126	70-130			
Tetrachloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Tetrahydrofuran	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1508737

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 CH52614 - 5035

Toluene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,2-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,3-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
Trichloroethene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Trichlorofluoromethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Acetate	0.0735	0.0050	mg/kg wet	0.05000		147	70-130			B+
Vinyl Chloride	0.0445	0.0100	mg/kg wet	0.05000		89	70-130			
Xylene O	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Xylene P,M	0.107	0.0100	mg/kg wet	0.1000		107	70-130			
Xylenes (Total)	0.157	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0548</i>		mg/kg wet	<i>0.05000</i>		<i>110</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0511</i>		mg/kg wet	<i>0.05000</i>		<i>102</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0555</i>		mg/kg wet	<i>0.05000</i>		<i>111</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0523</i>		mg/kg wet	<i>0.05000</i>		<i>105</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	2	25	
1,1,1-Trichloroethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.7	25	
1,1,2-Trichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1-Dichloroethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,1-Dichloroethene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
1,1-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,2,3-Trichlorobenzene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	0.2	25	
1,2,3-Trichloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	4	25	
1,2,4-Trichlorobenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
1,2,4-Trimethylbenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
1,2-Dibromo-3-Chloropropane	0.0619	0.0050	mg/kg wet	0.05000		124	70-130	4	25	
1,2-Dibromoethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	0.9	25	
1,2-Dichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,2-Dichloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
1,2-Dichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,3,5-Trimethylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	0.6	25	
1,3-Dichlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
1,3-Dichloropropane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
1,4-Dichlorobenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	0.6	25	
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130	2	20	
1-Chlorohexane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
2,2-Dichloropropane	0.0631	0.0050	mg/kg wet	0.05000		126	70-130	7	25	
2-Butanone	0.238	0.0500	mg/kg wet	0.2500		95	70-130	9	25	
2-Chlorotoluene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
2-Hexanone	0.272	0.0500	mg/kg wet	0.2500		109	70-130	2	25	
4-Chlorotoluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
4-Isopropyltoluene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	0.6	25	
4-Methyl-2-Pentanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130	8	25	
Acetone	0.253	0.0500	mg/kg wet	0.2500		101	70-130	9	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52614 - 5035

Benzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
Bromobenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
Bromochloromethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	5	25	
Bromodichloromethane	0.0549	0.0050	mg/kg wet	0.05000		110	70-130	9	25	
Bromoform	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	0.9	25	
Bromomethane	0.0465	0.0100	mg/kg wet	0.05000		93	70-130	6	25	
Carbon Disulfide	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
Carbon Tetrachloride	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	5	25	
Chlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Chloroethane	0.0459	0.0100	mg/kg wet	0.05000		92	70-130	24	25	
Chloroform	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Chloromethane	0.0351	0.0100	mg/kg wet	0.05000		70	70-130	13	25	
cis-1,2-Dichloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
cis-1,3-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
Dibromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	0.6	25	
Dibromomethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	9	25	
Dichlorodifluoromethane	0.0487	0.0100	mg/kg wet	0.05000		97	70-130	9	25	
Diethyl Ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	8	25	
Di-isopropyl ether	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	10	25	
Ethyl tertiary-butyl ether	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	7	25	
Ethylbenzene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130	1	25	
Hexachlorobutadiene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.7	25	
Isopropylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	1	25	
Methyl tert-Butyl Ether	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	5	25	
Methylene Chloride	0.0499	0.0250	mg/kg wet	0.05000		100	70-130	4	25	
Naphthalene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	0.6	25	
n-Butylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
n-Propylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.2	25	
sec-Butylbenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	2	25	
Styrene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
tert-Butylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Tertiary-amyl methyl ether	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	9	25	
Tetrachloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	4	25	
Tetrahydrofuran	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
Toluene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
trans-1,2-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
trans-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
Trichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Trichlorofluoromethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	4	25	
Vinyl Acetate	0.0667	0.0050	mg/kg wet	0.05000		133	70-130	10	25	B+
Vinyl Chloride	0.0407	0.0100	mg/kg wet	0.05000		81	70-130	9	25	
Xylene O	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	0.3	25	
Xylene P,M	0.109	0.0100	mg/kg wet	0.1000		109	70-130	2	25	
Xylenes (Total)	0.159	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0519</i>		<i>mg/kg wet</i>	<i>0.05000</i>		<i>104</i>	<i>70-130</i>			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1508737

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 CH52614 - 5035

Surrogate: 4-Bromofluorobenzene	0.0507		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0530		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0535		mg/kg wet	0.05000		107	70-130			

Batch CH52721 - 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

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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 CH52721 - 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	0.0475		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0453		mg/kg wet	0.05000		91	70-130			
Surrogate: Dibromofluoromethane	0.0499		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0535		mg/kg wet	0.05000		107	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,1,1-Trichloroethane	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
1,1,2,2-Tetrachloroethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,2-Trichloroethane	0.0408	0.0050	mg/kg wet	0.05000		82	70-130			
1,1-Dichloroethane	0.0362	0.0050	mg/kg wet	0.05000		72	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52721 - 5035

1,1-Dichloroethene	0.0368	0.0050	mg/kg wet	0.05000		74	70-130			
1,1-Dichloropropene	0.0378	0.0050	mg/kg wet	0.05000		76	70-130			
1,2,3-Trichlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,3-Trichloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,4-Trimethylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dibromo-3-Chloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dibromoethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloroethane	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
1,2-Dichloropropane	0.0385	0.0050	mg/kg wet	0.05000		77	70-130			
1,3,5-Trimethylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
1,4-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,4-Dioxane	1.13	0.100	mg/kg wet	1.000		113	70-130			
1-Chlorohexane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
2,2-Dichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
2-Butanone	0.212	0.0500	mg/kg wet	0.2500		85	70-130			
2-Chlorotoluene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
2-Hexanone	0.296	0.0500	mg/kg wet	0.2500		118	70-130			
4-Chlorotoluene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
4-Isopropyltoluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
4-Methyl-2-Pentanone	0.234	0.0500	mg/kg wet	0.2500		94	70-130			
Acetone	0.286	0.0500	mg/kg wet	0.2500		114	70-130			
Benzene	0.0403	0.0050	mg/kg wet	0.05000		81	70-130			
Bromobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Bromochloromethane	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
Bromodichloromethane	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
Bromoform	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Bromomethane	0.0456	0.0100	mg/kg wet	0.05000		91	70-130			
Carbon Disulfide	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
Carbon Tetrachloride	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
Chlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0654	0.0100	mg/kg wet	0.05000		131	70-130			B+
Chloroform	0.0387	0.0050	mg/kg wet	0.05000		77	70-130			
Chloromethane	0.0377	0.0100	mg/kg wet	0.05000		75	70-130			
cis-1,2-Dichloroethene	0.0388	0.0050	mg/kg wet	0.05000		78	70-130			
cis-1,3-Dichloropropene	0.0402	0.0050	mg/kg wet	0.05000		80	70-130			
Dibromochloromethane	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Dibromomethane	0.0402	0.0050	mg/kg wet	0.05000		80	70-130			
Dichlorodifluoromethane	0.0492	0.0100	mg/kg wet	0.05000		98	70-130			
Diethyl Ether	0.0358	0.0050	mg/kg wet	0.05000		72	70-130			
Di-isopropyl ether	0.0383	0.0050	mg/kg wet	0.05000		77	70-130			
Ethyl tertiary-butyl ether	0.0403	0.0050	mg/kg wet	0.05000		81	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.

Client Project ID: Textron Providence

ESS Laboratory Work Order: 1508737

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 CH52721 - 5035

Ethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Hexachlorobutadiene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Isopropylbenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Methyl tert-Butyl Ether	0.0376	0.0050	mg/kg wet	0.05000		75	70-130			
Methylene Chloride	0.0474	0.0250	mg/kg wet	0.05000		95	70-130			
Naphthalene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
n-Butylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
n-Propylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
tert-Butylbenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Tertiary-amyl methyl ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrachloroethene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrahydrofuran	0.0372	0.0050	mg/kg wet	0.05000		74	70-130			
Toluene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0372	0.0050	mg/kg wet	0.05000		74	70-130			
trans-1,3-Dichloropropene	0.0409	0.0050	mg/kg wet	0.05000		82	70-130			
Trichloroethene	0.0390	0.0050	mg/kg wet	0.05000		78	70-130			
Trichlorofluoromethane	0.0378	0.0050	mg/kg wet	0.05000		76	70-130			
Vinyl Acetate	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Vinyl Chloride	0.0368	0.0100	mg/kg wet	0.05000		74	70-130			
Xylene O	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Xylene P,M	0.105	0.0100	mg/kg wet	0.1000		105	70-130			
Xylenes (Total)	0.154	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0357</i>		mg/kg wet	<i>0.05000</i>		<i>71</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0478</i>		mg/kg wet	<i>0.05000</i>		<i>96</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0372</i>		mg/kg wet	<i>0.05000</i>		<i>74</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0433</i>		mg/kg wet	<i>0.05000</i>		<i>87</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	11	25	
1,1,1-Trichloroethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	19	25	
1,1,2,2-Tetrachloroethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
1,1,2-Trichloroethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	11	25	
1,1-Dichloroethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	19	25	
1,1-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	25	25	
1,1-Dichloropropene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	21	25	
1,2,3-Trichlorobenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
1,2,3-Trichloropropane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
1,2,4-Trichlorobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,2,4-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
1,2-Dibromo-3-Chloropropane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	2	25	
1,2-Dibromoethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	11	25	
1,2-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	0.2	25	
1,2-Dichloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	13	25	
1,2-Dichloropropane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	16	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52721 - 5035										
1,3,5-Trimethylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
1,3-Dichlorobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	18	25	
1,4-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.04	25	
1,4-Dioxane	0.942	0.100	mg/kg wet	1.000		94	70-130	18	20	
1-Chlorohexane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
2,2-Dichloropropane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130	19	25	
2-Butanone	0.216	0.0500	mg/kg wet	0.2500		86	70-130	2	25	
2-Chlorotoluene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
2-Hexanone	0.232	0.0500	mg/kg wet	0.2500		93	70-130	24	25	
4-Chlorotoluene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
4-Isopropyltoluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.8	25	
4-Methyl-2-Pentanone	0.222	0.0500	mg/kg wet	0.2500		89	70-130	6	25	
Acetone	0.212	0.0500	mg/kg wet	0.2500		85	70-130	30	25	D+
Benzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	11	25	
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.9	25	
Bromochloromethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	15	25	
Bromodichloromethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	18	25	
Bromoform	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Bromomethane	0.0407	0.0100	mg/kg wet	0.05000		81	70-130	11	25	
Carbon Disulfide	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
Carbon Tetrachloride	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	21	25	
Chlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	0.6	25	
Chloroethane	0.0559	0.0100	mg/kg wet	0.05000		112	70-130	16	25	
Chloroform	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	17	25	
Chloromethane	0.0322	0.0100	mg/kg wet	0.05000		64	70-130	16	25	B-
cis-1,2-Dichloroethene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	19	25	
cis-1,3-Dichloropropene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	19	25	
Dibromochloromethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	16	25	
Dibromomethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	10	25	
Dichlorodifluoromethane	0.0453	0.0100	mg/kg wet	0.05000		91	70-130	8	25	
Diethyl Ether	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	27	25	D+
Di-isopropyl ether	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	18	25	
Ethyl tertiary-butyl ether	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	26	25	D+
Ethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Hexachlorobutadiene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
Isopropylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Methyl tert-Butyl Ether	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	30	25	D+
Methylene Chloride	0.0463	0.0250	mg/kg wet	0.05000		93	70-130	2	25	
Naphthalene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	6	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
n-Propylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
sec-Butylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Styrene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
tert-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52721 - 5035

Tertiary-amyl methyl ether	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	19	25	
Tetrachloroethene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
Tetrahydrofuran	0.0422	0.0050	mg/kg wet	0.05000		84	70-130	13	25	
Toluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
trans-1,2-Dichloroethene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	24	25	
trans-1,3-Dichloropropene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130	7	25	
Trichloroethene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	16	25	
Trichlorofluoromethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	20	25	
Vinyl Acetate	0.0638	0.0050	mg/kg wet	0.05000		128	70-130	28	25	D+
Vinyl Chloride	0.0336	0.0100	mg/kg wet	0.05000		67	70-130	9	25	B-
Xylene O	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130	4	25	
Xylenes (Total)	0.148	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0417</i>		mg/kg wet	<i>0.05000</i>		<i>83</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0456</i>		mg/kg wet	<i>0.05000</i>		<i>91</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0438</i>		mg/kg wet	<i>0.05000</i>		<i>88</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0457</i>		mg/kg wet	<i>0.05000</i>		<i>91</i>	<i>70-130</i>			

8100M Total Petroleum Hydrocarbons

Batch CH52610 - 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							

<i>Surrogate: O-Terphenyl</i>	<i>3.94</i>		mg/kg wet	<i>5.000</i>		<i>79</i>	<i>40-140</i>			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		102	40-140			
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		99	40-140			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1508737

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CH52610 - 3546										
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		97	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		96	40-140			
Total Petroleum Hydrocarbons	32.9	37.5	mg/kg wet	35.00		94	40-140			
Triacosane (C30)	2.5	0.2	mg/kg wet	2.500		99	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>4.24</i>		mg/kg wet	<i>5.000</i>		<i>85</i>	<i>40-140</i>			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	3	25	
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140	2	25	
Dodecane (C12)	2.2	0.2	mg/kg wet	2.500		89	40-140	2	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140	2	25	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		103	40-140	2	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		101	40-140	1	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		99	40-140	0.2	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140	3	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		101	40-140	2	25	
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140	0.3	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		96	40-140	2	25	
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	
Total Petroleum Hydrocarbons	33.0	37.5	mg/kg wet	35.00		94	40-140	0.3	25	
Triacosane (C30)	2.5	0.2	mg/kg wet	2.500		101	40-140	2	25	
<i>Surrogate: O-Terphenyl</i>	<i>4.15</i>		mg/kg wet	<i>5.000</i>		<i>83</i>	<i>40-140</i>			
Batch CH52611 - 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							
Triacosane (C30)	ND	0.2	mg/kg wet							
<i>Surrogate: O-Terphenyl</i>	<i>4.87</i>		mg/kg wet	<i>5.000</i>		<i>97</i>	<i>40-140</i>			
LCS										



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52611 - 3546

Decane (C10)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Dodecane (C12)	2.6	0.2	mg/kg wet	2.500		102	40-140			
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Hexacosane (C26)	3.0	0.2	mg/kg wet	2.500		119	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Nonane (C9)	2.1	0.2	mg/kg wet	2.500		82	30-140			
Octacosane (C28)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		113	40-140			
Tetracosane (C24)	2.8	0.2	mg/kg wet	2.500		110	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Total Petroleum Hydrocarbons	38.2	37.5	mg/kg wet	35.00		109	40-140			
Triacontane (C30)	3.0	0.2	mg/kg wet	2.500		119	40-140			

<i>Surrogate: O-Terphenyl</i>	4.72		mg/kg wet	5.000		94	40-140			
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LCS Dup

Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140	13	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		105	40-140	10	25	
Dodecane (C12)	2.2	0.2	mg/kg wet	2.500		90	40-140	13	25	
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		103	40-140	11	25	
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		108	40-140	10	25	
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		96	40-140	11	25	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		104	40-140	11	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140	12	25	
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		106	40-140	9	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		100	40-140	12	25	
Tetracosane (C24)	2.5	0.2	mg/kg wet	2.500		100	40-140	10	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		89	40-140	15	25	
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140	10	25	
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		109	40-140	9	25	

<i>Surrogate: O-Terphenyl</i>	4.18		mg/kg wet	5.000		84	40-140			
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8270D Semi-Volatile Organic Compounds

Batch CH52513 - 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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CH52513 - 3546

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
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



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8270D Semi-Volatile Organic Compounds

Batch CH52513 - 3546

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							
Surrogate: 1,2-Dichlorobenzene-d4	1.88		mg/kg wet	3.333		56	30-130			
Surrogate: 2,4,6-Tribromophenol	2.96		mg/kg wet	5.000		59	30-130			
Surrogate: 2-Chlorophenol-d4	3.00		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	1.96		mg/kg wet	3.333		59	30-130			
Surrogate: 2-Fluorophenol	3.04		mg/kg wet	5.000		61	30-130			
Surrogate: Nitrobenzene-d5	1.94		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	2.86		mg/kg wet	3.333		86	30-130			

LCS

1,1-Biphenyl	2.25	0.333	mg/kg wet	3.333		68	40-140			
1,2,4-Trichlorobenzene	2.02	0.333	mg/kg wet	3.333		61	40-140			
1,2-Dichlorobenzene	1.83	0.333	mg/kg wet	3.333		55	40-140			
1,3-Dichlorobenzene	1.88	0.333	mg/kg wet	3.333		56	40-140			
1,4-Dichlorobenzene	1.81	0.333	mg/kg wet	3.333		54	40-140			
2,3,4,6-Tetrachlorophenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
2,4,5-Trichlorophenol	2.65	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.68	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dichlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130			
2,4-Dimethylphenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
2,4-Dinitrophenol	1.76	1.67	mg/kg wet	3.333		53	30-130			
2,4-Dinitrotoluene	2.66	0.333	mg/kg wet	3.333		80	40-140			
2,6-Dinitrotoluene	2.44	0.333	mg/kg wet	3.333		73	40-140			
2-Chloronaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Chlorophenol	2.00	0.333	mg/kg wet	3.333		60	30-130			
2-Methylnaphthalene	2.00	0.333	mg/kg wet	3.333		60	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 CH52513 - 3546

2-Methylphenol	2.10	0.333	mg/kg wet	3.333		63	30-130			
2-Nitroaniline	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Nitrophenol	2.03	0.333	mg/kg wet	3.333		61	30-130			
3,3'-Dichlorobenzidine	2.41	0.667	mg/kg wet	3.333		72	40-140			
3+4-Methylphenol	4.11	0.667	mg/kg wet	6.667		62	30-130			
3-Nitroaniline	2.33	0.333	mg/kg wet	3.333		70	40-140			
4,6-Dinitro-2-Methylphenol	2.33	1.67	mg/kg wet	3.333		70	30-130			
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140			
4-Chloro-3-Methylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
4-Chloroaniline	2.20	0.667	mg/kg wet	3.333		66	40-140			
4-Chloro-phenyl-phenyl ether	2.45	0.333	mg/kg wet	3.333		73	40-140			
4-Nitroaniline	2.55	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	2.20	0.333	mg/kg wet	3.333		66	40-140			
Acenaphthylene	2.20	0.333	mg/kg wet	3.333		66	40-140			
Acetophenone	2.05	0.667	mg/kg wet	3.333		61	40-140			
Aniline	1.89	0.667	mg/kg wet	3.333		57	40-140			
Anthracene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Azobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Benzo(a)anthracene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)pyrene	2.67	0.167	mg/kg wet	3.333		80	40-140			
Benzo(b)fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzo(g,h,i)perylene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Benzo(k)fluoranthene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Benzoic Acid	1.16	1.67	mg/kg wet	3.333		35	40-140			B-
Benzyl Alcohol	2.04	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Chloroethoxy)methane	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Chloroethyl)ether	2.02	0.333	mg/kg wet	3.333		61	40-140			
bis(2-chloroisopropyl)Ether	1.84	0.333	mg/kg wet	3.333		55	40-140			
bis(2-Ethylhexyl)phthalate	3.35	0.333	mg/kg wet	3.333		101	40-140			
Butylbenzylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Carbazole	2.83	0.333	mg/kg wet	3.333		85	40-140			
Chrysene	2.65	0.167	mg/kg wet	3.333		80	40-140			
Dibenzo(a,h)Anthracene	2.72	0.167	mg/kg wet	3.333		82	40-140			
Dibenzofuran	2.29	0.333	mg/kg wet	3.333		69	40-140			
Diethylphthalate	2.58	0.333	mg/kg wet	3.333		77	40-140			
Dimethylphthalate	2.40	0.333	mg/kg wet	3.333		72	40-140			
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140			
Di-n-octylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140			
Fluoranthene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Fluorene	2.34	0.333	mg/kg wet	3.333		70	40-140			
Hexachlorobenzene	2.53	0.167	mg/kg wet	3.333		76	40-140			
Hexachlorobutadiene	1.88	0.333	mg/kg wet	3.333		56	40-140			
Hexachlorocyclopentadiene	1.85	1.67	mg/kg wet	3.333		56	40-140			
Hexachloroethane	1.78	0.333	mg/kg wet	3.333		53	40-140			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CH52513 - 3546

Indeno(1,2,3-cd)Pyrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Isophorone	2.16	0.333	mg/kg wet	3.333		65	40-140			
Naphthalene	1.99	0.333	mg/kg wet	3.333		60	40-140			
Nitrobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140			
N-Nitrosodimethylamine	1.67	0.333	mg/kg wet	3.333		50	40-140			
N-Nitroso-Di-n-Propylamine	1.96	0.333	mg/kg wet	3.333		59	40-140			
N-nitrosodiphenylamine	2.66	0.333	mg/kg wet	3.333		80	40-140			
Pentachlorophenol	2.53	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.47	0.333	mg/kg wet	3.333		74	40-140			
Phenol	1.98	0.333	mg/kg wet	3.333		59	30-130			
Pyrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Pyridine	1.41	1.67	mg/kg wet	3.333		42	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	1.77		mg/kg wet	3.333		53	30-130			
Surrogate: 2,4,6-Tribromophenol	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	2.92		mg/kg wet	5.000		58	30-130			
Surrogate: 2-Fluorobiphenyl	2.17		mg/kg wet	3.333		65	30-130			
Surrogate: 2-Fluorophenol	2.87		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	1.96		mg/kg wet	3.333		59	30-130			
Surrogate: Phenol-d6	3.03		mg/kg wet	5.000		61	30-130			
Surrogate: p-Terphenyl-d14	2.79		mg/kg wet	3.333		84	30-130			

LCS Dup

1,1-Biphenyl	2.24	0.333	mg/kg wet	3.333		67	40-140	0.4	30	
1,2,4-Trichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	2	30	
1,2-Dichlorobenzene	1.90	0.333	mg/kg wet	3.333		57	40-140	4	30	
1,3-Dichlorobenzene	1.95	0.333	mg/kg wet	3.333		59	40-140	4	30	
1,4-Dichlorobenzene	1.87	0.333	mg/kg wet	3.333		56	40-140	4	30	
2,3,4,6-Tetrachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	5	30	
2,4,5-Trichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	1	30	
2,4,6-Trichlorophenol	2.69	0.333	mg/kg wet	3.333		81	30-130	0.4	30	
2,4-Dichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130	5	30	
2,4-Dimethylphenol	2.42	0.333	mg/kg wet	3.333		73	30-130	3	30	
2,4-Dinitrophenol	1.88	1.67	mg/kg wet	3.333		57	30-130	7	30	
2,4-Dinitrotoluene	2.76	0.333	mg/kg wet	3.333		83	40-140	4	30	
2,6-Dinitrotoluene	2.53	0.333	mg/kg wet	3.333		76	40-140	4	30	
2-Chloronaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140	0.09	30	
2-Chlorophenol	2.11	0.333	mg/kg wet	3.333		63	30-130	5	30	
2-Methylnaphthalene	2.08	0.333	mg/kg wet	3.333		62	40-140	4	30	
2-Methylphenol	2.27	0.333	mg/kg wet	3.333		68	30-130	8	30	
2-Nitroaniline	2.24	0.333	mg/kg wet	3.333		67	40-140	4	30	
2-Nitrophenol	2.11	0.333	mg/kg wet	3.333		63	30-130	4	30	
3,3'-Dichlorobenzidine	2.19	0.667	mg/kg wet	3.333		66	40-140	9	30	
3+4-Methylphenol	4.42	0.667	mg/kg wet	6.667		66	30-130	7	30	
3-Nitroaniline	2.41	0.333	mg/kg wet	3.333		72	40-140	3	30	
4,6-Dinitro-2-Methylphenol	2.42	1.67	mg/kg wet	3.333		73	30-130	4	30	
4-Bromophenyl-phenylether	2.63	0.333	mg/kg wet	3.333		79	40-140	0.2	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52513 - 3546

4-Chloro-3-Methylphenol	2.56	0.333	mg/kg wet	3.333		77	30-130	7	30	
4-Chloroaniline	2.22	0.667	mg/kg wet	3.333		67	40-140	0.9	30	
4-Chloro-phenyl-phenyl ether	2.50	0.333	mg/kg wet	3.333		75	40-140	2	30	
4-Nitroaniline	2.61	0.333	mg/kg wet	3.333		78	40-140	3	30	
4-Nitrophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	6	30	
Acenaphthene	2.23	0.333	mg/kg wet	3.333		67	40-140	1	30	
Acenaphthylene	2.23	0.333	mg/kg wet	3.333		67	40-140	2	30	
Acetophenone	2.17	0.667	mg/kg wet	3.333		65	40-140	6	30	
Aniline	1.91	0.667	mg/kg wet	3.333		57	40-140	1	30	
Anthracene	2.61	0.333	mg/kg wet	3.333		78	40-140	0.6	30	
Azobenzene	2.58	0.333	mg/kg wet	3.333		78	40-140	2	30	
Benzo(a)anthracene	2.68	0.333	mg/kg wet	3.333		80	40-140	0.2	30	
Benzo(a)pyrene	2.68	0.167	mg/kg wet	3.333		80	40-140	0.2	30	
Benzo(b)fluoranthene	2.68	0.333	mg/kg wet	3.333		80	40-140	0.2	30	
Benzo(g,h,i)perylene	2.47	0.333	mg/kg wet	3.333		74	40-140	2	30	
Benzo(k)fluoranthene	2.62	0.333	mg/kg wet	3.333		79	40-140	0.9	30	
Benzoic Acid	1.50	1.67	mg/kg wet	3.333		45	40-140	25	30	
Benzyl Alcohol	1.98	0.333	mg/kg wet	3.333		59	40-140	3	30	
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140	1	30	
bis(2-Chloroethyl)ether	2.10	0.333	mg/kg wet	3.333		63	40-140	4	30	
bis(2-chloroisopropyl)Ether	1.93	0.333	mg/kg wet	3.333		58	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.19	0.333	mg/kg wet	3.333		96	40-140	5	30	
Butylbenzylphthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Carbazole	2.90	0.333	mg/kg wet	3.333		87	40-140	3	30	
Chrysene	2.64	0.167	mg/kg wet	3.333		79	40-140	0.6	30	
Dibenzo(a,h)Anthracene	2.63	0.167	mg/kg wet	3.333		79	40-140	4	30	
Dibenzofuran	2.37	0.333	mg/kg wet	3.333		71	40-140	3	30	
Diethylphthalate	2.63	0.333	mg/kg wet	3.333		79	40-140	2	30	
Dimethylphthalate	2.46	0.333	mg/kg wet	3.333		74	40-140	3	30	
Di-n-butylphthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	2	30	
Di-n-octylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140	2	30	
Fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	3	30	
Fluorene	2.41	0.333	mg/kg wet	3.333		72	40-140	3	30	
Hexachlorobenzene	2.50	0.167	mg/kg wet	3.333		75	40-140	1	30	
Hexachlorobutadiene	1.92	0.333	mg/kg wet	3.333		58	40-140	2	30	
Hexachlorocyclopentadiene	1.75	1.67	mg/kg wet	3.333		52	40-140	6	30	
Hexachloroethane	1.81	0.333	mg/kg wet	3.333		54	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.60	0.333	mg/kg wet	3.333		78	40-140	1	30	
Isophorone	2.23	0.333	mg/kg wet	3.333		67	40-140	3	30	
Naphthalene	2.06	0.333	mg/kg wet	3.333		62	40-140	4	30	
Nitrobenzene	2.15	0.333	mg/kg wet	3.333		65	40-140	2	30	
N-Nitrosodimethylamine	1.69	0.333	mg/kg wet	3.333		51	40-140	1	30	
N-Nitroso-Di-n-Propylamine	2.10	0.333	mg/kg wet	3.333		63	40-140	7	30	
N-nitrosodiphenylamine	2.69	0.333	mg/kg wet	3.333		81	40-140	1	30	
Pentachlorophenol	2.55	1.67	mg/kg wet	3.333		77	30-130	0.7	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52513 - 3546

Phenanthrene	2.52	0.333	mg/kg wet	3.333		75	40-140	2	30	
Phenol	2.11	0.333	mg/kg wet	3.333		63	30-130	6	30	
Pyrene	2.63	0.333	mg/kg wet	3.333		79	40-140	0.06	30	
Pyridine	1.53	1.67	mg/kg wet	3.333		46	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.76		mg/kg wet	3.333		53	30-130			
Surrogate: 2,4,6-Tribromophenol	3.43		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Chlorophenol-d4	2.95		mg/kg wet	5.000		59	30-130			
Surrogate: 2-Fluorobiphenyl	2.05		mg/kg wet	3.333		62	30-130			
Surrogate: 2-Fluorophenol	2.86		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: Phenol-d6	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: p-Terphenyl-d14	2.65		mg/kg wet	3.333		80	30-130			

Batch CH52613 - 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							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							



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8270D Semi-Volatile Organic Compounds

Batch CH52613 - 3546

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							
Surrogate: 1,2-Dichlorobenzene-d4	2.38		mg/kg wet	3.333		71	30-130			
Surrogate: 2,4,6-Tribromophenol	3.45		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Chlorophenol-d4	3.74		mg/kg wet	5.000		75	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.

Client Project ID: Textron Providence

ESS Laboratory Work Order: 1508737

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 CH52613 - 3546

Surrogate: 2-Fluorobiphenyl	2.45		mg/kg wet	3.333		73	30-130			
Surrogate: 2-Fluorophenol	3.74		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.40		mg/kg wet	3.333		72	30-130			
Surrogate: Phenol-d6	3.86		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.42		mg/kg wet	3.333		103	30-130			

LCS

1,1-Biphenyl	2.84	0.333	mg/kg wet	3.333		85	40-140			
1,2,4-Trichlorobenzene	2.79	0.333	mg/kg wet	3.333		84	40-140			
1,2-Dichlorobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.66	0.333	mg/kg wet	3.333		80	40-140			
1,4-Dichlorobenzene	2.57	0.333	mg/kg wet	3.333		77	40-140			
2,3,4,6-Tetrachlorophenol	2.87	1.67	mg/kg wet	3.333		86	30-130			
2,4,5-Trichlorophenol	3.32	0.333	mg/kg wet	3.333		100	30-130			
2,4,6-Trichlorophenol	3.38	0.333	mg/kg wet	3.333		102	30-130			
2,4-Dichlorophenol	3.00	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dimethylphenol	3.02	0.333	mg/kg wet	3.333		91	30-130			
2,4-Dinitrophenol	2.73	1.67	mg/kg wet	3.333		82	30-130			
2,4-Dinitrotoluene	3.28	0.333	mg/kg wet	3.333		98	40-140			
2,6-Dinitrotoluene	3.08	0.333	mg/kg wet	3.333		92	40-140			
2-Chloronaphthalene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2-Chlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130			
2-Methylnaphthalene	2.68	0.333	mg/kg wet	3.333		80	40-140			
2-Methylphenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
2-Nitroaniline	2.69	0.333	mg/kg wet	3.333		81	40-140			
2-Nitrophenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
3,3'-Dichlorobenzidine	2.70	0.667	mg/kg wet	3.333		81	40-140			
3+4-Methylphenol	5.65	0.667	mg/kg wet	6.667		85	30-130			
3-Nitroaniline	2.91	0.333	mg/kg wet	3.333		87	40-140			
4,6-Dinitro-2-Methylphenol	3.03	1.67	mg/kg wet	3.333		91	30-130			
4-Bromophenyl-phenylether	3.18	0.333	mg/kg wet	3.333		95	40-140			
4-Chloro-3-Methylphenol	3.11	0.333	mg/kg wet	3.333		93	30-130			
4-Chloroaniline	2.84	0.667	mg/kg wet	3.333		85	40-140			
4-Chloro-phenyl-phenyl ether	3.04	0.333	mg/kg wet	3.333		91	40-140			
4-Nitroaniline	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Nitrophenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
Acenaphthene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Acenaphthylene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Acetophenone	2.83	0.667	mg/kg wet	3.333		85	40-140			
Aniline	2.35	0.667	mg/kg wet	3.333		71	40-140			
Anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Benzo(a)anthracene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Benzo(a)pyrene	3.29	0.167	mg/kg wet	3.333		99	40-140			
Benzo(b)fluoranthene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Benzo(g,h,i)perylene	3.14	0.333	mg/kg wet	3.333		94	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CH52613 - 3546										
Benzo(k)fluoranthene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Benzoic Acid	2.72	1.67	mg/kg wet	3.333		81	40-140			
Benzyl Alcohol	2.64	0.333	mg/kg wet	3.333		79	40-140			
bis(2-Chloroethoxy)methane	2.92	0.333	mg/kg wet	3.333		88	40-140			
bis(2-Chloroethyl)ether	2.62	0.333	mg/kg wet	3.333		79	40-140			
bis(2-chloroisopropyl)Ether	2.55	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Ethylhexyl)phthalate	3.53	0.333	mg/kg wet	3.333		106	40-140			
Butylbenzylphthalate	3.39	0.333	mg/kg wet	3.333		102	40-140			
Carbazole	3.36	0.333	mg/kg wet	3.333		101	40-140			
Chrysene	3.22	0.167	mg/kg wet	3.333		96	40-140			
Dibenzo(a,h)Anthracene	3.30	0.167	mg/kg wet	3.333		99	40-140			
Dibenzofuran	2.92	0.333	mg/kg wet	3.333		88	40-140			
Diethylphthalate	3.05	0.333	mg/kg wet	3.333		92	40-140			
Dimethylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-butylphthalate	3.38	0.333	mg/kg wet	3.333		101	40-140			
Di-n-octylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			
Fluoranthene	3.36	0.333	mg/kg wet	3.333		101	40-140			
Fluorene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Hexachlorobenzene	3.01	0.167	mg/kg wet	3.333		90	40-140			
Hexachlorobutadiene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorocyclopentadiene	2.37	1.67	mg/kg wet	3.333		71	40-140			
Hexachloroethane	2.47	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	3.23	0.333	mg/kg wet	3.333		97	40-140			
Isophorone	2.73	0.333	mg/kg wet	3.333		82	40-140			
Naphthalene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Nitrobenzene	2.76	0.333	mg/kg wet	3.333		83	40-140			
N-Nitrosodimethylamine	2.22	0.333	mg/kg wet	3.333		67	40-140			
N-Nitroso-Di-n-Propylamine	2.60	0.333	mg/kg wet	3.333		78	40-140			
N-nitrosodiphenylamine	3.11	0.333	mg/kg wet	3.333		93	40-140			
Pentachlorophenol	3.00	1.67	mg/kg wet	3.333		90	30-130			
Phenanthrene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Phenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
Pyrene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Pyridine	2.00	1.67	mg/kg wet	3.333		60	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.50		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.27		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Chlorophenol-d4	3.96		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Fluorobiphenyl	2.72		mg/kg wet	3.333		81	30-130			
Surrogate: 2-Fluorophenol	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: Nitrobenzene-d5	2.61		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	4.05		mg/kg wet	5.000		81	30-130			
Surrogate: p-Terphenyl-d14	3.22		mg/kg wet	3.333		96	30-130			
LCS Dup										
1,1-Biphenyl	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
1,2,4-Trichlorobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140	13	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CH52613 - 3546										
1,2-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	14	30	
1,3-Dichlorobenzene	2.29	0.333	mg/kg wet	3.333		69	40-140	15	30	
1,4-Dichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	15	30	
2,3,4,6-Tetrachlorophenol	2.72	1.67	mg/kg wet	3.333		82	30-130	5	30	
2,4,5-Trichlorophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	8	30	
2,4,6-Trichlorophenol	3.07	0.333	mg/kg wet	3.333		92	30-130	10	30	
2,4-Dichlorophenol	2.71	0.333	mg/kg wet	3.333		81	30-130	10	30	
2,4-Dimethylphenol	2.71	0.333	mg/kg wet	3.333		81	30-130	11	30	
2,4-Dinitrophenol	2.58	1.67	mg/kg wet	3.333		77	30-130	5	30	
2,4-Dinitrotoluene	3.08	0.333	mg/kg wet	3.333		92	40-140	6	30	
2,6-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
2-Chloronaphthalene	2.47	0.333	mg/kg wet	3.333		74	40-140	10	30	
2-Chlorophenol	2.45	0.333	mg/kg wet	3.333		74	30-130	12	30	
2-Methylnaphthalene	2.40	0.333	mg/kg wet	3.333		72	40-140	11	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	11	30	
2-Nitroaniline	2.44	0.333	mg/kg wet	3.333		73	40-140	10	30	
2-Nitrophenol	2.42	0.333	mg/kg wet	3.333		73	30-130	13	30	
3,3'-Dichlorobenzidine	2.69	0.667	mg/kg wet	3.333		81	40-140	0.02	30	
3+4-Methylphenol	5.07	0.667	mg/kg wet	6.667		76	30-130	11	30	
3-Nitroaniline	2.70	0.333	mg/kg wet	3.333		81	40-140	7	30	
4,6-Dinitro-2-Methylphenol	2.90	1.67	mg/kg wet	3.333		87	30-130	4	30	
4-Bromophenyl-phenylether	2.98	0.333	mg/kg wet	3.333		89	40-140	6	30	
4-Chloro-3-Methylphenol	2.84	0.333	mg/kg wet	3.333		85	30-130	9	30	
4-Chloroaniline	2.64	0.667	mg/kg wet	3.333		79	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.81	0.333	mg/kg wet	3.333		84	40-140	8	30	
4-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140	3	30	
4-Nitrophenol	2.65	1.67	mg/kg wet	3.333		79	30-130	7	30	
Acenaphthene	2.55	0.333	mg/kg wet	3.333		76	40-140	9	30	
Acenaphthylene	2.54	0.333	mg/kg wet	3.333		76	40-140	10	30	
Acetophenone	2.49	0.667	mg/kg wet	3.333		75	40-140	13	30	
Aniline	2.14	0.667	mg/kg wet	3.333		64	40-140	10	30	
Anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140	5	30	
Azobenzene	2.78	0.333	mg/kg wet	3.333		83	40-140	8	30	
Benzo(a)anthracene	3.01	0.333	mg/kg wet	3.333		90	40-140	6	30	
Benzo(a)pyrene	3.09	0.167	mg/kg wet	3.333		93	40-140	6	30	
Benzo(b)fluoranthene	3.10	0.333	mg/kg wet	3.333		93	40-140	2	30	
Benzo(g,h,i)perylene	2.99	0.333	mg/kg wet	3.333		90	40-140	5	30	
Benzo(k)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140	6	30	
Benzoic Acid	2.48	1.67	mg/kg wet	3.333		74	40-140	9	30	
Benzyl Alcohol	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
bis(2-Chloroethoxy)methane	2.61	0.333	mg/kg wet	3.333		78	40-140	11	30	
bis(2-Chloroethyl)ether	2.29	0.333	mg/kg wet	3.333		69	40-140	13	30	
bis(2-chloroisopropyl)Ether	2.24	0.333	mg/kg wet	3.333		67	40-140	13	30	
bis(2-Ethylhexyl)phthalate	3.40	0.333	mg/kg wet	3.333		102	40-140	4	30	
Butylbenzylphthalate	3.24	0.333	mg/kg wet	3.333		97	40-140	4	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1508737

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 CH52613 - 3546

Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140	5	30	
Chrysene	3.05	0.167	mg/kg wet	3.333		92	40-140	5	30	
Dibenzo(a,h)Anthracene	3.16	0.167	mg/kg wet	3.333		95	40-140	4	30	
Dibenzofuran	2.67	0.333	mg/kg wet	3.333		80	40-140	9	30	
Diethylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140	6	30	
Dimethylphthalate	2.73	0.333	mg/kg wet	3.333		82	40-140	7	30	
Di-n-butylphthalate	3.22	0.333	mg/kg wet	3.333		97	40-140	5	30	
Di-n-octylphthalate	3.05	0.333	mg/kg wet	3.333		92	40-140	3	30	
Fluoranthene	3.18	0.333	mg/kg wet	3.333		95	40-140	5	30	
Fluorene	2.72	0.333	mg/kg wet	3.333		82	40-140	9	30	
Hexachlorobenzene	2.82	0.167	mg/kg wet	3.333		85	40-140	7	30	
Hexachlorobutadiene	2.32	0.333	mg/kg wet	3.333		70	40-140	14	30	
Hexachlorocyclopentadiene	2.05	1.67	mg/kg wet	3.333		62	40-140	14	30	
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140	15	30	
Indeno(1,2,3-cd)Pyrene	3.07	0.333	mg/kg wet	3.333		92	40-140	5	30	
Isophorone	2.45	0.333	mg/kg wet	3.333		74	40-140	11	30	
Naphthalene	2.40	0.333	mg/kg wet	3.333		72	40-140	13	30	
Nitrobenzene	2.41	0.333	mg/kg wet	3.333		72	40-140	13	30	
N-Nitrosodimethylamine	1.98	0.333	mg/kg wet	3.333		60	40-140	11	30	
N-Nitroso-Di-n-Propylamine	2.33	0.333	mg/kg wet	3.333		70	40-140	11	30	
N-nitrosodiphenylamine	2.91	0.333	mg/kg wet	3.333		87	40-140	7	30	
Pentachlorophenol	2.85	1.67	mg/kg wet	3.333		85	30-130	5	30	
Phenanthrene	2.75	0.333	mg/kg wet	3.333		83	40-140	6	30	
Phenol	2.36	0.333	mg/kg wet	3.333		71	30-130	10	30	
Pyrene	2.93	0.333	mg/kg wet	3.333		88	40-140	5	30	
Pyridine	1.65	1.67	mg/kg wet	3.333		49	40-140	19	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.11		mg/kg wet	3.333		63	30-130			
Surrogate: 2,4,6-Tribromophenol	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Chlorophenol-d4	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.40		mg/kg wet	3.333		72	30-130			
Surrogate: 2-Fluorophenol	3.33		mg/kg wet	5.000		67	30-130			
Surrogate: Nitrobenzene-d5	2.20		mg/kg wet	3.333		66	30-130			
Surrogate: Phenol-d6	3.54		mg/kg wet	5.000		71	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: 1508737

Notes and Definitions

- Z-10a Soil pH measured in water at 24.4 °C.
- Z-10 Soil pH measured in water at 24.3 °C.
- U Analyte included in the analysis, but not detected
- S+ Surrogate recovery(ies) above upper control limit (S+).
- Q Calibration required quadratic regression (Q).
- ICV- Initial Calibration Verification recovery is below lower control limit (ICV-).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- I Internal Standard(s) outside of criteria (I).
- 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: 1508737

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: _____ *WR 8/26/15*
 Shipped/Delivered Via: Client *Other*

ESS Project ID: 15080737
 Date Project Due: 9/1/15
 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.: | <i>WR 8/26/15</i> | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <i>YES</i> <input checked="" type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> Yes | 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: 9.8"/> | | 16. Are ESS labels on correct containers? | <input 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 @ 1801 JL 8/25/15

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
4	Yes	40 ml - VOA	1	MeOH
4	Yes	40 ml - VOA	2	other
4	Yes	8 oz Soil Jar	2	NP
5	Yes	40 ml - VOA	1	MeOH
5	Yes	40 ml - VOA	2	other
5	Yes	8 oz Soil Jar	2	NP
6	Yes	40 ml - VOA	1	MeOH
6	Yes	40 ml - VOA	2	other
6	Yes	8 oz Soil Jar	2	NP
7	Yes	40 ml - VOA	1	MeOH
7	Yes	40 ml - VOA	2	other
7	Yes	8 oz Soil Jar	2	NP
8	Yes	40 ml - VOA	1	MeOH
8	Yes	40 ml - VOA	2	other
8	Yes	8 oz Soil Jar	2	NP
9	Yes	40 ml - VOA	1	MeOH

Sample and Cooler Receipt Checklist

Client: Charter Environmental

ESS Project ID: 15080737

9 Yes
9 Yes

40 ml - VOA 2
8 oz Soil Jar 2

other
NP

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

Date/Time: 8/25/15 1821
Date/Time: 8/26/15 0735

CUSTODY SEAL



Date: 8-25-15

Signature: [Signature]

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 # **1508737**

Reporting Limits **RI DEM RDEC**

Turn Time **5** Days
 Regulatory State **Rhode Island**

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

Electronic Deliverables Data Checker Excel Other (Please Specify →)

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** PO #

City **Boston** State **MA** Zip Code **02118**

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

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	VOC Low Level	SVOC	RCRA 8	TPH
1	8/24/15	3:00	Grab	Soil	Material S+S Sandy Fill A	X	X	X	X	X
2	8/24/15	3:20	Grab	Soil	Material S+S Sandy Fill B	X	X	X	X	X
3	8/24/15	3:40	Grab	Soil	Material S+S Sandy Fill C	X	X	X	X	X
4	8/24/15	3:50	Grab	Soil	Material S+S Sandy Fill D	X	X	X	X	X
5	8/24/15	4:00	Grab	Soil	Material S+S Sandy Fill E	X	X	X	X	X
06	8/24/15	4:10	Grab	Soil	Material S+S Topsoil A	X	X	X	X	X
07	8/24/15	4:20	Grab	Soil	Material S+S Topsoil B	X	X	X	X	X
08	8/24/15	4:30	Grab	Soil	Material S+S Topsoil C	X	X	X	X	X
09	8/24/15	4:40	Grab	Soil	Material S+S Topsoil D	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitrainer 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*
 Number of Containers: 1 1 1 2 1

Sampled by: Charter Environmental/George 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: YES Technician Hours →
 Cooler Temperature: 9.8 Ice 5.2
 Relinquished by: (Signature, Date & Time) 8/25/15
 Received by: (Signature, Date & Time) 8/25/15 1700



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: 1509518

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 4:18 pm, Sep 22, 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: 1509518

SAMPLE RECEIPT

The following samples were received on September 18, 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 18, 2015 at 16:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509518-01	Material S&S Loam 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: 1509518

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI52103-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (139% @ 70-130%)

CI52103-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)

1,4-Dioxane (22% @ 20%), 2-Butanone (30% @ 25%), 2-Hexanone (26% @ 25%),
4-Methyl-2-Pentanone (27% @ 25%), Acetone (33% @ 25%), Chloromethane (26% @ 25%),
Di-isopropyl ether (26% @ 25%), Tetrahydrofuran (35% @ 25%), Vinyl Acetate (26% @ 25%), Vinyl
Chloride (27% @ 25%)

8270D Semi-Volatile Organic Compounds

CYI0194-CCV1 [Calibration required quadratic regression \(O\).](#)

2,4-Dinitrophenol (104% @ 80-120%), Benzoic Acid (96% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509518

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: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
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	ND (2.49)		6010C		1	JP	09/19/15 2:35	2.24	100	CI51749
Barium	27.9 (2.49)		6010C		1	JP	09/19/15 2:35	2.24	100	CI51749
Cadmium	ND (0.50)		6010C		1	JP	09/19/15 2:35	2.24	100	CI51749
Chromium	4.48 (1.00)		6010C		1	JP	09/19/15 2:35	2.24	100	CI51749
Lead	14.6 (4.99)		6010C		1	JP	09/19/15 2:35	2.24	100	CI51749
Mercury	0.032 (0.032)		7471B		1	BJV	09/21/15 12:41	0.7	40	CI51851
Selenium	ND (9.98)		6010C		2	JP	09/19/15 0:59	2.24	100	CI51749
Silver	ND (0.50)		6010C		1	JP	09/19/15 2:35	2.24	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
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	09/19/15 17:32	CYI0214	CI52103
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,1,2,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1,4-Dioxane	ND (0.0901)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
1-Chlorohexane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
2-Butanone	ND (0.0451)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
2-Chlorotoluene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
2-Hexanone	ND (0.0451)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
4-Chlorotoluene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
4-Methyl-2-Pentanone	ND (0.0451)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Acetone	ND (0.0451)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Benzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Bromobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 1
 Date Sampled: 09/18/15 13:30
 Percent Solids: 89
 Initial Volume: 6.2
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1509518
 ESS Laboratory Sample ID: 1509518-01
 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	09/19/15 17:32	CYI0214	CI52103
Bromodichloromethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Bromoform	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Bromomethane	ND (0.0090)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Carbon Disulfide	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Chlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Chloroethane	ND (0.0090)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Chloroform	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Chloromethane	ND (0.0090)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Dibromochloromethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Dibromomethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Dichlorodifluoromethane	ND (0.0090)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Diethyl Ether	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Di-isopropyl ether	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Ethylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Isopropylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Methylene Chloride	ND (0.0225)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Naphthalene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
n-Butylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
n-Propylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
sec-Butylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Styrene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
tert-Butylbenzene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Tetrachloroethene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Tetrahydrofuran	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 1
 Date Sampled: 09/18/15 13:30
 Percent Solids: 89
 Initial Volume: 6.2
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1509518
 ESS Laboratory Sample ID: 1509518-01
 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	09/19/15 17:32	CYI0214	CI52103
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Trichloroethene	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Vinyl Acetate	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Vinyl Chloride	ND (0.0090)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Xylene O	ND (0.0045)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Xylene P,M	ND (0.0090)		8260B Low		1	09/19/15 17:32	CYI0214	CI52103
Xylenes (Total)	ND (0.0090)		8260B Low		1	09/19/15 17:32		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	124 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	86 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	110 %		70-130
<i>Surrogate: Toluene-d8</i>	102 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/21/15 12:51

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	173 (43.7)		8100M		1	09/22/15 0:39	CY10224	CI52117
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>81 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
1,2,4-Trichlorobenzene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
1,2-Dichlorobenzene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
1,3-Dichlorobenzene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
1,4-Dichlorobenzene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,3,4,6-Tetrachlorophenol	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,4,5-Trichlorophenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,4,6-Trichlorophenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,4-Dichlorophenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,4-Dimethylphenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,4-Dinitrophenol	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,4-Dinitrotoluene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2,6-Dinitrotoluene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2-Chloronaphthalene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2-Chlorophenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2-Methylnaphthalene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2-Methylphenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2-Nitroaniline	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
2-Nitrophenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
3,3'-Dichlorobenzidine	ND (0.761)		8270D		1	09/21/15 11:50	CYI0194	CI51816
3+4-Methylphenol	ND (0.761)		8270D		1	09/21/15 11:50	CYI0194	CI51816
3-Nitroaniline	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4,6-Dinitro-2-Methylphenol	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4-Bromophenyl-phenylether	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4-Chloro-3-Methylphenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4-Chloroaniline	ND (0.761)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4-Chloro-phenyl-phenyl ether	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4-Nitroaniline	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
4-Nitrophenol	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Acenaphthene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Acenaphthylene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Acetophenone	ND (0.761)		8270D		1	09/21/15 11:50	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.761)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Anthracene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Azobenzene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzo(a)anthracene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzo(a)pyrene	ND (0.190)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzo(b)fluoranthene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzo(g,h,i)perylene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzo(k)fluoranthene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzoic Acid	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Benzyl Alcohol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
bis(2-Chloroethoxy)methane	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
bis(2-Chloroethyl)ether	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
bis(2-chloroisopropyl)Ether	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
bis(2-Ethylhexyl)phthalate	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Butylbenzylphthalate	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Carbazole	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Chrysene	ND (0.190)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Dibenzo(a,h)Anthracene	ND (0.190)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Dibenzofuran	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Diethylphthalate	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Dimethylphthalate	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Di-n-butylphthalate	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Di-n-octylphthalate	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Fluoranthene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Fluorene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Hexachlorobenzene	ND (0.190)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Hexachlorobutadiene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Hexachlorocyclopentadiene	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Hexachloroethane	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Indeno(1,2,3-cd)Pyrene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Isophorone	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Naphthalene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
N-Nitrosodimethylamine	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
N-Nitroso-Di-n-Propylamine	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
N-nitrosodiphenylamine	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Pentachlorophenol	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Phenanthrene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Phenol	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Pyrene	ND (0.380)		8270D		1	09/21/15 11:50	CYI0194	CI51816
Pyridine	ND (1.90)		8270D		1	09/21/15 11:50	CYI0194	CI51816

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>56 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>78 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>63 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>63 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>69 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>81 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 09/18/15 13:30
Percent Solids: 89

ESS Laboratory Work Order: 1509518
ESS Laboratory Sample ID: 1509518-01
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)	5.94 (N/A)		9045		1	EEM	09/18/15 17:45	S.U.	CI51804
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.9 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509518

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 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

Batch CI51851 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	32.4	3.54	mg/kg wet	24.90	130	51-149
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LCS Dup

Mercury	31.2	3.30	mg/kg wet	24.90	125	51-149	4	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI52103 - 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: 1509518

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 CI52103 - 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: 1509518

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 CI52103 - 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	0.0568		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,1-Trichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2,2-Tetrachloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2-Trichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloropropene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trimethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichloropropane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.

Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509518

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 CI52103 - 5035

1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130			
1-Chlorohexane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
2,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.267	0.0500	mg/kg wet	0.2500		107	70-130			
2-Chlorotoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.249	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
Acetone	0.290	0.0500	mg/kg wet	0.2500		116	70-130			
Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Bromobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromodichloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Carbon Tetrachloride	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Chloroform	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chloromethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dibromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Ethyl tertiary-butyl ether	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Ethylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Methyl tert-Butyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Methylene Chloride	0.0599	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Styrene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
tert-Butylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrahydrofuran	0.0488	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: 1509518

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 CI52103 - 5035										
Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Trichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Trichlorofluoromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Vinyl Acetate	0.0695	0.0050	mg/kg wet	0.05000		139	70-130			B+
Vinyl Chloride	0.0543	0.0100	mg/kg wet	0.05000		109	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0560</i>		mg/kg wet	<i>0.05000</i>		<i>112</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0505</i>		mg/kg wet	<i>0.05000</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0550</i>		mg/kg wet	<i>0.05000</i>		<i>110</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0484</i>		mg/kg wet	<i>0.05000</i>		<i>97</i>	<i>70-130</i>			

LCS Dup										
1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,1,1-Trichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
1,1,2-Trichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	22	25	
1,1-Dichloroethane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	20	25	
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	14	25	
1,1-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	18	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2,3-Trichloropropane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	19	25	
1,2,4-Trichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
1,2-Dibromo-3-Chloropropane	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	17	25	
1,2-Dibromoethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	14	25	
1,2-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2-Dichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	23	25	
1,2-Dichloropropane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	22	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	9	25	
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,3-Dichloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	16	25	
1,4-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
1,4-Dioxane	0.824	0.100	mg/kg wet	1.000		82	70-130	22	20	D+
1-Chlorohexane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	11	25	
2,2-Dichloropropane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	17	25	
2-Butanone	0.198	0.0500	mg/kg wet	0.2500		79	70-130	30	25	D+
2-Chlorotoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	12	25	
2-Hexanone	0.191	0.0500	mg/kg wet	0.2500		76	70-130	26	25	D+
4-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	11	25	
4-Isopropyltoluene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
4-Methyl-2-Pentanone	0.187	0.0500	mg/kg wet	0.2500		75	70-130	27	25	D+
Acetone	0.208	0.0500	mg/kg wet	0.2500		83	70-130	33	25	D+



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.

Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509518

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 CI52103 - 5035

Benzene	0.0466	0.0050	mg/kg wet	0.05000	93	70-130	19	25	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000	96	70-130	3	25	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000	87	70-130	12	25	
Bromodichloromethane	0.0444	0.0050	mg/kg wet	0.05000	89	70-130	19	25	
Bromoform	0.0425	0.0050	mg/kg wet	0.05000	85	70-130	8	25	
Bromomethane	0.0440	0.0100	mg/kg wet	0.05000	88	70-130	18	25	
Carbon Disulfide	0.0436	0.0050	mg/kg wet	0.05000	87	70-130	17	25	
Carbon Tetrachloride	0.0456	0.0050	mg/kg wet	0.05000	91	70-130	13	25	
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000	93	70-130	9	25	
Chloroethane	0.0413	0.0100	mg/kg wet	0.05000	83	70-130	24	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000	91	70-130	19	25	
Chloromethane	0.0405	0.0100	mg/kg wet	0.05000	81	70-130	26	25	D+
cis-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000	89	70-130	15	25	
cis-1,3-Dichloropropene	0.0414	0.0050	mg/kg wet	0.05000	83	70-130	19	25	
Dibromochloromethane	0.0484	0.0050	mg/kg wet	0.05000	97	70-130	11	25	
Dibromomethane	0.0409	0.0050	mg/kg wet	0.05000	82	70-130	20	25	
Dichlorodifluoromethane	0.0462	0.0100	mg/kg wet	0.05000	92	70-130	18	25	
Diethyl Ether	0.0417	0.0050	mg/kg wet	0.05000	83	70-130	21	25	
Di-isopropyl ether	0.0411	0.0050	mg/kg wet	0.05000	82	70-130	26	25	D+
Ethyl tertiary-butyl ether	0.0396	0.0050	mg/kg wet	0.05000	79	70-130	21	25	
Ethylbenzene	0.0469	0.0050	mg/kg wet	0.05000	94	70-130	10	25	
Hexachlorobutadiene	0.0490	0.0050	mg/kg wet	0.05000	98	70-130	0.3	25	
Isopropylbenzene	0.0466	0.0050	mg/kg wet	0.05000	93	70-130	9	25	
Methyl tert-Butyl Ether	0.0393	0.0050	mg/kg wet	0.05000	79	70-130	21	25	
Methylene Chloride	0.0495	0.0250	mg/kg wet	0.05000	99	70-130	19	25	
Naphthalene	0.0435	0.0050	mg/kg wet	0.05000	87	70-130	9	25	
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000	90	70-130	10	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000	89	70-130	11	25	
sec-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000	92	70-130	8	25	
Styrene	0.0475	0.0050	mg/kg wet	0.05000	95	70-130	9	25	
tert-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000	96	70-130	7	25	
Tertiary-amyl methyl ether	0.0403	0.0050	mg/kg wet	0.05000	81	70-130	21	25	
Tetrachloroethene	0.0494	0.0050	mg/kg wet	0.05000	99	70-130	6	25	
Tetrahydrofuran	0.0341	0.0050	mg/kg wet	0.05000	68	70-130	35	25	D+
Toluene	0.0433	0.0050	mg/kg wet	0.05000	87	70-130	14	25	
trans-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000	89	70-130	16	25	
trans-1,3-Dichloropropene	0.0391	0.0050	mg/kg wet	0.05000	78	70-130	20	25	
Trichloroethene	0.0421	0.0050	mg/kg wet	0.05000	84	70-130	15	25	
Trichlorofluoromethane	0.0477	0.0050	mg/kg wet	0.05000	95	70-130	14	25	
Vinyl Acetate	0.0534	0.0050	mg/kg wet	0.05000	107	70-130	26	25	D+
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000	83	70-130	27	25	D+
Xylene O	0.0471	0.0050	mg/kg wet	0.05000	94	70-130	8	25	
Xylene P,M	0.0955	0.0100	mg/kg wet	0.1000	95	70-130	8	25	
Xylenes (Total)	0.143	0.0100	mg/kg wet						
Surrogate: 1,2-Dichloroethane-d4	0.0488		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: 1509518

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 CI52103 - 5035

<i>Surrogate: 4-Bromofluorobenzene</i>	0.0488		mg/kg wet	0.05000		98	70-130			
<i>Surrogate: Dibromofluoromethane</i>	0.0514		mg/kg wet	0.05000		103	70-130			
<i>Surrogate: Toluene-d8</i>	0.0473		mg/kg wet	0.05000		95	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52117 - 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							

<i>Surrogate: O-Terphenyl</i>	4.72		mg/kg wet	5.000		94	40-140			
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LCS

Decane (C10)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		116	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		81	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140			
Triacotane (C30)	2.7	0.2	mg/kg wet	2.500		108	40-140			

<i>Surrogate: O-Terphenyl</i>	4.37		mg/kg wet	5.000		87	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	15	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140	17	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	16	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509518

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CI52117 - 3546										
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	17	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	14	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	16	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	23	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	15	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	12	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	17	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140	16	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	17	25	
Total Petroleum Hydrocarbons	30.8	37.5	mg/kg wet	35.00		88	40-140	11	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		96	40-140	12	25	
<i>Surrogate: O-Terphenyl</i>	<i>3.76</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>75</i>	<i>40-140</i>			

8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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.
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ESS Laboratory Work Order: 1509518

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 CI51816 - 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: 1509518

Quality Control Data

Table with 11 columns: Analyte, Result, MRL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Qualifier

8270D Semi-Volatile Organic Compounds

Batch CI51816 - 3546

Table listing surrogate compounds such as 1,2-Dichlorobenzene-d4, 2,4,6-Tribromophenol, etc., with their respective results and MRLs.

LCS

Table listing various LCS compounds including 1,1-Biphenyl, 1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, etc., with their results and MRLs.



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1509518

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CI51816 - 3546										
Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.51	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.34	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-Ethylhexyl)phthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Butylbenzylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140			
Carbazole	2.98	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140			
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140			
Dimethylphthalate	2.60	0.333	mg/kg wet	3.333		78	40-140			
Di-n-butylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorobenzene	2.46	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.08	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorocyclopentadiene	2.07	1.67	mg/kg wet	3.333		62	40-140			
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.37	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Nitrobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	2.16	0.333	mg/kg wet	3.333		65	40-140			
N-Nitroso-Di-n-Propylamine	2.32	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.65	0.333	mg/kg wet	3.333		80	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Pyridine	1.58	1.67	mg/kg wet	3.333		47	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.02		mg/kg wet	3.333		61	30-130			
Surrogate: 2,4,6-Tribromophenol	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Fluorobiphenyl	2.23		mg/kg wet	3.333		67	30-130			
Surrogate: 2-Fluorophenol	3.28		mg/kg wet	5.000		66	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		66	30-130			
Surrogate: Phenol-d6	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: p-Terphenyl-d14	2.50		mg/kg wet	3.333		75	30-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509518

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 CI51816 - 3546

LCS Dup										
1,1-Biphenyl	2.64	0.333	mg/kg wet	3.333		79	40-140	7	30	
1,2,4-Trichlorobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.6	30	
1,3-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.3	30	
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.15	1.67	mg/kg wet	3.333		65	30-130	5	30	
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	5	30	
2,4,6-Trichlorophenol	2.96	0.333	mg/kg wet	3.333		89	30-130	7	30	
2,4-Dichlorophenol	2.55	0.333	mg/kg wet	3.333		77	30-130	6	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	4	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4-Dinitrotoluene	3.01	0.333	mg/kg wet	3.333		90	40-140	4	30	
2,6-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
2-Chloronaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	0.2	30	
2-Methylnaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	0.6	30	
2-Nitroaniline	2.42	0.333	mg/kg wet	3.333		72	40-140	4	30	
2-Nitrophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3'-Dichlorobenzidine	2.58	0.667	mg/kg wet	3.333		77	40-140	9	30	
3+4-Methylphenol	4.87	0.667	mg/kg wet	6.667		73	30-130	0.9	30	
3-Nitroaniline	2.95	0.333	mg/kg wet	3.333		89	40-140	3	30	
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130	6	30	
4-Bromophenyl-phenylether	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
4-Chloro-3-Methylphenol	2.55	0.333	mg/kg wet	3.333		77	30-130	0.8	30	
4-Chloroaniline	2.03	0.667	mg/kg wet	3.333		61	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.70	0.333	mg/kg wet	3.333		81	40-140	5	30	
4-Nitroaniline	3.31	0.333	mg/kg wet	3.333		99	40-140	9	30	
4-Nitrophenol	2.52	1.67	mg/kg wet	3.333		76	30-130	1	30	
Acenaphthene	2.69	0.333	mg/kg wet	3.333		81	40-140	5	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
Acetophenone	2.33	0.667	mg/kg wet	3.333		70	40-140	1	30	
Aniline	1.91	0.667	mg/kg wet	3.333		57	40-140	3	30	
Anthracene	2.95	0.333	mg/kg wet	3.333		89	40-140	7	30	
Azobenzene	2.97	0.333	mg/kg wet	3.333		89	40-140	9	30	
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(a)pyrene	3.06	0.167	mg/kg wet	3.333		92	40-140	6	30	
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Benzo(g,h,i)perylene	2.91	0.333	mg/kg wet	3.333		87	40-140	8	30	
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzoic Acid	2.57	1.67	mg/kg wet	3.333		77	40-140	2	30	
Benzyl Alcohol	2.24	0.333	mg/kg wet	3.333		67	40-140	5	30	
bis(2-Chloroethoxy)methane	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140	0.07	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509518

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 CI51816 - 3546

bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140	0.2	30	
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140	4	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	5	30	
Carbazole	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Chrysene	3.00	0.167	mg/kg wet	3.333		90	40-140	7	30	
Dibenzo(a,h)Anthracene	2.98	0.167	mg/kg wet	3.333		89	40-140	7	30	
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140	4	30	
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140	3	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Di-n-octylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140	1	30	
Fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	5	30	
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140	4	30	
Hexachlorobenzene	2.64	0.167	mg/kg wet	3.333		79	40-140	7	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	5	30	
Hexachlorocyclopentadiene	2.28	1.67	mg/kg wet	3.333		68	40-140	9	30	
Hexachloroethane	2.09	0.333	mg/kg wet	3.333		63	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.98	0.333	mg/kg wet	3.333		89	40-140	8	30	
Isophorone	2.45	0.333	mg/kg wet	3.333		73	40-140	3	30	
Naphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	5	30	
Nitrobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	5	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	0.2	30	
N-nitrosodiphenylamine	2.87	0.333	mg/kg wet	3.333		86	40-140	8	30	
Pentachlorophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	7	30	
Phenanthrene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130	0.2	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	5	30	
Pyridine	1.59	1.67	mg/kg wet	3.333		48	40-140	0.8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.55		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.04		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.30		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		65	30-130			
Surrogate: Phenol-d6	3.32		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.49		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509518

Notes and Definitions

- Z-10 Soil pH measured in water at 23.9 °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.
- 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: 1509518

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: 15090518
 Date Project Due: 9/22/15
 Days For Project: 2 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 |
| Cooler Temp: <u>7.8</u> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Iced With: <u>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 @ 5L 9/18/15
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: 9/18/15 1552

Reviewed By: [Signature]

Date/Time: 9/18/15 16:15

1509518

CHAIN OF CUSTODY

ESS Lab #

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

Turn Time: 2 Days
 Reporting Limits: RI DEM RDEC Excel

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

Company Name: Charter Environmental
 Project Name: Textron Providence

Contact Person: Paul J. Leofanti, Jr.
 Address: 500 Harrison Avenue, Suite 4R
 Zip Code: 02118
 PO #

City: Boston
 State: MA
 Email Address: pleofanti@charter.us
 Sample ID

Telephone Number: (857) 246-6812
 FAX Number

ESS Lab ID: 1
 Collection Date: 9/18
 Collection Time: 13:30
 Sample Type: Grab
 Sample Matrix: Soil
 Material S&S: Loam
 Number of Containers: 1

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis
1	9/18	13:30	Grab	Soil	Loam	pH: Corrosivity 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
 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

Laboratory Use Only
 Sampled by: M. Polisky-Thielsch

Cooler Present: Yes Drop Off
 Seals Intact: No Pickup

Cooler Temperature: 7.8 5.9 9/18/15 Technician Hours →
 Relinquished by: (Signature, Date & Time) *Mary Polisky 9-18-15*
 Received by: (Signature, Date & Time) *M. Polisky 9/18/15 15:15*

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

Relinquished 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: 1509519

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 4:19 pm, Sep 22, 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: 1509519

SAMPLE RECEIPT

The following samples were received on September 18, 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 18, 2015 at 16:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509519-01	Material S&S Loam 2	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: 1509519

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1509519-01 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

1,4-Dichlorobenzene-D4 (33% @ 50-200%)

1509519-01RE1 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

1,4-Dichlorobenzene-D4 (37% @ 50-200%)

CI52103-BS1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (139% @ 70-130%)

CI52103-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

1,4-Dioxane (22% @ 20%), 2-Butanone (30% @ 25%), 2-Hexanone (26% @ 25%),
4-Methyl-2-Pentanone (27% @ 25%), Acetone (33% @ 25%), Chloromethane (26% @ 25%),
Di-isopropyl ether (26% @ 25%), Tetrahydrofuran (35% @ 25%), Vinyl Acetate (26% @ 25%), Vinyl
Chloride (27% @ 25%)

CI52104-BSD1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (138% @ 70-130%)

CI52104-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Bromomethane (28% @ 25%)

8270D Semi-Volatile Organic Compounds

CYI0194-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (104% @ 80-120%), Benzoic Acid (96% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
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	2.53 (2.29)		6010C		1	JP	09/19/15 2:39	2.42	100	CI51749
Barium	36.2 (2.29)		6010C		1	JP	09/19/15 2:39	2.42	100	CI51749
Cadmium	ND (0.46)		6010C		1	JP	09/19/15 2:39	2.42	100	CI51749
Chromium	4.69 (0.92)		6010C		1	JP	09/19/15 2:39	2.42	100	CI51749
Lead	14.2 (4.58)		6010C		1	JP	09/19/15 2:39	2.42	100	CI51749
Mercury	0.032 (0.031)		7471B		1	BJV	09/21/15 12:47	0.7	40	CI51851
Selenium	ND (9.17)		6010C		2	JP	09/19/15 1:04	2.42	100	CI51749
Silver	ND (0.46)		6010C		1	JP	09/19/15 2:39	2.42	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
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	09/19/15 18:01	CYI0214	CI52103
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,1,2,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1,4-Dioxane	ND (0.0909)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
1-Chlorohexane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
2-Butanone	ND (0.0455)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
2-Chlorotoluene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
2-Hexanone	ND (0.0455)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
4-Chlorotoluene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
4-Methyl-2-Pentanone	ND (0.0455)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Acetone	ND (0.0455)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Benzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Bromobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
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	09/19/15 18:01	CYI0214	CI52103
Bromodichloromethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Bromoform	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Bromomethane	ND (0.0091)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Carbon Disulfide	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Chlorobenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Chloroethane	ND (0.0091)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Chloroform	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Chloromethane	ND (0.0091)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Dibromochloromethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Dibromomethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Dichlorodifluoromethane	ND (0.0091)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Diethyl Ether	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Di-isopropyl ether	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Ethylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Isopropylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Methylene Chloride	ND (0.0227)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Naphthalene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
n-Butylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
n-Propylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
sec-Butylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Styrene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
tert-Butylbenzene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Tetrachloroethene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Tetrahydrofuran	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
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	09/19/15 18:01	CYI0214	CI52103
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Trichloroethene	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Vinyl Acetate	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Vinyl Chloride	ND (0.0091)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Xylene O	ND (0.0045)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Xylene P,M	ND (0.0091)		8260B Low		1	09/19/15 18:01	CYI0214	CI52103
Xylenes (Total)	ND (0.0091)		8260B Low		1	09/19/15 18:01		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>119 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>72 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>114 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/21/15 12:51

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	164 (42.7)		8100M		1	09/22/15 1:18	CY10224	CI52117
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		79 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
1,2,4-Trichlorobenzene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
1,2-Dichlorobenzene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
1,3-Dichlorobenzene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
1,4-Dichlorobenzene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,3,4,6-Tetrachlorophenol	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,4,5-Trichlorophenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,4,6-Trichlorophenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,4-Dichlorophenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,4-Dimethylphenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,4-Dinitrophenol	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,4-Dinitrotoluene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2,6-Dinitrotoluene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2-Chloronaphthalene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2-Chlorophenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2-Methylnaphthalene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2-Methylphenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2-Nitroaniline	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
2-Nitrophenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
3,3'-Dichlorobenzidine	ND (0.782)		8270D		1	09/21/15 12:27	CYI0194	CI51816
3+4-Methylphenol	ND (0.782)		8270D		1	09/21/15 12:27	CYI0194	CI51816
3-Nitroaniline	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4,6-Dinitro-2-Methylphenol	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4-Bromophenyl-phenylether	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4-Chloro-3-Methylphenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4-Chloroaniline	ND (0.782)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4-Chloro-phenyl-phenyl ether	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4-Nitroaniline	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
4-Nitrophenol	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Acenaphthene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Acenaphthylene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Acetophenone	ND (0.782)		8270D		1	09/21/15 12:27	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.782)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Anthracene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Azobenzene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzo(a)anthracene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzo(a)pyrene	ND (0.196)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzo(b)fluoranthene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzo(g,h,i)perylene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzo(k)fluoranthene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzoic Acid	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Benzyl Alcohol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
bis(2-Chloroethoxy)methane	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
bis(2-Chloroethyl)ether	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
bis(2-chloroisopropyl)Ether	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
bis(2-Ethylhexyl)phthalate	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Butylbenzylphthalate	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Carbazole	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Chrysene	ND (0.196)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Dibenzo(a,h)Anthracene	ND (0.196)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Dibenzofuran	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Diethylphthalate	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Dimethylphthalate	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Di-n-butylphthalate	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Di-n-octylphthalate	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Fluoranthene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Fluorene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Hexachlorobenzene	ND (0.196)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Hexachlorobutadiene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Hexachlorocyclopentadiene	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Hexachloroethane	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Indeno(1,2,3-cd)Pyrene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Isophorone	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Naphthalene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
N-Nitrosodimethylamine	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
N-Nitroso-Di-n-Propylamine	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
N-nitrosodiphenylamine	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Pentachlorophenol	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Phenanthrene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Phenol	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Pyrene	ND (0.390)		8270D		1	09/21/15 12:27	CYI0194	CI51816
Pyridine	ND (1.96)		8270D		1	09/21/15 12:27	CYI0194	CI51816

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>58 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>82 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>72 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>81 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01
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)	5.84 (N/A)		9045		1	EEM	09/18/15 17:45	S.U.	CI51804
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.9 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01RE1
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 (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1,4-Dioxane	ND (0.0940)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
1-Chlorohexane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
2-Butanone	ND (0.0470)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
2-Chlorotoluene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
2-Hexanone	ND (0.0470)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
4-Chlorotoluene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
4-Methyl-2-Pentanone	ND (0.0470)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Acetone	ND (0.0470)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Benzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Bromobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01RE1
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 (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Bromodichloromethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Bromoform	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Bromomethane	ND (0.0094)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Carbon Disulfide	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Chlorobenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Chloroethane	ND (0.0094)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Chloroform	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Chloromethane	ND (0.0094)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Dibromochloromethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Dibromomethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Dichlorodifluoromethane	ND (0.0094)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Diethyl Ether	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Di-isopropyl ether	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Ethylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Isopropylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Methylene Chloride	ND (0.0235)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Naphthalene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
n-Butylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
n-Propylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
sec-Butylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Styrene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
tert-Butylbenzene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Tetrachloroethene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Tetrahydrofuran	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 09/18/15 13:45
Percent Solids: 90
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509519
ESS Laboratory Sample ID: 1509519-01RE1
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 (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Trichloroethene	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Vinyl Acetate	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Vinyl Chloride	ND (0.0094)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Xylene O	ND (0.0047)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Xylene P,M	ND (0.0094)		8260B Low		1	09/21/15 13:17	CYI0215	CI52104
Xylenes (Total)	ND (0.0094)		8260B Low		1	09/21/15 13:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>129 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>75 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>115 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>111 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 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

Batch CI51851 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	32.4	3.54	mg/kg wet	24.90	130	51-149
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LCS Dup

Mercury	31.2	3.30	mg/kg wet	24.90	125	51-149	4	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI52103 - 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: 1509519

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 CI52103 - 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: 1509519

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 CI52103 - 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	0.0568		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,1-Trichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2,2-Tetrachloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2-Trichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloropropene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trimethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichloropropane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI52103 - 5035

1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130			
1-Chlorohexane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
2,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.267	0.0500	mg/kg wet	0.2500		107	70-130			
2-Chlorotoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.249	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
Acetone	0.290	0.0500	mg/kg wet	0.2500		116	70-130			
Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Bromobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromodichloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Carbon Tetrachloride	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Chloroform	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chloromethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dibromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Ethyl tertiary-butyl ether	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Ethylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Methyl tert-Butyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Methylene Chloride	0.0599	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Styrene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
tert-Butylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrahydrofuran	0.0488	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: 1509519

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 CI52103 - 5035

Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Trichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Trichlorofluoromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Vinyl Acetate	0.0695	0.0050	mg/kg wet	0.05000		139	70-130			B+
Vinyl Chloride	0.0543	0.0100	mg/kg wet	0.05000		109	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0560		mg/kg wet	0.05000		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0505		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0550		mg/kg wet	0.05000		110	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,1,1-Trichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
1,1,2-Trichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	22	25	
1,1-Dichloroethane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	20	25	
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	14	25	
1,1-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	18	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2,3-Trichloropropane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	19	25	
1,2,4-Trichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
1,2-Dibromo-3-Chloropropane	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	17	25	
1,2-Dibromoethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	14	25	
1,2-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2-Dichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	23	25	
1,2-Dichloropropane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	22	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	9	25	
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,3-Dichloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	16	25	
1,4-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
1,4-Dioxane	0.824	0.100	mg/kg wet	1.000		82	70-130	22	20	D+
1-Chlorohexane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	11	25	
2,2-Dichloropropane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	17	25	
2-Butanone	0.198	0.0500	mg/kg wet	0.2500		79	70-130	30	25	D+
2-Chlorotoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	12	25	
2-Hexanone	0.191	0.0500	mg/kg wet	0.2500		76	70-130	26	25	D+
4-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	11	25	
4-Isopropyltoluene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
4-Methyl-2-Pentanone	0.187	0.0500	mg/kg wet	0.2500		75	70-130	27	25	D+
Acetone	0.208	0.0500	mg/kg wet	0.2500		83	70-130	33	25	D+



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI52103 - 5035

Benzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	19	25	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	12	25	
Bromodichloromethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	19	25	
Bromoform	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	8	25	
Bromomethane	0.0440	0.0100	mg/kg wet	0.05000		88	70-130	18	25	
Carbon Disulfide	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	17	25	
Carbon Tetrachloride	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	13	25	
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Chloroethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130	24	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
Chloromethane	0.0405	0.0100	mg/kg wet	0.05000		81	70-130	26	25	D+
cis-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	15	25	
cis-1,3-Dichloropropene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130	19	25	
Dibromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
Dibromomethane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	20	25	
Dichlorodifluoromethane	0.0462	0.0100	mg/kg wet	0.05000		92	70-130	18	25	
Diethyl Ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	21	25	
Di-isopropyl ether	0.0411	0.0050	mg/kg wet	0.05000		82	70-130	26	25	D+
Ethyl tertiary-butyl ether	0.0396	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Ethylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	10	25	
Hexachlorobutadiene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
Isopropylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Methyl tert-Butyl Ether	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Methylene Chloride	0.0495	0.0250	mg/kg wet	0.05000		99	70-130	19	25	
Naphthalene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	9	25	
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	11	25	
sec-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Styrene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	9	25	
tert-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Tertiary-amyl methyl ether	0.0403	0.0050	mg/kg wet	0.05000		81	70-130	21	25	
Tetrachloroethene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Tetrahydrofuran	0.0341	0.0050	mg/kg wet	0.05000		68	70-130	35	25	D+
Toluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	14	25	
trans-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	16	25	
trans-1,3-Dichloropropene	0.0391	0.0050	mg/kg wet	0.05000		78	70-130	20	25	
Trichloroethene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	15	25	
Trichlorofluoromethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	14	25	
Vinyl Acetate	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	26	25	D+
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130	27	25	D+
Xylene O	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
Xylene P,M	0.0955	0.0100	mg/kg wet	0.1000		95	70-130	8	25	
Xylenes (Total)	0.143	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0488</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI52103 - 5035

Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0473		mg/kg wet	0.05000		95	70-130			

Batch CI52104 - 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

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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 CI52104 - 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	0.0597		mg/kg wet	0.05000		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.0478		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0544		mg/kg wet	0.05000		109	70-130			
Surrogate: Toluene-d8	0.0486		mg/kg wet	0.05000		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,1,1-Trichloroethane	0.0405	0.0050	mg/kg wet	0.05000		81	70-130			
1,1,2,2-Tetrachloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1,2-Trichloroethane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130			
1,1-Dichloroethane	0.0412	0.0050	mg/kg wet	0.05000		82	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 CI52104 - 5035

1,1-Dichloroethene	0.0410	0.0050	mg/kg wet	0.05000		82	70-130			
1,1-Dichloropropene	0.0388	0.0050	mg/kg wet	0.05000		78	70-130			
1,2,3-Trichlorobenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,4-Trimethylbenzene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
1,2-Dibromo-3-Chloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2-Dibromoethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2-Dichloropropane	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
1,3,5-Trimethylbenzene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
1,3-Dichlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,3-Dichloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,4-Dichlorobenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,4-Dioxane	0.950	0.100	mg/kg wet	1.000		95	70-130			
1-Chlorohexane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
2,2-Dichloropropane	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
2-Butanone	0.220	0.0500	mg/kg wet	0.2500		88	70-130			
2-Chlorotoluene	0.0410	0.0050	mg/kg wet	0.05000		82	70-130			
2-Hexanone	0.225	0.0500	mg/kg wet	0.2500		90	70-130			
4-Chlorotoluene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
4-Isopropyltoluene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
4-Methyl-2-Pentanone	0.212	0.0500	mg/kg wet	0.2500		85	70-130			
Acetone	0.241	0.0500	mg/kg wet	0.2500		96	70-130			
Benzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Bromochloromethane	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
Bromodichloromethane	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
Bromoform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Bromomethane	0.0382	0.0100	mg/kg wet	0.05000		76	70-130			
Carbon Disulfide	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
Carbon Tetrachloride	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Chlorobenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
Chloroethane	0.0425	0.0100	mg/kg wet	0.05000		85	70-130			
Chloroform	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Chloromethane	0.0381	0.0100	mg/kg wet	0.05000		76	70-130			
cis-1,2-Dichloroethene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
cis-1,3-Dichloropropene	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
Dibromochloromethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Dibromomethane	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
Dichlorodifluoromethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Diethyl Ether	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
Di-isopropyl ether	0.0408	0.0050	mg/kg wet	0.05000		82	70-130			
Ethyl tertiary-butyl ether	0.0390	0.0050	mg/kg wet	0.05000		78	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI52104 - 5035

Ethylbenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
Hexachlorobutadiene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Isopropylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Methyl tert-Butyl Ether	0.0399	0.0050	mg/kg wet	0.05000		80	70-130			
Methylene Chloride	0.0470	0.0250	mg/kg wet	0.05000		94	70-130			
Naphthalene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
n-Butylbenzene	0.0411	0.0050	mg/kg wet	0.05000		82	70-130			
n-Propylbenzene	0.0406	0.0050	mg/kg wet	0.05000		81	70-130			
sec-Butylbenzene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
Styrene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
tert-Butylbenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
Tertiary-amyl methyl ether	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
Tetrachloroethene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Tetrahydrofuran	0.0410	0.0050	mg/kg wet	0.05000		82	70-130			
Toluene	0.0405	0.0050	mg/kg wet	0.05000		81	70-130			
trans-1,2-Dichloroethene	0.0409	0.0050	mg/kg wet	0.05000		82	70-130			
trans-1,3-Dichloropropene	0.0396	0.0050	mg/kg wet	0.05000		79	70-130			
Trichloroethene	0.0389	0.0050	mg/kg wet	0.05000		78	70-130			
Trichlorofluoromethane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Vinyl Acetate	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Chloride	0.0385	0.0100	mg/kg wet	0.05000		77	70-130			
Xylene O	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Xylene P,M	0.0893	0.0100	mg/kg wet	0.1000		89	70-130			
Xylenes (Total)	0.133	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0483		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0507		mg/kg wet	0.05000		101	70-130			
Surrogate: Toluene-d8	0.0473		mg/kg wet	0.05000		95	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	13	25	
1,1,1-Trichloroethane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	17	25	
1,1,2,2-Tetrachloroethane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	13	25	
1,1,2-Trichloroethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	15	25	
1,1-Dichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	21	25	
1,1-Dichloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	18	25	
1,1-Dichloropropene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	18	25	
1,2,3-Trichlorobenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	13	25	
1,2,3-Trichloropropane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	14	25	
1,2,4-Trichlorobenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	12	25	
1,2,4-Trimethylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	16	25	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
1,2-Dibromoethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	11	25	
1,2-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	13	25	
1,2-Dichloroethane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
1,2-Dichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	20	25	



CERTIFICATE OF ANALYSIS

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 Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509519

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 CI52104 - 5035

1,3,5-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	16	25	
1,3-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
1,3-Dichloropropane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
1,4-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	12	25	
1,4-Dioxane	1.07	0.100	mg/kg wet	1.000		107	70-130	12	20	
1-Chlorohexane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	15	25	
2,2-Dichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	17	25	
2-Butanone	0.258	0.0500	mg/kg wet	0.2500		103	70-130	16	25	
2-Chlorotoluene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	17	25	
2-Hexanone	0.243	0.0500	mg/kg wet	0.2500		97	70-130	8	25	
4-Chlorotoluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	16	25	
4-Isopropyltoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
4-Methyl-2-Pentanone	0.235	0.0500	mg/kg wet	0.2500		94	70-130	10	25	
Acetone	0.279	0.0500	mg/kg wet	0.2500		112	70-130	15	25	
Benzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
Bromobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	16	25	
Bromochloromethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	15	25	
Bromodichloromethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	16	25	
Bromoform	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	8	25	
Bromomethane	0.0508	0.0100	mg/kg wet	0.05000		102	70-130	28	25	D+
Carbon Disulfide	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	19	25	
Carbon Tetrachloride	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	17	25	
Chlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
Chloroethane	0.0495	0.0100	mg/kg wet	0.05000		99	70-130	15	25	
Chloroform	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	20	25	
Chloromethane	0.0470	0.0100	mg/kg wet	0.05000		94	70-130	21	25	
cis-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	17	25	
cis-1,3-Dichloropropene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	19	25	
Dibromochloromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	11	25	
Dibromomethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130	18	25	
Diethyl Ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	19	25	
Di-isopropyl ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	21	25	
Ethyl tertiary-butyl ether	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	20	25	
Ethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
Hexachlorobutadiene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	11	25	
Isopropylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	16	25	
Methyl tert-Butyl Ether	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	17	25	
Methylene Chloride	0.0559	0.0250	mg/kg wet	0.05000		112	70-130	17	25	
Naphthalene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
n-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	17	25	
n-Propylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	17	25	
sec-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	15	25	
Styrene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	11	25	
tert-Butylbenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	15	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 CI52104 - 5035

Tertiary-amyl methyl ether	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Tetrachloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	9	25	
Tetrahydrofuran	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
Toluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	16	25	
trans-1,2-Dichloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	18	25	
trans-1,3-Dichloropropene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	17	25	
Trichloroethene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	17	25	
Trichlorofluoromethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	17	25	
Vinyl Acetate	0.0690	0.0050	mg/kg wet	0.05000		138	70-130	22	25	B+
Vinyl Chloride	0.0484	0.0100	mg/kg wet	0.05000		97	70-130	23	25	
Xylene O	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130	12	25	
Xylenes (Total)	0.150	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0522		mg/kg wet	0.05000		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.0480		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0471		mg/kg wet	0.05000		94	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52117 - 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	4.72		mg/kg wet	5.000		94	40-140			

LCS

Decane (C10)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		116	40-140			



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Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CI52117 - 3546

Nonane (C9)	2.0	0.2	mg/kg wet	2.500		81	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		108	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>4.37</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>87</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	15	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140	17	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	16	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	17	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	14	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	16	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	23	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	15	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	12	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	17	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140	16	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	17	25	
Total Petroleum Hydrocarbons	30.8	37.5	mg/kg wet	35.00		88	40-140	11	25	
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		96	40-140	12	25	
<i>Surrogate: O-Terphenyl</i>	<i>3.76</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>75</i>	<i>40-140</i>			

8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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							



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8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI51816 - 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	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.39		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.45		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.29		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.97		mg/kg wet	3.333		89	30-130			

LCS

1,1-Biphenyl	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,2,4-Trichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.19	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140			
2,3,4,6-Tetrachlorophenol	2.05	1.67	mg/kg wet	3.333		61	30-130			
2,4,5-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130			
2,4,6-Trichlorophenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.59	0.333	mg/kg wet	3.333		78	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	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	2.27	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130			
2-Methylnaphthalene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2-Methylphenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2-Nitroaniline	2.32	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
3,3'-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.91	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.87	0.333	mg/kg wet	3.333		86	40-140			
4,6-Dinitro-2-Methylphenol	2.60	1.67	mg/kg wet	3.333		78	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI51816 - 3546

4-Bromophenyl-phenylether	2.65	0.333	mg/kg wet	3.333		80	40-140			
4-Chloro-3-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
4-Chloroaniline	2.18	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	3.04	0.333	mg/kg wet	3.333		91	40-140			
4-Nitrophenol	2.49	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Acenaphthylene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Acetophenone	2.36	0.667	mg/kg wet	3.333		71	40-140			
Aniline	1.85	0.667	mg/kg wet	3.333		55	40-140			
Anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Azobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)anthracene	2.76	0.333	mg/kg wet	3.333		83	40-140			
Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.51	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.34	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-Ethylhexyl)phthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Butylbenzylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140			
Carbazole	2.98	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140			
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140			
Dimethylphthalate	2.60	0.333	mg/kg wet	3.333		78	40-140			
Di-n-butylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorobenzene	2.46	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.08	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorocyclopentadiene	2.07	1.67	mg/kg wet	3.333		62	40-140			
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.37	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Nitrobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	2.16	0.333	mg/kg wet	3.333		65	40-140			
N-Nitroso-Di-n-Propylamine	2.32	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.65	0.333	mg/kg wet	3.333		80	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.

Client Project ID: Textron Providence

ESS Laboratory Work Order: 1509519

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 CI51816 - 3546

Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Pyridine	1.58	1.67	mg/kg wet	3.333		47	40-140			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>2.02</i>		<i>mg/kg wet</i>	<i>3.333</i>		<i>61</i>	<i>30-130</i>			
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>3.38</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>68</i>	<i>30-130</i>			
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>3.19</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>64</i>	<i>30-130</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>2.23</i>		<i>mg/kg wet</i>	<i>3.333</i>		<i>67</i>	<i>30-130</i>			
<i>Surrogate: 2-Fluorophenol</i>	<i>3.28</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>66</i>	<i>30-130</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>2.18</i>		<i>mg/kg wet</i>	<i>3.333</i>		<i>66</i>	<i>30-130</i>			
<i>Surrogate: Phenol-d6</i>	<i>3.47</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>69</i>	<i>30-130</i>			
<i>Surrogate: p-Terphenyl-d14</i>	<i>2.50</i>		<i>mg/kg wet</i>	<i>3.333</i>		<i>75</i>	<i>30-130</i>			

LCS Dup

1,1-Biphenyl	2.64	0.333	mg/kg wet	3.333		79	40-140	7	30	
1,2,4-Trichlorobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.6	30	
1,3-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.3	30	
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.15	1.67	mg/kg wet	3.333		65	30-130	5	30	
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	5	30	
2,4,6-Trichlorophenol	2.96	0.333	mg/kg wet	3.333		89	30-130	7	30	
2,4-Dichlorophenol	2.55	0.333	mg/kg wet	3.333		77	30-130	6	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	4	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4-Dinitrotoluene	3.01	0.333	mg/kg wet	3.333		90	40-140	4	30	
2,6-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
2-Chloronaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	0.2	30	
2-Methylnaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	0.6	30	
2-Nitroaniline	2.42	0.333	mg/kg wet	3.333		72	40-140	4	30	
2-Nitrophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3'-Dichlorobenzidine	2.58	0.667	mg/kg wet	3.333		77	40-140	9	30	
3+4-Methylphenol	4.87	0.667	mg/kg wet	6.667		73	30-130	0.9	30	
3-Nitroaniline	2.95	0.333	mg/kg wet	3.333		89	40-140	3	30	
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130	6	30	
4-Bromophenyl-phenylether	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
4-Chloro-3-Methylphenol	2.55	0.333	mg/kg wet	3.333		77	30-130	0.8	30	
4-Chloroaniline	2.03	0.667	mg/kg wet	3.333		61	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.70	0.333	mg/kg wet	3.333		81	40-140	5	30	
4-Nitroaniline	3.31	0.333	mg/kg wet	3.333		99	40-140	9	30	
4-Nitrophenol	2.52	1.67	mg/kg wet	3.333		76	30-130	1	30	
Acenaphthene	2.69	0.333	mg/kg wet	3.333		81	40-140	5	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1509519

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 CI51816 - 3546

Acetophenone	2.33	0.667	mg/kg wet	3.333		70	40-140	1	30	
Aniline	1.91	0.667	mg/kg wet	3.333		57	40-140	3	30	
Anthracene	2.95	0.333	mg/kg wet	3.333		89	40-140	7	30	
Azobenzene	2.97	0.333	mg/kg wet	3.333		89	40-140	9	30	
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(a)pyrene	3.06	0.167	mg/kg wet	3.333		92	40-140	6	30	
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Benzo(g,h,i)perylene	2.91	0.333	mg/kg wet	3.333		87	40-140	8	30	
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzoic Acid	2.57	1.67	mg/kg wet	3.333		77	40-140	2	30	
Benzyl Alcohol	2.24	0.333	mg/kg wet	3.333		67	40-140	5	30	
bis(2-Chloroethoxy)methane	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140	0.07	30	
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140	0.2	30	
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140	4	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	5	30	
Carbazole	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Chrysene	3.00	0.167	mg/kg wet	3.333		90	40-140	7	30	
Dibenzo(a,h)Anthracene	2.98	0.167	mg/kg wet	3.333		89	40-140	7	30	
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140	4	30	
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140	3	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Di-n-octylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140	1	30	
Fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	5	30	
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140	4	30	
Hexachlorobenzene	2.64	0.167	mg/kg wet	3.333		79	40-140	7	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	5	30	
Hexachlorocyclopentadiene	2.28	1.67	mg/kg wet	3.333		68	40-140	9	30	
Hexachloroethane	2.09	0.333	mg/kg wet	3.333		63	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.98	0.333	mg/kg wet	3.333		89	40-140	8	30	
Isophorone	2.45	0.333	mg/kg wet	3.333		73	40-140	3	30	
Naphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	5	30	
Nitrobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	5	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	0.2	30	
N-nitrosodiphenylamine	2.87	0.333	mg/kg wet	3.333		86	40-140	8	30	
Pentachlorophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	7	30	
Phenanthrene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130	0.2	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	5	30	
Pyridine	1.59	1.67	mg/kg wet	3.333		48	40-140	0.8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.55		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.04		mg/kg wet	5.000		61	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

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 CI51816 - 3546

<i>Surrogate: 2-Fluorobiphenyl</i>	2.30		mg/kg wet	3.333		69	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.16		mg/kg wet	5.000		63	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.18		mg/kg wet	3.333		65	30-130			
<i>Surrogate: Phenol-d6</i>	3.32		mg/kg wet	5.000		66	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.49		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509519

Notes and Definitions

- Z-10 Soil pH measured in water at 23.9 °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.
- 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: 1509519

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: 15090519
 Date Project Due: 9/22/15
 Days For Project: 2 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 |
| Cooler Temp: <u>7.8</u> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Iced With: <u>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 @ 1615 J 9/18/15

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: 9/18/15 1555
 Date/Time: 9/18/15 1615

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 2 Days
Regulatory State Rhode Island
Is this project for any of the following?
[] CT RCP [] MA MCP [] RGP [] OOD

Company Name Charter Environmental
Contact Person Paul J. Leofanti, Jr.
City Boston State MA
Telephone Number (857) 246-6812 FAX Number
ESS Lab ID Collection Date Collection Time Sample Type Sample Matrix Sample ID

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

Zip Code 02118
Material S&S Loam 2

ESS Lab # 1509519
Reporting Limits RI DEM RDEC

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

Table with columns for Analysis (VOC, VOC Low Level, SVOC, RCRA 8, TPH) and rows for various parameters (Container Type, Volume, Preservation Code, etc.)

Sampled by: M. Polisky-Thielsch
Comments: Please specify "Other" preservative and containers types in this space
Please CC: mpolisky@thielsch.com

Requisitioned by: [Signature] 9/18/15 15:15
Received by: [Signature] 9/18/15 15:15
Requisitioned by: [Signature] 9/18/15 15:15
Received by: [Signature] 9/18/15 15:15



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: 1509520

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 4:19 pm, Sep 22, 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: 1509520

SAMPLE RECEIPT

The following samples were received on September 18, 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 18, 2015 at 16:15.

Lab Number	Sample Name	Matrix	Analysis
1509520-01	Material S&S Loam 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: 1509520

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI52103-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (139% @ 70-130%)

CI52103-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)

1,4-Dioxane (22% @ 20%), 2-Butanone (30% @ 25%), 2-Hexanone (26% @ 25%),
4-Methyl-2-Pentanone (27% @ 25%), Acetone (33% @ 25%), Chloromethane (26% @ 25%),
Di-isopropyl ether (26% @ 25%), Tetrahydrofuran (35% @ 25%), Vinyl Acetate (26% @ 25%), Vinyl
Chloride (27% @ 25%)

8270D Semi-Volatile Organic Compounds

CYI0194-CCV1 [Calibration required quadratic regression \(O\).](#)

2,4-Dinitrophenol (104% @ 80-120%), Benzoic Acid (96% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

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: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
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	ND (2.49)		6010C		1	JP	09/19/15 2:43	2.24	100	CI51749
Barium	28.1 (2.49)		6010C		1	JP	09/19/15 2:43	2.24	100	CI51749
Cadmium	ND (0.50)		6010C		1	JP	09/19/15 2:43	2.24	100	CI51749
Chromium	4.90 (1.00)		6010C		1	JP	09/19/15 2:43	2.24	100	CI51749
Lead	16.0 (4.98)		6010C		1	JP	09/19/15 2:43	2.24	100	CI51749
Mercury	0.073 (0.032)		7471B		1	BJV	09/21/15 12:49	0.68	40	CI51851
Selenium	ND (9.95)		6010C		2	JP	09/19/15 1:34	2.24	100	CI51749
Silver	ND (0.50)		6010C		1	JP	09/19/15 2:43	2.24	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
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 (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1,4-Dioxane	ND (0.0944)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
1-Chlorohexane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
2-Butanone	ND (0.0472)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
2-Chlorotoluene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
2-Hexanone	ND (0.0472)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
4-Chlorotoluene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
4-Methyl-2-Pentanone	ND (0.0472)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Acetone	ND (0.0472)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Benzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Bromobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
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 (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Bromodichloromethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Bromoform	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Bromomethane	ND (0.0094)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Carbon Disulfide	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Chlorobenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Chloroethane	ND (0.0094)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Chloroform	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Chloromethane	ND (0.0094)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Dibromochloromethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Dibromomethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Dichlorodifluoromethane	ND (0.0094)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Diethyl Ether	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Di-isopropyl ether	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Ethylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Isopropylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Methylene Chloride	ND (0.0236)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Naphthalene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
n-Butylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
n-Propylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
sec-Butylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Styrene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
tert-Butylbenzene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Tetrachloroethene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Tetrahydrofuran	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 3
 Date Sampled: 09/18/15 14:00
 Percent Solids: 90
 Initial Volume: 5.9
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1509520
 ESS Laboratory Sample ID: 1509520-01
 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 (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Trichloroethene	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Vinyl Acetate	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Vinyl Chloride	ND (0.0094)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Xylene O	ND (0.0047)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Xylene P,M	ND (0.0094)		8260B Low		1	09/19/15 18:29	CYI0214	CI52103
Xylenes (Total)	ND (0.0094)		8260B Low		1	09/19/15 18:29		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	127 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	86 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	112 %		70-130
<i>Surrogate: Toluene-d8</i>	102 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/21/15 12:51

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	193 (43.3)		8100M		1	09/22/15 1:57	CY10224	CI52117
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		74 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
1,2,4-Trichlorobenzene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
1,2-Dichlorobenzene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
1,3-Dichlorobenzene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
1,4-Dichlorobenzene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,3,4,6-Tetrachlorophenol	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,4,5-Trichlorophenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,4,6-Trichlorophenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,4-Dichlorophenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,4-Dimethylphenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,4-Dinitrophenol	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,4-Dinitrotoluene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2,6-Dinitrotoluene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2-Chloronaphthalene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2-Chlorophenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2-Methylnaphthalene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2-Methylphenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2-Nitroaniline	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
2-Nitrophenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
3,3'-Dichlorobenzidine	ND (0.759)		8270D		1	09/21/15 13:03	CYI0194	CI51816
3+4-Methylphenol	ND (0.759)		8270D		1	09/21/15 13:03	CYI0194	CI51816
3-Nitroaniline	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4,6-Dinitro-2-Methylphenol	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4-Bromophenyl-phenylether	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4-Chloro-3-Methylphenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4-Chloroaniline	ND (0.759)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4-Chloro-phenyl-phenyl ether	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4-Nitroaniline	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
4-Nitrophenol	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Acenaphthene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Acenaphthylene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Acetophenone	ND (0.759)		8270D		1	09/21/15 13:03	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.759)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Anthracene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Azobenzene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzo(a)anthracene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzo(a)pyrene	ND (0.190)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzo(b)fluoranthene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzo(g,h,i)perylene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzo(k)fluoranthene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzoic Acid	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Benzyl Alcohol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
bis(2-Chloroethoxy)methane	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
bis(2-Chloroethyl)ether	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
bis(2-chloroisopropyl)Ether	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
bis(2-Ethylhexyl)phthalate	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Butylbenzylphthalate	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Carbazole	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Chrysene	ND (0.190)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Dibenzo(a,h)Anthracene	ND (0.190)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Dibenzofuran	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Diethylphthalate	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Dimethylphthalate	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Di-n-butylphthalate	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Di-n-octylphthalate	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Fluoranthene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Fluorene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Hexachlorobenzene	ND (0.190)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Hexachlorobutadiene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Hexachlorocyclopentadiene	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Hexachloroethane	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Indeno(1,2,3-cd)Pyrene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Isophorone	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Naphthalene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 3
 Date Sampled: 09/18/15 14:00
 Percent Solids: 90
 Initial Volume: 14.7
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1509520
 ESS Laboratory Sample ID: 1509520-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 9/18/15 16:44

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 (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
N-Nitrosodimethylamine	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
N-Nitroso-Di-n-Propylamine	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
N-nitrosodiphenylamine	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Pentachlorophenol	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Phenanthrene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Phenol	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Pyrene	ND (0.379)		8270D		1	09/21/15 13:03	CYI0194	CI51816
Pyridine	ND (1.90)		8270D		1	09/21/15 13:03	CYI0194	CI51816

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>82 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>77 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>80 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 09/18/15 14:00
Percent Solids: 90

ESS Laboratory Work Order: 1509520
ESS Laboratory Sample ID: 1509520-01
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)	5.83 (N/A)		9045		1	EEM	09/18/15 17:45	S.U.	CI51804
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.8 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

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 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

Batch CI51851 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	32.4	3.54	mg/kg wet	24.90	130	51-149
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LCS Dup

Mercury	31.2	3.30	mg/kg wet	24.90	125	51-149	4	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI52103 - 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: 1509520

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 CI52103 - 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: 1509520

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 CI52103 - 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	0.0568		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,1-Trichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2,2-Tetrachloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2-Trichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloropropene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trimethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichloropropane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

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 CI52103 - 5035

1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130			
1-Chlorohexane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
2,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.267	0.0500	mg/kg wet	0.2500		107	70-130			
2-Chlorotoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.249	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
Acetone	0.290	0.0500	mg/kg wet	0.2500		116	70-130			
Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Bromobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromodichloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Carbon Tetrachloride	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Chloroform	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chloromethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dibromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Ethyl tertiary-butyl ether	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Ethylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Methyl tert-Butyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Methylene Chloride	0.0599	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Styrene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
tert-Butylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrahydrofuran	0.0488	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: 1509520

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 CI52103 - 5035

Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Trichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Trichlorofluoromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Vinyl Acetate	0.0695	0.0050	mg/kg wet	0.05000		139	70-130			B+
Vinyl Chloride	0.0543	0.0100	mg/kg wet	0.05000		109	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0560</i>		mg/kg wet	<i>0.05000</i>		<i>112</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0505</i>		mg/kg wet	<i>0.05000</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0550</i>		mg/kg wet	<i>0.05000</i>		<i>110</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0484</i>		mg/kg wet	<i>0.05000</i>		<i>97</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,1,1-Trichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
1,1,2-Trichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	22	25	
1,1-Dichloroethane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	20	25	
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	14	25	
1,1-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	18	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2,3-Trichloropropane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	19	25	
1,2,4-Trichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
1,2-Dibromo-3-Chloropropane	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	17	25	
1,2-Dibromoethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	14	25	
1,2-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2-Dichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	23	25	
1,2-Dichloropropane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	22	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	9	25	
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,3-Dichloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	16	25	
1,4-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
1,4-Dioxane	0.824	0.100	mg/kg wet	1.000		82	70-130	22	20	D+
1-Chlorohexane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	11	25	
2,2-Dichloropropane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	17	25	
2-Butanone	0.198	0.0500	mg/kg wet	0.2500		79	70-130	30	25	D+
2-Chlorotoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	12	25	
2-Hexanone	0.191	0.0500	mg/kg wet	0.2500		76	70-130	26	25	D+
4-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	11	25	
4-Isopropyltoluene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
4-Methyl-2-Pentanone	0.187	0.0500	mg/kg wet	0.2500		75	70-130	27	25	D+
Acetone	0.208	0.0500	mg/kg wet	0.2500		83	70-130	33	25	D+



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1509520

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 CI52103 - 5035

Benzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	19	25	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	12	25	
Bromodichloromethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	19	25	
Bromoform	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	8	25	
Bromomethane	0.0440	0.0100	mg/kg wet	0.05000		88	70-130	18	25	
Carbon Disulfide	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	17	25	
Carbon Tetrachloride	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	13	25	
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Chloroethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130	24	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
Chloromethane	0.0405	0.0100	mg/kg wet	0.05000		81	70-130	26	25	D+
cis-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	15	25	
cis-1,3-Dichloropropene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130	19	25	
Dibromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
Dibromomethane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	20	25	
Dichlorodifluoromethane	0.0462	0.0100	mg/kg wet	0.05000		92	70-130	18	25	
Diethyl Ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	21	25	
Di-isopropyl ether	0.0411	0.0050	mg/kg wet	0.05000		82	70-130	26	25	D+
Ethyl tertiary-butyl ether	0.0396	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Ethylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	10	25	
Hexachlorobutadiene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
Isopropylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Methyl tert-Butyl Ether	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Methylene Chloride	0.0495	0.0250	mg/kg wet	0.05000		99	70-130	19	25	
Naphthalene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	9	25	
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	11	25	
sec-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Styrene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	9	25	
tert-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Tertiary-amyl methyl ether	0.0403	0.0050	mg/kg wet	0.05000		81	70-130	21	25	
Tetrachloroethene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Tetrahydrofuran	0.0341	0.0050	mg/kg wet	0.05000		68	70-130	35	25	D+
Toluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	14	25	
trans-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	16	25	
trans-1,3-Dichloropropene	0.0391	0.0050	mg/kg wet	0.05000		78	70-130	20	25	
Trichloroethene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	15	25	
Trichlorofluoromethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	14	25	
Vinyl Acetate	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	26	25	D+
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130	27	25	D+
Xylene O	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
Xylene P,M	0.0955	0.0100	mg/kg wet	0.1000		95	70-130	8	25	
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0488		mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1509520

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 CI52103 - 5035

Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0473		mg/kg wet	0.05000		95	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52117 - 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	4.72		mg/kg wet	5.000		94	40-140			
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LCS

Decane (C10)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		116	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		81	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		108	40-140			

Surrogate: O-Terphenyl	4.37		mg/kg wet	5.000		87	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	15	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140	17	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	16	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CI52117 - 3546

Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	17	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	14	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	16	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	23	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	15	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	12	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	17	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140	16	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	17	25	
Total Petroleum Hydrocarbons	30.8	37.5	mg/kg wet	35.00		88	40-140	11	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		96	40-140	12	25	

Surrogate: O-Terphenyl 3.76 mg/kg wet 5.000 75 40-140

8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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 CI51816 - 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: 1509520

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 CI51816 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.39		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.45		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.29		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.97		mg/kg wet	3.333		89	30-130			

LCS

1,1-Biphenyl	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,2,4-Trichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.19	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140			
2,3,4,6-Tetrachlorophenol	2.05	1.67	mg/kg wet	3.333		61	30-130			
2,4,5-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130			
2,4,6-Trichlorophenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.59	0.333	mg/kg wet	3.333		78	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	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	2.27	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130			
2-Methylnaphthalene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2-Methylphenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2-Nitroaniline	2.32	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
3,3'-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.91	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.87	0.333	mg/kg wet	3.333		86	40-140			
4,6-Dinitro-2-Methylphenol	2.60	1.67	mg/kg wet	3.333		78	30-130			
4-Bromophenyl-phenylether	2.65	0.333	mg/kg wet	3.333		80	40-140			
4-Chloro-3-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
4-Chloroaniline	2.18	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	3.04	0.333	mg/kg wet	3.333		91	40-140			
4-Nitrophenol	2.49	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Acenaphthylene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Acetophenone	2.36	0.667	mg/kg wet	3.333		71	40-140			
Aniline	1.85	0.667	mg/kg wet	3.333		55	40-140			
Anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Azobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)anthracene	2.76	0.333	mg/kg wet	3.333		83	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

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 CI51816 - 3546

Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.51	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.34	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-Ethylhexyl)phthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Butylbenzylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140			
Carbazole	2.98	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140			
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140			
Dimethylphthalate	2.60	0.333	mg/kg wet	3.333		78	40-140			
Di-n-butylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorobenzene	2.46	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.08	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorocyclopentadiene	2.07	1.67	mg/kg wet	3.333		62	40-140			
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.37	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Nitrobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	2.16	0.333	mg/kg wet	3.333		65	40-140			
N-Nitroso-Di-n-Propylamine	2.32	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.65	0.333	mg/kg wet	3.333		80	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Pyridine	1.58	1.67	mg/kg wet	3.333		47	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.02		mg/kg wet	3.333		61	30-130			
Surrogate: 2,4,6-Tribromophenol	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Fluorobiphenyl	2.23		mg/kg wet	3.333		67	30-130			
Surrogate: 2-Fluorophenol	3.28		mg/kg wet	5.000		66	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		66	30-130			
Surrogate: Phenol-d6	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: p-Terphenyl-d14	2.50		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

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 CI51816 - 3546

LCS Dup										
1,1-Biphenyl	2.64	0.333	mg/kg wet	3.333		79	40-140	7	30	
1,2,4-Trichlorobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.6	30	
1,3-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.3	30	
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.15	1.67	mg/kg wet	3.333		65	30-130	5	30	
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	5	30	
2,4,6-Trichlorophenol	2.96	0.333	mg/kg wet	3.333		89	30-130	7	30	
2,4-Dichlorophenol	2.55	0.333	mg/kg wet	3.333		77	30-130	6	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	4	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4-Dinitrotoluene	3.01	0.333	mg/kg wet	3.333		90	40-140	4	30	
2,6-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
2-Chloronaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	0.2	30	
2-Methylnaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	0.6	30	
2-Nitroaniline	2.42	0.333	mg/kg wet	3.333		72	40-140	4	30	
2-Nitrophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3'-Dichlorobenzidine	2.58	0.667	mg/kg wet	3.333		77	40-140	9	30	
3+4-Methylphenol	4.87	0.667	mg/kg wet	6.667		73	30-130	0.9	30	
3-Nitroaniline	2.95	0.333	mg/kg wet	3.333		89	40-140	3	30	
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130	6	30	
4-Bromophenyl-phenylether	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
4-Chloro-3-Methylphenol	2.55	0.333	mg/kg wet	3.333		77	30-130	0.8	30	
4-Chloroaniline	2.03	0.667	mg/kg wet	3.333		61	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.70	0.333	mg/kg wet	3.333		81	40-140	5	30	
4-Nitroaniline	3.31	0.333	mg/kg wet	3.333		99	40-140	9	30	
4-Nitrophenol	2.52	1.67	mg/kg wet	3.333		76	30-130	1	30	
Acenaphthene	2.69	0.333	mg/kg wet	3.333		81	40-140	5	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
Acetophenone	2.33	0.667	mg/kg wet	3.333		70	40-140	1	30	
Aniline	1.91	0.667	mg/kg wet	3.333		57	40-140	3	30	
Anthracene	2.95	0.333	mg/kg wet	3.333		89	40-140	7	30	
Azobenzene	2.97	0.333	mg/kg wet	3.333		89	40-140	9	30	
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(a)pyrene	3.06	0.167	mg/kg wet	3.333		92	40-140	6	30	
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Benzo(g,h,i)perylene	2.91	0.333	mg/kg wet	3.333		87	40-140	8	30	
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzoic Acid	2.57	1.67	mg/kg wet	3.333		77	40-140	2	30	
Benzyl Alcohol	2.24	0.333	mg/kg wet	3.333		67	40-140	5	30	
bis(2-Chloroethoxy)methane	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140	0.07	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CI51816 - 3546										
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140	0.2	30	
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140	4	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	5	30	
Carbazole	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Chrysene	3.00	0.167	mg/kg wet	3.333		90	40-140	7	30	
Dibenzo(a,h)Anthracene	2.98	0.167	mg/kg wet	3.333		89	40-140	7	30	
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140	4	30	
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140	3	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Di-n-octylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140	1	30	
Fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	5	30	
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140	4	30	
Hexachlorobenzene	2.64	0.167	mg/kg wet	3.333		79	40-140	7	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	5	30	
Hexachlorocyclopentadiene	2.28	1.67	mg/kg wet	3.333		68	40-140	9	30	
Hexachloroethane	2.09	0.333	mg/kg wet	3.333		63	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.98	0.333	mg/kg wet	3.333		89	40-140	8	30	
Isophorone	2.45	0.333	mg/kg wet	3.333		73	40-140	3	30	
Naphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	5	30	
Nitrobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	5	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	0.2	30	
N-nitrosodiphenylamine	2.87	0.333	mg/kg wet	3.333		86	40-140	8	30	
Pentachlorophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	7	30	
Phenanthrene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130	0.2	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	5	30	
Pyridine	1.59	1.67	mg/kg wet	3.333		48	40-140	0.8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.55		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.04		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.30		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		65	30-130			
Surrogate: Phenol-d6	3.32		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.49		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509520

Notes and Definitions

- Z-10 Soil pH measured in water at 23.8 °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.
- 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: 1509520

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: 15090520
 Date Project Due: 9/22/15
 Days For Project: 2 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: **7.8**

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 @ 1615 9/18/15

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: 9/18/15 1556

Reviewed By: [Signature]

Date/Time: 9/18/15 1615



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: 1509521

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 4:20 pm, Sep 22, 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: 1509521

SAMPLE RECEIPT

The following samples were received on September 18, 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 18, 2015 at 16:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509521-01	Material S&S Loam 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: 1509521

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI52103-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (139% @ 70-130%)

CI52103-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)

1,4-Dioxane (22% @ 20%), 2-Butanone (30% @ 25%), 2-Hexanone (26% @ 25%),
4-Methyl-2-Pentanone (27% @ 25%), Acetone (33% @ 25%), Chloromethane (26% @ 25%),
Di-isopropyl ether (26% @ 25%), Tetrahydrofuran (35% @ 25%), Vinyl Acetate (26% @ 25%), Vinyl
Chloride (27% @ 25%)

8270D Semi-Volatile Organic Compounds

CYI0194-CCV1 [Calibration required quadratic regression \(O\).](#)

2,4-Dinitrophenol (104% @ 80-120%), Benzoic Acid (96% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
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	ND (2.39)		6010C		1	JP	09/19/15 2:47	2.32	100	CI51749
Barium	28.6 (2.39)		6010C		1	JP	09/19/15 2:47	2.32	100	CI51749
Cadmium	ND (0.48)		6010C		1	JP	09/19/15 2:47	2.32	100	CI51749
Chromium	4.69 (0.96)		6010C		1	JP	09/19/15 2:47	2.32	100	CI51749
Lead	21.9 (4.78)		6010C		1	JP	09/19/15 2:47	2.32	100	CI51749
Mercury	0.038 (0.035)		7471B		1	BJV	09/21/15 12:51	0.63	40	CI51851
Selenium	ND (9.55)		6010C		2	JP	09/19/15 1:39	2.32	100	CI51749
Silver	ND (0.48)		6010C		1	JP	09/19/15 2:47	2.32	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
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	09/19/15 18:57	CYI0214	CI52103
1,1,1-Trichloroethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,1,2,2-Tetrachloroethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,1,2-Trichloroethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,1-Dichloroethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,1-Dichloroethene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,1-Dichloropropene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2,3-Trichlorobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2,3-Trichloropropane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2,4-Trichlorobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2,4-Trimethylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2-Dibromo-3-Chloropropane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2-Dibromoethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2-Dichlorobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2-Dichloroethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,2-Dichloropropane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,3,5-Trimethylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,3-Dichlorobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,3-Dichloropropane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,4-Dichlorobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1,4-Dioxane	ND (0.109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
1-Chlorohexane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
2,2-Dichloropropane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
2-Butanone	ND (0.0543)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
2-Chlorotoluene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
2-Hexanone	ND (0.0543)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
4-Chlorotoluene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
4-Isopropyltoluene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
4-Methyl-2-Pentanone	ND (0.0543)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Acetone	ND (0.0543)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Benzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Bromobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
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	09/19/15 18:57	CYI0214	CI52103
Bromodichloromethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Bromoform	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Bromomethane	ND (0.0109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Carbon Disulfide	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Carbon Tetrachloride	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Chlorobenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Chloroethane	ND (0.0109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Chloroform	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Chloromethane	ND (0.0109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
cis-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
cis-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Dibromochloromethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Dibromomethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Dichlorodifluoromethane	ND (0.0109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Diethyl Ether	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Di-isopropyl ether	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Ethyl tertiary-butyl ether	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Ethylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Hexachlorobutadiene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Isopropylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Methyl tert-Butyl Ether	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Methylene Chloride	ND (0.0272)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Naphthalene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
n-Butylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
n-Propylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
sec-Butylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Styrene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
tert-Butylbenzene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Tertiary-amyl methyl ether	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Tetrachloroethene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Tetrahydrofuran	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
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	09/19/15 18:57	CYI0214	CI52103
trans-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
trans-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Trichloroethene	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Trichlorofluoromethane	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Vinyl Acetate	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Vinyl Chloride	ND (0.0109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Xylene O	ND (0.0054)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Xylene P,M	ND (0.0109)		8260B Low		1	09/19/15 18:57	CYI0214	CI52103
Xylenes (Total)	ND (0.0109)		8260B Low		1	09/19/15 18:57		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>122 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</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: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/21/15 12:51

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	147 (42.6)		8100M		1	09/22/15 2:36	CY10224	CI52117
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		77 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
1,2,4-Trichlorobenzene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
1,2-Dichlorobenzene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
1,3-Dichlorobenzene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
1,4-Dichlorobenzene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,3,4,6-Tetrachlorophenol	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,4,5-Trichlorophenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,4,6-Trichlorophenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,4-Dichlorophenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,4-Dimethylphenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,4-Dinitrophenol	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,4-Dinitrotoluene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2,6-Dinitrotoluene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2-Chloronaphthalene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2-Chlorophenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2-Methylnaphthalene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2-Methylphenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2-Nitroaniline	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
2-Nitrophenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
3,3'-Dichlorobenzidine	ND (0.765)		8270D		1	09/21/15 13:40	CYI0194	CI51816
3+4-Methylphenol	ND (0.765)		8270D		1	09/21/15 13:40	CYI0194	CI51816
3-Nitroaniline	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4,6-Dinitro-2-Methylphenol	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4-Bromophenyl-phenylether	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4-Chloro-3-Methylphenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4-Chloroaniline	ND (0.765)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4-Chloro-phenyl-phenyl ether	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4-Nitroaniline	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
4-Nitrophenol	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Acenaphthene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Acenaphthylene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Acetophenone	ND (0.765)		8270D		1	09/21/15 13:40	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.765)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Anthracene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Azobenzene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzo(a)anthracene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzo(a)pyrene	ND (0.191)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzo(b)fluoranthene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzo(g,h,i)perylene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzo(k)fluoranthene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzoic Acid	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Benzyl Alcohol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
bis(2-Chloroethoxy)methane	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
bis(2-Chloroethyl)ether	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
bis(2-chloroisopropyl)Ether	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
bis(2-Ethylhexyl)phthalate	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Butylbenzylphthalate	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Carbazole	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Chrysene	0.288 (0.191)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Dibenzo(a,h)Anthracene	ND (0.191)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Dibenzofuran	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Diethylphthalate	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Dimethylphthalate	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Di-n-butylphthalate	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Di-n-octylphthalate	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Fluoranthene	1.06 (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Fluorene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Hexachlorobenzene	ND (0.191)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Hexachlorobutadiene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Hexachlorocyclopentadiene	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Hexachloroethane	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Indeno(1,2,3-cd)Pyrene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Isophorone	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Naphthalene	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 4
 Date Sampled: 09/18/15 14:30
 Percent Solids: 90
 Initial Volume: 14.5
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1509521
 ESS Laboratory Sample ID: 1509521-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 9/18/15 16:44

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 (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
N-Nitrosodimethylamine	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
N-Nitroso-Di-n-Propylamine	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
N-nitrosodiphenylamine	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Pentachlorophenol	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Phenanthrene	0.558 (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Phenol	ND (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Pyrene	0.633 (0.382)		8270D		1	09/21/15 13:40	CYI0194	CI51816
Pyridine	ND (1.91)		8270D		1	09/21/15 13:40	CYI0194	CI51816

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	48 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	72 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	54 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	58 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	53 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	53 %		30-130
<i>Surrogate: Phenol-d6</i>	59 %		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: Material S&S Loam 4
Date Sampled: 09/18/15 14:30
Percent Solids: 90

ESS Laboratory Work Order: 1509521
ESS Laboratory Sample ID: 1509521-01
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)	5.78 (N/A)		9045		1	EEM	09/18/15 17:45	S.U.	CI51804
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.3 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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 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

Batch CI51851 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	32.4	3.54	mg/kg wet	24.90	130	51-149
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LCS Dup

Mercury	31.2	3.30	mg/kg wet	24.90	125	51-149	4	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI52103 - 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: 1509521

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 CI52103 - 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: 1509521

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 CI52103 - 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	0.0568		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,1-Trichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2,2-Tetrachloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2-Trichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloropropene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trimethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichloropropane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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 CI52103 - 5035

1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130			
1-Chlorohexane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
2,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.267	0.0500	mg/kg wet	0.2500		107	70-130			
2-Chlorotoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.249	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
Acetone	0.290	0.0500	mg/kg wet	0.2500		116	70-130			
Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Bromobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromodichloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Carbon Tetrachloride	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Chloroform	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chloromethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dibromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Ethyl tertiary-butyl ether	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Ethylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Methyl tert-Butyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Methylene Chloride	0.0599	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Styrene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
tert-Butylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrahydrofuran	0.0488	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: 1509521

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 CI52103 - 5035

Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Trichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Trichlorofluoromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Vinyl Acetate	0.0695	0.0050	mg/kg wet	0.05000		139	70-130			B+
Vinyl Chloride	0.0543	0.0100	mg/kg wet	0.05000		109	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0560		mg/kg wet	0.05000		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0505		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0550		mg/kg wet	0.05000		110	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,1,1-Trichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
1,1,2-Trichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	22	25	
1,1-Dichloroethane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	20	25	
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	14	25	
1,1-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	18	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2,3-Trichloropropane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	19	25	
1,2,4-Trichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
1,2-Dibromo-3-Chloropropane	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	17	25	
1,2-Dibromoethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	14	25	
1,2-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2-Dichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	23	25	
1,2-Dichloropropane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	22	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	9	25	
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,3-Dichloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	16	25	
1,4-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
1,4-Dioxane	0.824	0.100	mg/kg wet	1.000		82	70-130	22	20	D+
1-Chlorohexane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	11	25	
2,2-Dichloropropane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	17	25	
2-Butanone	0.198	0.0500	mg/kg wet	0.2500		79	70-130	30	25	D+
2-Chlorotoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	12	25	
2-Hexanone	0.191	0.0500	mg/kg wet	0.2500		76	70-130	26	25	D+
4-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	11	25	
4-Isopropyltoluene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
4-Methyl-2-Pentanone	0.187	0.0500	mg/kg wet	0.2500		75	70-130	27	25	D+
Acetone	0.208	0.0500	mg/kg wet	0.2500		83	70-130	33	25	D+



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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 C152103 - 5035

Benzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	19	25	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	12	25	
Bromodichloromethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	19	25	
Bromoform	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	8	25	
Bromomethane	0.0440	0.0100	mg/kg wet	0.05000		88	70-130	18	25	
Carbon Disulfide	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	17	25	
Carbon Tetrachloride	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	13	25	
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Chloroethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130	24	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
Chloromethane	0.0405	0.0100	mg/kg wet	0.05000		81	70-130	26	25	D+
cis-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	15	25	
cis-1,3-Dichloropropene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130	19	25	
Dibromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
Dibromomethane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	20	25	
Dichlorodifluoromethane	0.0462	0.0100	mg/kg wet	0.05000		92	70-130	18	25	
Diethyl Ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	21	25	
Di-isopropyl ether	0.0411	0.0050	mg/kg wet	0.05000		82	70-130	26	25	D+
Ethyl tertiary-butyl ether	0.0396	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Ethylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	10	25	
Hexachlorobutadiene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
Isopropylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Methyl tert-Butyl Ether	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Methylene Chloride	0.0495	0.0250	mg/kg wet	0.05000		99	70-130	19	25	
Naphthalene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	9	25	
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	11	25	
sec-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Styrene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	9	25	
tert-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Tertiary-amyl methyl ether	0.0403	0.0050	mg/kg wet	0.05000		81	70-130	21	25	
Tetrachloroethene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Tetrahydrofuran	0.0341	0.0050	mg/kg wet	0.05000		68	70-130	35	25	D+
Toluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	14	25	
trans-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	16	25	
trans-1,3-Dichloropropene	0.0391	0.0050	mg/kg wet	0.05000		78	70-130	20	25	
Trichloroethene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	15	25	
Trichlorofluoromethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	14	25	
Vinyl Acetate	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	26	25	D+
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130	27	25	D+
Xylene O	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
Xylene P,M	0.0955	0.0100	mg/kg wet	0.1000		95	70-130	8	25	
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0488		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: 1509521

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 CI52103 - 5035

Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0473		mg/kg wet	0.05000		95	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52117 - 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	4.72		mg/kg wet	5.000		94	40-140			
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LCS

Decane (C10)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		116	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		81	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		108	40-140			

Surrogate: O-Terphenyl	4.37		mg/kg wet	5.000		87	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	15	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140	17	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	16	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
8100M Total Petroleum Hydrocarbons										
Batch CI52117 - 3546										
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	17	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	14	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	16	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	23	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	15	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	12	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	17	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140	16	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	17	25	
Total Petroleum Hydrocarbons	30.8	37.5	mg/kg wet	35.00		88	40-140	11	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		96	40-140	12	25	
<i>Surrogate: O-Terphenyl</i>	<i>3.76</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>75</i>	<i>40-140</i>			

8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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 CI51816 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.39		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.45		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.29		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.97		mg/kg wet	3.333		89	30-130			

LCS

1,1-Biphenyl	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,2,4-Trichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.19	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140			
2,3,4,6-Tetrachlorophenol	2.05	1.67	mg/kg wet	3.333		61	30-130			
2,4,5-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130			
2,4,6-Trichlorophenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.59	0.333	mg/kg wet	3.333		78	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	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	2.27	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130			
2-Methylnaphthalene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2-Methylphenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2-Nitroaniline	2.32	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
3,3'-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.91	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.87	0.333	mg/kg wet	3.333		86	40-140			
4,6-Dinitro-2-Methylphenol	2.60	1.67	mg/kg wet	3.333		78	30-130			
4-Bromophenyl-phenylether	2.65	0.333	mg/kg wet	3.333		80	40-140			
4-Chloro-3-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
4-Chloroaniline	2.18	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	3.04	0.333	mg/kg wet	3.333		91	40-140			
4-Nitrophenol	2.49	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Acenaphthylene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Acetophenone	2.36	0.667	mg/kg wet	3.333		71	40-140			
Aniline	1.85	0.667	mg/kg wet	3.333		55	40-140			
Anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Azobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)anthracene	2.76	0.333	mg/kg wet	3.333		83	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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 CI51816 - 3546

Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.51	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.34	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-Ethylhexyl)phthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Butylbenzylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140			
Carbazole	2.98	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140			
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140			
Dimethylphthalate	2.60	0.333	mg/kg wet	3.333		78	40-140			
Di-n-butylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorobenzene	2.46	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.08	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorocyclopentadiene	2.07	1.67	mg/kg wet	3.333		62	40-140			
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.37	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Nitrobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	2.16	0.333	mg/kg wet	3.333		65	40-140			
N-Nitroso-Di-n-Propylamine	2.32	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.65	0.333	mg/kg wet	3.333		80	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Pyridine	1.58	1.67	mg/kg wet	3.333		47	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.02		mg/kg wet	3.333		61	30-130			
Surrogate: 2,4,6-Tribromophenol	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Fluorobiphenyl	2.23		mg/kg wet	3.333		67	30-130			
Surrogate: 2-Fluorophenol	3.28		mg/kg wet	5.000		66	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		66	30-130			
Surrogate: Phenol-d6	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: p-Terphenyl-d14	2.50		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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 CI51816 - 3546

LCS Dup										
1,1-Biphenyl	2.64	0.333	mg/kg wet	3.333		79	40-140	7	30	
1,2,4-Trichlorobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.6	30	
1,3-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.3	30	
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.15	1.67	mg/kg wet	3.333		65	30-130	5	30	
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	5	30	
2,4,6-Trichlorophenol	2.96	0.333	mg/kg wet	3.333		89	30-130	7	30	
2,4-Dichlorophenol	2.55	0.333	mg/kg wet	3.333		77	30-130	6	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	4	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4-Dinitrotoluene	3.01	0.333	mg/kg wet	3.333		90	40-140	4	30	
2,6-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
2-Chloronaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	0.2	30	
2-Methylnaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	0.6	30	
2-Nitroaniline	2.42	0.333	mg/kg wet	3.333		72	40-140	4	30	
2-Nitrophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3'-Dichlorobenzidine	2.58	0.667	mg/kg wet	3.333		77	40-140	9	30	
3+4-Methylphenol	4.87	0.667	mg/kg wet	6.667		73	30-130	0.9	30	
3-Nitroaniline	2.95	0.333	mg/kg wet	3.333		89	40-140	3	30	
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130	6	30	
4-Bromophenyl-phenylether	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
4-Chloro-3-Methylphenol	2.55	0.333	mg/kg wet	3.333		77	30-130	0.8	30	
4-Chloroaniline	2.03	0.667	mg/kg wet	3.333		61	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.70	0.333	mg/kg wet	3.333		81	40-140	5	30	
4-Nitroaniline	3.31	0.333	mg/kg wet	3.333		99	40-140	9	30	
4-Nitrophenol	2.52	1.67	mg/kg wet	3.333		76	30-130	1	30	
Acenaphthene	2.69	0.333	mg/kg wet	3.333		81	40-140	5	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
Acetophenone	2.33	0.667	mg/kg wet	3.333		70	40-140	1	30	
Aniline	1.91	0.667	mg/kg wet	3.333		57	40-140	3	30	
Anthracene	2.95	0.333	mg/kg wet	3.333		89	40-140	7	30	
Azobenzene	2.97	0.333	mg/kg wet	3.333		89	40-140	9	30	
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(a)pyrene	3.06	0.167	mg/kg wet	3.333		92	40-140	6	30	
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Benzo(g,h,i)perylene	2.91	0.333	mg/kg wet	3.333		87	40-140	8	30	
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzoic Acid	2.57	1.67	mg/kg wet	3.333		77	40-140	2	30	
Benzyl Alcohol	2.24	0.333	mg/kg wet	3.333		67	40-140	5	30	
bis(2-Chloroethoxy)methane	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140	0.07	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

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 CI51816 - 3546

bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140	0.2	30	
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140	4	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	5	30	
Carbazole	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Chrysene	3.00	0.167	mg/kg wet	3.333		90	40-140	7	30	
Dibenzo(a,h)Anthracene	2.98	0.167	mg/kg wet	3.333		89	40-140	7	30	
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140	4	30	
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140	3	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Di-n-octylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140	1	30	
Fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	5	30	
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140	4	30	
Hexachlorobenzene	2.64	0.167	mg/kg wet	3.333		79	40-140	7	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	5	30	
Hexachlorocyclopentadiene	2.28	1.67	mg/kg wet	3.333		68	40-140	9	30	
Hexachloroethane	2.09	0.333	mg/kg wet	3.333		63	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.98	0.333	mg/kg wet	3.333		89	40-140	8	30	
Isophorone	2.45	0.333	mg/kg wet	3.333		73	40-140	3	30	
Naphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	5	30	
Nitrobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	5	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	0.2	30	
N-nitrosodiphenylamine	2.87	0.333	mg/kg wet	3.333		86	40-140	8	30	
Pentachlorophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	7	30	
Phenanthrene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130	0.2	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	5	30	
Pyridine	1.59	1.67	mg/kg wet	3.333		48	40-140	0.8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.55		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.04		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.30		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		65	30-130			
Surrogate: Phenol-d6	3.32		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.49		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509521

Notes and Definitions

- Z-10 Soil pH measured in water at 23.3 °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.
- 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: 1509521

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: 15090521
 Date Project Due: 9/22/15
 Days For Project: 2 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: 7.8</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 @ 1615 JF 9/18/15

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: 9/18/15 1559
 Date/Time: 9/18/15 1615

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 2 Days

Regulatory State Rhode Island

Is this project for any of the following?:

OCT RCP MA MCP RGP DOD

Project # 74-15-0002.134 Project Name Texttron Providence

Address 500 Harrison Avenue, Suite 4R

City Boston State MA Zip Code 02118 PO #

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

ESS Lab ID Collection Date Time Sample Type Sample Matrix Sample ID

1 9/18 14:30 Grab Soil Material S&S Loam 4

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

PH: Corrosivity 9045

VOC Low Level

SVOC

RCRA 8

TPH

Reporting Limits RI DEM RDEC

Electronic Deliverables Data Checker Other (Please Specify ->)

Excel

ESS Lab # 1509521

Laboratory Use Only

Sampled by: M. Polsky-Thielsch

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

Cooler Present: yes Drop Off Pickup

Seals Intact: no Drop Off Pickup

Cooler Temperature: 78 5-9/18/15 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)

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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: 1509522

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 4:21 pm, Sep 22, 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: 1509522

SAMPLE RECEIPT

The following samples were received on September 18, 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 18, 2015 at 16:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1509522-01	Material S&S Loam 5	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: 1509522

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI52103-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (139% @ 70-130%)

CI52103-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)

1,4-Dioxane (22% @ 20%), 2-Butanone (30% @ 25%), 2-Hexanone (26% @ 25%),
4-Methyl-2-Pentanone (27% @ 25%), Acetone (33% @ 25%), Chloromethane (26% @ 25%),
Di-isopropyl ether (26% @ 25%), Tetrahydrofuran (35% @ 25%), Vinyl Acetate (26% @ 25%), Vinyl
Chloride (27% @ 25%)

8270D Semi-Volatile Organic Compounds

CYI0194-CCV1 [Calibration required quadratic regression \(O\).](#)

2,4-Dinitrophenol (104% @ 80-120%), Benzoic Acid (96% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

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: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
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	ND (2.46)		6010C		1	JP	09/19/15 2:52	2.26	100	CI51749
Barium	30.3 (2.46)		6010C		1	JP	09/19/15 2:52	2.26	100	CI51749
Cadmium	ND (0.49)		6010C		1	JP	09/19/15 2:52	2.26	100	CI51749
Chromium	5.06 (0.99)		6010C		1	JP	09/19/15 2:52	2.26	100	CI51749
Lead	14.2 (4.93)		6010C		1	JP	09/19/15 2:52	2.26	100	CI51749
Mercury	ND (0.037)		7471B		1	BJV	09/21/15 12:53	0.6	40	CI51851
Selenium	ND (9.85)		6010C		2	JP	09/19/15 1:44	2.26	100	CI51749
Silver	ND (0.49)		6010C		1	JP	09/19/15 2:52	2.26	100	CI51749



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
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 (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,1,2,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1,4-Dioxane	ND (0.0960)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
1-Chlorohexane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
2-Butanone	ND (0.0480)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
2-Chlorotoluene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
2-Hexanone	ND (0.0480)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
4-Chlorotoluene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
4-Methyl-2-Pentanone	ND (0.0480)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Acetone	ND (0.0480)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Benzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Bromobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 5
 Date Sampled: 09/18/15 14:45
 Percent Solids: 90
 Initial Volume: 5.8
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1509522
 ESS Laboratory Sample ID: 1509522-01
 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 (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Bromodichloromethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Bromoform	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Bromomethane	ND (0.0096)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Carbon Disulfide	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Chlorobenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Chloroethane	ND (0.0096)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Chloroform	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Chloromethane	ND (0.0096)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Dibromochloromethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Dibromomethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Dichlorodifluoromethane	ND (0.0096)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Diethyl Ether	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Di-isopropyl ether	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Ethylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Isopropylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Methylene Chloride	ND (0.0240)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Naphthalene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
n-Butylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
n-Propylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
sec-Butylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Styrene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
tert-Butylbenzene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Tetrachloroethene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Tetrahydrofuran	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 5
 Date Sampled: 09/18/15 14:45
 Percent Solids: 90
 Initial Volume: 5.8
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1509522
 ESS Laboratory Sample ID: 1509522-01
 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 (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Trichloroethene	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Vinyl Acetate	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Vinyl Chloride	ND (0.0096)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Xylene O	ND (0.0048)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Xylene P,M	ND (0.0096)		8260B Low		1	09/19/15 19:26	CYI0214	CI52103
Xylenes (Total)	ND (0.0096)		8260B Low		1	09/19/15 19:26		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>125 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</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: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/21/15 12:51

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	159 (43.0)		8100M		1	09/22/15 3:15	CY10224	CI52117
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		75 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
1,2,4-Trichlorobenzene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
1,2-Dichlorobenzene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
1,3-Dichlorobenzene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
1,4-Dichlorobenzene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,3,4,6-Tetrachlorophenol	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,4,5-Trichlorophenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,4,6-Trichlorophenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,4-Dichlorophenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,4-Dimethylphenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,4-Dinitrophenol	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,4-Dinitrotoluene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2,6-Dinitrotoluene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2-Chloronaphthalene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2-Chlorophenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2-Methylnaphthalene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2-Methylphenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2-Nitroaniline	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
2-Nitrophenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
3,3'-Dichlorobenzidine	ND (0.758)		8270D		1	09/21/15 14:16	CYI0194	CI51816
3+4-Methylphenol	ND (0.758)		8270D		1	09/21/15 14:16	CYI0194	CI51816
3-Nitroaniline	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4,6-Dinitro-2-Methylphenol	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4-Bromophenyl-phenylether	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4-Chloro-3-Methylphenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4-Chloroaniline	ND (0.758)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4-Chloro-phenyl-phenyl ether	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4-Nitroaniline	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
4-Nitrophenol	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Acenaphthene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Acenaphthylene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Acetophenone	ND (0.758)		8270D		1	09/21/15 14:16	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.758)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Anthracene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Azobenzene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzo(a)anthracene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzo(a)pyrene	ND (0.190)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzo(b)fluoranthene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzo(g,h,i)perylene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzo(k)fluoranthene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzoic Acid	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Benzyl Alcohol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
bis(2-Chloroethoxy)methane	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
bis(2-Chloroethyl)ether	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
bis(2-chloroisopropyl)Ether	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
bis(2-Ethylhexyl)phthalate	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Butylbenzylphthalate	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Carbazole	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Chrysene	ND (0.190)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Dibenzo(a,h)Anthracene	ND (0.190)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Dibenzofuran	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Diethylphthalate	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Dimethylphthalate	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Di-n-butylphthalate	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Di-n-octylphthalate	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Fluoranthene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Fluorene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Hexachlorobenzene	ND (0.190)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Hexachlorobutadiene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Hexachlorocyclopentadiene	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Hexachloroethane	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Indeno(1,2,3-cd)Pyrene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Isophorone	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Naphthalene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 9/18/15 16:44

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 (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
N-Nitrosodimethylamine	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
N-Nitroso-Di-n-Propylamine	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
N-nitrosodiphenylamine	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Pentachlorophenol	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Phenanthrene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Phenol	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Pyrene	ND (0.378)		8270D		1	09/21/15 14:16	CYI0194	CI51816
Pyridine	ND (1.90)		8270D		1	09/21/15 14:16	CYI0194	CI51816

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>48 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>75 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>55 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>56 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>54 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>54 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>59 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>71 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 09/18/15 14:45
Percent Solids: 90

ESS Laboratory Work Order: 1509522
ESS Laboratory Sample ID: 1509522-01
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)	5.81 (N/A)		9045		1	EEM	09/18/15 17:45	S.U.	CI51804
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.3 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

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 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

Batch CI51851 - 245.1/7470A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	32.4	3.54	mg/kg wet	24.90	130	51-149
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LCS Dup

Mercury	31.2	3.30	mg/kg wet	24.90	125	51-149	4	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI52103 - 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: 1509522

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 CI52103 - 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: 1509522

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 CI52103 - 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	0.0568		mg/kg wet	0.05000		114	70-130			
Surrogate: 4-Bromofluorobenzene	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0487		mg/kg wet	0.05000		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,1-Trichloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2,2-Tetrachloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2-Trichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,1-Dichloropropene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,4-Trimethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichloropropane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

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 CI52103 - 5035

1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130			
1-Chlorohexane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
2,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.267	0.0500	mg/kg wet	0.2500		107	70-130			
2-Chlorotoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.249	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.246	0.0500	mg/kg wet	0.2500		98	70-130			
Acetone	0.290	0.0500	mg/kg wet	0.2500		116	70-130			
Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
Bromobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromodichloromethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
Carbon Disulfide	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Carbon Tetrachloride	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Chloroethane	0.0526	0.0100	mg/kg wet	0.05000		105	70-130			
Chloroform	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chloromethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
cis-1,2-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Dibromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromomethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Ethyl tertiary-butyl ether	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Ethylbenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Methyl tert-Butyl Ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Methylene Chloride	0.0599	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
sec-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Styrene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
tert-Butylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrahydrofuran	0.0488	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: 1509522

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 CI52103 - 5035

Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
trans-1,3-Dichloropropene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Trichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Trichlorofluoromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Vinyl Acetate	0.0695	0.0050	mg/kg wet	0.05000		139	70-130			B+
Vinyl Chloride	0.0543	0.0100	mg/kg wet	0.05000		109	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0560		mg/kg wet	0.05000		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0505		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0550		mg/kg wet	0.05000		110	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,1,1-Trichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
1,1,2-Trichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	22	25	
1,1-Dichloroethane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	20	25	
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	14	25	
1,1-Dichloropropene	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	18	25	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2,3-Trichloropropane	0.0395	0.0050	mg/kg wet	0.05000		79	70-130	19	25	
1,2,4-Trichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
1,2,4-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
1,2-Dibromo-3-Chloropropane	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	17	25	
1,2-Dibromoethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	14	25	
1,2-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2-Dichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	23	25	
1,2-Dichloropropane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	22	25	
1,3,5-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	9	25	
1,3-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,3-Dichloropropane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	16	25	
1,4-Dichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
1,4-Dioxane	0.824	0.100	mg/kg wet	1.000		82	70-130	22	20	D+
1-Chlorohexane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	11	25	
2,2-Dichloropropane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	17	25	
2-Butanone	0.198	0.0500	mg/kg wet	0.2500		79	70-130	30	25	D+
2-Chlorotoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	12	25	
2-Hexanone	0.191	0.0500	mg/kg wet	0.2500		76	70-130	26	25	D+
4-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	11	25	
4-Isopropyltoluene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
4-Methyl-2-Pentanone	0.187	0.0500	mg/kg wet	0.2500		75	70-130	27	25	D+
Acetone	0.208	0.0500	mg/kg wet	0.2500		83	70-130	33	25	D+



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1509522

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CI52103 - 5035

Benzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	19	25	
Bromobenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000		87	70-130	12	25	
Bromodichloromethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	19	25	
Bromoform	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	8	25	
Bromomethane	0.0440	0.0100	mg/kg wet	0.05000		88	70-130	18	25	
Carbon Disulfide	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	17	25	
Carbon Tetrachloride	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	13	25	
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Chloroethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130	24	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	19	25	
Chloromethane	0.0405	0.0100	mg/kg wet	0.05000		81	70-130	26	25	D+
cis-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	15	25	
cis-1,3-Dichloropropene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130	19	25	
Dibromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
Dibromomethane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130	20	25	
Dichlorodifluoromethane	0.0462	0.0100	mg/kg wet	0.05000		92	70-130	18	25	
Diethyl Ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	21	25	
Di-isopropyl ether	0.0411	0.0050	mg/kg wet	0.05000		82	70-130	26	25	D+
Ethyl tertiary-butyl ether	0.0396	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Ethylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	10	25	
Hexachlorobutadiene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
Isopropylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Methyl tert-Butyl Ether	0.0393	0.0050	mg/kg wet	0.05000		79	70-130	21	25	
Methylene Chloride	0.0495	0.0250	mg/kg wet	0.05000		99	70-130	19	25	
Naphthalene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	9	25	
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	11	25	
sec-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Styrene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	9	25	
tert-Butylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Tertiary-amyl methyl ether	0.0403	0.0050	mg/kg wet	0.05000		81	70-130	21	25	
Tetrachloroethene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Tetrahydrofuran	0.0341	0.0050	mg/kg wet	0.05000		68	70-130	35	25	D+
Toluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	14	25	
trans-1,2-Dichloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	16	25	
trans-1,3-Dichloropropene	0.0391	0.0050	mg/kg wet	0.05000		78	70-130	20	25	
Trichloroethene	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	15	25	
Trichlorofluoromethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	14	25	
Vinyl Acetate	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	26	25	D+
Vinyl Chloride	0.0416	0.0100	mg/kg wet	0.05000		83	70-130	27	25	D+
Xylene O	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
Xylene P,M	0.0955	0.0100	mg/kg wet	0.1000		95	70-130	8	25	
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0488		mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1509522

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 CI52103 - 5035

Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0473		mg/kg wet	0.05000		95	70-130			

8100M Total Petroleum Hydrocarbons

Batch CI52117 - 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	4.72		mg/kg wet	5.000		94	40-140			
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LCS

Decane (C10)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		116	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		81	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Total Petroleum Hydrocarbons	34.4	37.5	mg/kg wet	35.00		98	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		108	40-140			

Surrogate: O-Terphenyl	4.37		mg/kg wet	5.000		87	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	15	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140	17	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	16	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
8100M Total Petroleum Hydrocarbons										
Batch CI52117 - 3546										
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	17	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	14	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	16	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	23	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	15	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	12	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	17	25	
Tetracosane (C24)	2.0	0.2	mg/kg wet	2.500		80	40-140	16	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	17	25	
Total Petroleum Hydrocarbons	30.8	37.5	mg/kg wet	35.00		88	40-140	11	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		96	40-140	12	25	
<i>Surrogate: O-Terphenyl</i>	<i>3.76</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>75</i>	<i>40-140</i>			

8270D Semi-Volatile Organic Compounds

Batch CI51816 - 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 CI51816 - 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



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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CI51816 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.39		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.45		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.29		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.59		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.62		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	2.97		mg/kg wet	3.333		89	30-130			

LCS

1,1-Biphenyl	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,2,4-Trichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.19	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140			
2,3,4,6-Tetrachlorophenol	2.05	1.67	mg/kg wet	3.333		61	30-130			
2,4,5-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130			
2,4,6-Trichlorophenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.59	0.333	mg/kg wet	3.333		78	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	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	2.27	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130			
2-Methylnaphthalene	2.22	0.333	mg/kg wet	3.333		67	40-140			
2-Methylphenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2-Nitroaniline	2.32	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
3,3'-Dichlorobenzidine	2.36	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.91	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.87	0.333	mg/kg wet	3.333		86	40-140			
4,6-Dinitro-2-Methylphenol	2.60	1.67	mg/kg wet	3.333		78	30-130			
4-Bromophenyl-phenylether	2.65	0.333	mg/kg wet	3.333		80	40-140			
4-Chloro-3-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
4-Chloroaniline	2.18	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	3.04	0.333	mg/kg wet	3.333		91	40-140			
4-Nitrophenol	2.49	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Acenaphthylene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Acetophenone	2.36	0.667	mg/kg wet	3.333		71	40-140			
Aniline	1.85	0.667	mg/kg wet	3.333		55	40-140			
Anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Azobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)anthracene	2.76	0.333	mg/kg wet	3.333		83	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

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 CI51816 - 3546

Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.51	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.34	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140			
bis(2-Ethylhexyl)phthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Butylbenzylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140			
Carbazole	2.98	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.80	0.167	mg/kg wet	3.333		84	40-140			
Dibenzo(a,h)Anthracene	2.78	0.167	mg/kg wet	3.333		83	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140			
Dimethylphthalate	2.60	0.333	mg/kg wet	3.333		78	40-140			
Di-n-butylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorobenzene	2.46	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.08	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorocyclopentadiene	2.07	1.67	mg/kg wet	3.333		62	40-140			
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.37	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Nitrobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	2.16	0.333	mg/kg wet	3.333		65	40-140			
N-Nitroso-Di-n-Propylamine	2.32	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.65	0.333	mg/kg wet	3.333		80	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		76	30-130			
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Pyridine	1.58	1.67	mg/kg wet	3.333		47	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.02		mg/kg wet	3.333		61	30-130			
Surrogate: 2,4,6-Tribromophenol	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Fluorobiphenyl	2.23		mg/kg wet	3.333		67	30-130			
Surrogate: 2-Fluorophenol	3.28		mg/kg wet	5.000		66	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		66	30-130			
Surrogate: Phenol-d6	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: p-Terphenyl-d14	2.50		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

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 CI51816 - 3546

LCS Dup

1,1-Biphenyl	2.64	0.333	mg/kg wet	3.333		79	40-140	7	30	
1,2,4-Trichlorobenzene	2.27	0.333	mg/kg wet	3.333		68	40-140	5	30	
1,2-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.6	30	
1,3-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140	0.3	30	
1,4-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.15	1.67	mg/kg wet	3.333		65	30-130	5	30	
2,4,5-Trichlorophenol	2.87	0.333	mg/kg wet	3.333		86	30-130	5	30	
2,4,6-Trichlorophenol	2.96	0.333	mg/kg wet	3.333		89	30-130	7	30	
2,4-Dichlorophenol	2.55	0.333	mg/kg wet	3.333		77	30-130	6	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	4	30	
2,4-Dinitrophenol	2.41	1.67	mg/kg wet	3.333		72	30-130	1	30	
2,4-Dinitrotoluene	3.01	0.333	mg/kg wet	3.333		90	40-140	4	30	
2,6-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140	4	30	
2-Chloronaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
2-Chlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	0.2	30	
2-Methylnaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	0.6	30	
2-Nitroaniline	2.42	0.333	mg/kg wet	3.333		72	40-140	4	30	
2-Nitrophenol	2.62	0.333	mg/kg wet	3.333		79	30-130	3	30	
3,3'-Dichlorobenzidine	2.58	0.667	mg/kg wet	3.333		77	40-140	9	30	
3+4-Methylphenol	4.87	0.667	mg/kg wet	6.667		73	30-130	0.9	30	
3-Nitroaniline	2.95	0.333	mg/kg wet	3.333		89	40-140	3	30	
4,6-Dinitro-2-Methylphenol	2.76	1.67	mg/kg wet	3.333		83	30-130	6	30	
4-Bromophenyl-phenylether	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
4-Chloro-3-Methylphenol	2.55	0.333	mg/kg wet	3.333		77	30-130	0.8	30	
4-Chloroaniline	2.03	0.667	mg/kg wet	3.333		61	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.70	0.333	mg/kg wet	3.333		81	40-140	5	30	
4-Nitroaniline	3.31	0.333	mg/kg wet	3.333		99	40-140	9	30	
4-Nitrophenol	2.52	1.67	mg/kg wet	3.333		76	30-130	1	30	
Acenaphthene	2.69	0.333	mg/kg wet	3.333		81	40-140	5	30	
Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
Acetophenone	2.33	0.667	mg/kg wet	3.333		70	40-140	1	30	
Aniline	1.91	0.667	mg/kg wet	3.333		57	40-140	3	30	
Anthracene	2.95	0.333	mg/kg wet	3.333		89	40-140	7	30	
Azobenzene	2.97	0.333	mg/kg wet	3.333		89	40-140	9	30	
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(a)pyrene	3.06	0.167	mg/kg wet	3.333		92	40-140	6	30	
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Benzo(g,h,i)perylene	2.91	0.333	mg/kg wet	3.333		87	40-140	8	30	
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzoic Acid	2.57	1.67	mg/kg wet	3.333		77	40-140	2	30	
Benzyl Alcohol	2.24	0.333	mg/kg wet	3.333		67	40-140	5	30	
bis(2-Chloroethoxy)methane	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
bis(2-Chloroethyl)ether	2.49	0.333	mg/kg wet	3.333		75	40-140	0.07	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

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 CI51816 - 3546

bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140	0.2	30	
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140	4	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	5	30	
Carbazole	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Chrysene	3.00	0.167	mg/kg wet	3.333		90	40-140	7	30	
Dibenzo(a,h)Anthracene	2.98	0.167	mg/kg wet	3.333		89	40-140	7	30	
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140	4	30	
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		83	40-140	3	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	4	30	
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140	4	30	
Di-n-octylphthalate	2.98	0.333	mg/kg wet	3.333		89	40-140	1	30	
Fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	5	30	
Fluorene	2.73	0.333	mg/kg wet	3.333		82	40-140	4	30	
Hexachlorobenzene	2.64	0.167	mg/kg wet	3.333		79	40-140	7	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	5	30	
Hexachlorocyclopentadiene	2.28	1.67	mg/kg wet	3.333		68	40-140	9	30	
Hexachloroethane	2.09	0.333	mg/kg wet	3.333		63	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.98	0.333	mg/kg wet	3.333		89	40-140	8	30	
Isophorone	2.45	0.333	mg/kg wet	3.333		73	40-140	3	30	
Naphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	5	30	
Nitrobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	4	30	
N-Nitrosodimethylamine	2.05	0.333	mg/kg wet	3.333		62	40-140	5	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	0.2	30	
N-nitrosodiphenylamine	2.87	0.333	mg/kg wet	3.333		86	40-140	8	30	
Pentachlorophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	7	30	
Phenanthrene	2.87	0.333	mg/kg wet	3.333		86	40-140	7	30	
Phenol	2.23	0.333	mg/kg wet	3.333		67	30-130	0.2	30	
Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	5	30	
Pyridine	1.59	1.67	mg/kg wet	3.333		48	40-140	0.8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.55		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.04		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.30		mg/kg wet	3.333		69	30-130			
Surrogate: 2-Fluorophenol	3.16		mg/kg wet	5.000		63	30-130			
Surrogate: Nitrobenzene-d5	2.18		mg/kg wet	3.333		65	30-130			
Surrogate: Phenol-d6	3.32		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.49		mg/kg wet	3.333		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1509522

Notes and Definitions

- Z-10 Soil pH measured in water at 23.3 °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.
- 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: 1509522

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: 15090522
 Date Project Due: 9/22/15
 Days For Project: 2 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: 7.8

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 @ 1615 JL 9/18/15

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: 9/18/15 1600

Reviewed By: [Signature]

Date/Time: 9/18/15 1615

CHAIN OF CUSTODY

ESS Lab # **1509522**

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		Turn Time 2 Days Reporting Limits RI DEM RDEC					
Regulatory State Rhode Island Is this project for any of the following?: <input type="radio"/> MA MCP <input type="radio"/> ORGP <input type="radio"/> OOD		Electronic Deliverables <input checked="" type="checkbox"/> Data Checker <input type="checkbox"/> Other (Please Specify →)					
Project # 74-15-0002.134 Address 500 Harrison Avenue, Suite 4R City Boston State MA Zip Code 02118		PH: Corrosivity 9045 <input checked="" type="checkbox"/> VOC <input checked="" type="checkbox"/> VOC Low Level <input checked="" type="checkbox"/> SVOC <input checked="" type="checkbox"/> RCRA 8 <input checked="" type="checkbox"/> TPH					
Company Name Charter Environmental Contact Person Paul J. Leofanti, Jr.		Project Name Textron Providence PO #					
Telephone Number (857) 246-6812 FAX Number		Email Address pleofanti@charter.us Sample ID					
ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Material S&S	Loam	5
1	9/18	14:45	Grab	Soil			
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-ZnAc, NaOH, 9-NH4Cl, 10-Other* 1 1 6 10 1 1 1							
						Number of Containers: 1 1 1 2 1	

Laboratory Use Only Sampled by: M. Polsky-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 type="checkbox"/> NO <input type="checkbox"/> Pickup Cooler Temperature: 7.8°C 9/18/15 Technician Hours →		Please specify "Other" preservative and containers types in this space Please CC: mpolsky@thielsch.com	
Relinquished by: (Signature, Date & Time) <i>[Signature]</i> 9-18-15		Relinquished by: (Signature, Date & Time) <i>[Signature]</i> 9/18/15 15:15	
Relinquished by: (Signature, Date & Time) Received by: (Signature, Date & Time)		Relinquished 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: 1510062

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:06 pm, Oct 09, 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: 1510062

SAMPLE RECEIPT

The following samples were received on October 02, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on October 2, 2015 at 17:30.

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>
1510062-01	Material S&S Loam 5	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: 1510062

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1510062-01 Surrogate recovery(ies) above upper control limit (S+).

1,2-Dichloroethane-d4 (131% @ 70-130%)

CJ50521-BS1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (141% @ 70-130%)

CJ50521-BSD1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (173% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0063-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).

Total Petroleum Hydrocarbons (21% @ 20%)

8270D Semi-Volatile Organic Compounds

CYJ0066-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (76% @ 80-120%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

Aniline (32% @ 20%), Azobenzene (24% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%),
Di-n-octylphthalate (22% @ 20%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Benzoic Acid (24% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (29% @ 20%)

CYJ0076-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (106% @ 80-120%), Benzoic Acid (81% @ 80-120%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

bis(2-Chloroethyl)ether (30% @ 20%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (30% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pyridine (28% @ 20%)

Total Metals

CJ50535-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Arsenic (32% @ 20%)

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: 1510062

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: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
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 (2.63)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535
Barium	16.5 (2.63)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535
Cadmium	ND (0.53)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535
Chromium	3.66 (1.05)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535
Lead	6.50 (5.27)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535
Mercury	ND (0.034)		7471B		1	PJP	10/06/15 14:14	0.64	40	CJ50536
Selenium	ND (5.27)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535
Silver	ND (0.53)		6010C		1	KJK	10/06/15 22:00	2.06	100	CJ50535



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
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	10/05/15 16:17	CYJ0047	CJ50521
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1,4-Dioxane	ND (0.0861)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
1-Chlorohexane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
2-Butanone	ND (0.0431)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
2-Chlorotoluene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
2-Hexanone	ND (0.0431)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
4-Chlorotoluene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
4-Methyl-2-Pentanone	ND (0.0431)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Acetone	ND (0.0431)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Benzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Bromobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
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	10/05/15 16:17	CYJ0047	CJ50521
Bromodichloromethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Bromoform	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Bromomethane	ND (0.0086)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Carbon Disulfide	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Chlorobenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Chloroethane	ND (0.0086)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Chloroform	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Chloromethane	ND (0.0086)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Dibromochloromethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Dibromomethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Dichlorodifluoromethane	ND (0.0086)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Diethyl Ether	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Di-isopropyl ether	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Ethylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Isopropylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Methylene Chloride	ND (0.0215)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Naphthalene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
n-Butylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
n-Propylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
sec-Butylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Styrene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
tert-Butylbenzene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Tetrachloroethene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Tetrahydrofuran	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
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	10/05/15 16:17	CYJ0047	CJ50521
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Trichloroethene	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Vinyl Acetate	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Vinyl Chloride	ND (0.0086)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Xylene O	ND (0.0043)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Xylene P,M	ND (0.0086)		8260B Low		1	10/05/15 16:17	CYJ0047	CJ50521
Xylenes (Total)	ND (0.0086)		8260B Low		1	10/05/15 16:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>131 %</i>	<i>S+</i>	<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>77 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>92 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/5/15 15:02

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	70.4 (42.2)		8100M		1	10/06/15 6:15	CYJ0063	CJ50514
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>81 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/5/15 14:04

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 (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
1,2,4-Trichlorobenzene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
1,2-Dichlorobenzene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
1,3-Dichlorobenzene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
1,4-Dichlorobenzene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,3,4,6-Tetrachlorophenol	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,4,5-Trichlorophenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,4,6-Trichlorophenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,4-Dichlorophenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,4-Dimethylphenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,4-Dinitrophenol	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,4-Dinitrotoluene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2,6-Dinitrotoluene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2-Chloronaphthalene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2-Chlorophenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2-Methylnaphthalene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2-Methylphenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2-Nitroaniline	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
2-Nitrophenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
3,3'-Dichlorobenzidine	ND (0.765)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
3+4-Methylphenol	ND (0.765)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
3-Nitroaniline	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4,6-Dinitro-2-Methylphenol	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4-Bromophenyl-phenylether	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4-Chloro-3-Methylphenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4-Chloroaniline	ND (0.765)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4-Chloro-phenyl-phenyl ether	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4-Nitroaniline	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
4-Nitrophenol	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Acenaphthene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Acenaphthylene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Acetophenone	ND (0.765)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/5/15 14:04

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 (0.765)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Anthracene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Azobenzene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzo(a)anthracene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzo(a)pyrene	ND (0.191)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzo(b)fluoranthene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzo(g,h,i)perylene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzo(k)fluoranthene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzoic Acid	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Benzyl Alcohol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
bis(2-Chloroethoxy)methane	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
bis(2-Chloroethyl)ether	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
bis(2-chloroisopropyl)Ether	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
bis(2-Ethylhexyl)phthalate	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Butylbenzylphthalate	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Carbazole	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Chrysene	ND (0.191)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Dibenzo(a,h)Anthracene	ND (0.191)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Dibenzofuran	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Diethylphthalate	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Dimethylphthalate	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Di-n-butylphthalate	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Di-n-octylphthalate	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Fluoranthene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Fluorene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Hexachlorobenzene	ND (0.191)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Hexachlorobutadiene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Hexachlorocyclopentadiene	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Hexachloroethane	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Indeno(1,2,3-cd)Pyrene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Isophorone	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Naphthalene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/5/15 14:04

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 (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
N-Nitrosodimethylamine	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
N-Nitroso-Di-n-Propylamine	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
N-nitrosodiphenylamine	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Pentachlorophenol	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Phenanthrene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Phenol	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Pyrene	ND (0.382)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515
Pyridine	ND (1.91)		8270D		1	10/07/15 2:09	CYJ0076	CJ50515

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>74 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>78 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>80 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>84 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>81 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>88 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>72 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 5
Date Sampled: 10/02/15 14:40
Percent Solids: 92

ESS Laboratory Work Order: 1510062
ESS Laboratory Sample ID: 1510062-01
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)	5.82 (N/A)		9045		1	MJV	10/02/15 18:16	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.9 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510062

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 CJ50535 - 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	63.4	9.80	mg/kg wet	52.30	121	43-169
Barium	141	9.80	mg/kg wet	145.0	97	80-120
Cadmium	55.0	1.96	mg/kg wet	71.60	77	62-138
Chromium	79.9	3.92	mg/kg wet	88.50	90	80-120
Lead	54.7	19.6	mg/kg wet	77.80	70	69-131
Selenium	77.5	19.6	mg/kg wet	81.10	96	80-120
Silver	117	1.96	mg/kg wet	114.0	102	80-120

LCS Dup

Arsenic	45.8	9.26	mg/kg wet	52.30	88	43-169	32	20	D+
Barium	146	9.26	mg/kg wet	145.0	101	80-120	4	20	
Cadmium	56.0	1.85	mg/kg wet	71.60	78	62-138	2	20	
Chromium	82.7	3.70	mg/kg wet	88.50	93	80-120	3	20	
Lead	55.4	18.5	mg/kg wet	77.80	71	69-131	1	20	
Selenium	80.2	18.5	mg/kg wet	81.10	99	80-120	3	20	
Silver	121	1.85	mg/kg wet	114.0	106	80-120	4	20	

Batch CJ50536 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.40	3.81	mg/kg wet	9.700	97	80-120
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LCS Dup

Mercury	10.5	3.60	mg/kg wet	9.700	109	80-120	11	20	
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 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: 1510062

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 CJ50521 - 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: 1510062

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 CJ50521 - 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	0.0614		mg/kg wet	0.05000		123	70-130			
Surrogate: 4-Bromofluorobenzene	0.0416		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0452		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,2,2-Tetrachloroethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,1,2-Trichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloropropene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,3-Trichloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trichlorobenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromo-3-Chloropropane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloropropane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,3-Dichloropropane	0.0468	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: 1510062

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 CJ50521 - 5035

1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130			
1-Chlorohexane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
2,2-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
2-Hexanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
4-Isopropyltoluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130			
Acetone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
Benzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Bromobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Bromochloromethane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Bromodichloromethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Bromomethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Carbon Disulfide	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Chlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Chloroform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Chloromethane	0.0461	0.0100	mg/kg wet	0.05000		92	70-130			
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromomethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0475	0.0100	mg/kg wet	0.05000		95	70-130			
Diethyl Ether	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Ethyl tertiary-butyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Hexachlorobutadiene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Methyl tert-Butyl Ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0547	0.0250	mg/kg wet	0.05000		109	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
n-Propylbenzene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
sec-Butylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Styrene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
tert-Butylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
Tertiary-amyl methyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrachloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510062

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 CJ50521 - 5035

Toluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,3-Dichloropropene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichloroethene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Trichlorofluoromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0705	0.0050	mg/kg wet	0.05000		141	70-130			B+
Vinyl Chloride	0.0503	0.0100	mg/kg wet	0.05000		101	70-130			
Xylene O	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0905	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0546</i>		mg/kg wet	<i>0.05000</i>		<i>109</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0483</i>		mg/kg wet	<i>0.05000</i>		<i>97</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0487</i>		mg/kg wet	<i>0.05000</i>		<i>97</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0492</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
1,1,1-Trichloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	17	25	
1,1,2-Trichloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	15	25	
1,1-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	13	25	
1,1-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	14	25	
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
1,2,3-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	16	25	
1,2,3-Trichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
1,2,4-Trichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	15	25	
1,2-Dibromo-3-Chloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	21	25	
1,2-Dibromoethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	16	25	
1,2-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,2-Dichloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	15	25	
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,3,5-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	14	25	
1,3-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,3-Dichloropropane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
1,4-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130	13	20	
1-Chlorohexane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
2,2-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	14	25	
2-Butanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130	18	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	13	25	
2-Hexanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	20	25	
4-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	12	25	
4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	20	25	
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130	21	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 5035

Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	12	25	
Bromobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Bromochloromethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	16	25	
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	14	25	
Bromoform	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	16	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	22	25	
Carbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	14	25	
Carbon Tetrachloride	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	13	25	
Chlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
Chloroethane	0.0423	0.0100	mg/kg wet	0.05000		85	70-130	9	25	
Chloroform	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	13	25	
Chloromethane	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	13	25	
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	13	25	
cis-1,3-Dichloropropene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
Dibromochloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130	16	25	
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
Dichlorodifluoromethane	0.0538	0.0100	mg/kg wet	0.05000		108	70-130	12	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	17	25	
Di-isopropyl ether	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
Ethyl tertiary-butyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	12	25	
Hexachlorobutadiene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
Isopropylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	19	25	
Methylene Chloride	0.0628	0.0250	mg/kg wet	0.05000		126	70-130	14	25	
Naphthalene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	19	25	
n-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
n-Propylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	15	25	
sec-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
Styrene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
tert-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	17	25	
Tetrachloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tetrahydrofuran	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	23	25	
Toluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	12	25	
trans-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	15	25	
Vinyl Acetate	0.0864	0.0050	mg/kg wet	0.05000		173	70-130	20	25	B+
Vinyl Chloride	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	11	25	
Xylene O	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	11	25	
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0556		mg/kg wet	0.05000		111	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 CJ50521 - 5035

Surrogate: 4-Bromofluorobenzene	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50514 - 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	4.46		mg/kg wet	5.000		89	40-140			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		82	40-140			
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		74	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Total Petroleum Hydrocarbons	35.6	37.5	mg/kg wet	35.00		102	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		87	40-140			

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

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	6	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		83	40-140	15	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	0.1	25	



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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ50514 - 3546										
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		86	40-140	13	25	
Hexacosane (C26)	2.0	0.2	mg/kg wet	2.500		79	40-140	17	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		86	40-140	6	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		90	40-140	9	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		71	30-140	5	25	
Octacosane (C28)	1.8	0.2	mg/kg wet	2.500		74	40-140	19	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		82	40-140	18	25	
Tetracosane (C24)	1.9	0.2	mg/kg wet	2.500		76	40-140	16	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		80	40-140	12	25	
Total Petroleum Hydrocarbons	30.9	37.5	mg/kg wet	35.00		88	40-140	14	25	
Triacontane (C30)	1.8	0.2	mg/kg wet	2.500		72	40-140	19	25	

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

8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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 CJ50515 - 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: 1510062

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 CJ50515 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.79		mg/kg wet	3.333		84	30-130			
Surrogate: 2,4,6-Tribromophenol	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Chlorophenol-d4	4.51		mg/kg wet	5.000		90	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.76		mg/kg wet	5.000		95	30-130			
Surrogate: Nitrobenzene-d5	3.22		mg/kg wet	3.333		97	30-130			
Surrogate: Phenol-d6	4.96		mg/kg wet	5.000		99	30-130			
Surrogate: p-Terphenyl-d14	3.46		mg/kg wet	3.333		104	30-130			

LCS

1,1-Biphenyl	2.91	0.333	mg/kg wet	3.333		87	40-140			
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,4-Dichlorobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2,3,4,6-Tetrachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
2,4,5-Trichlorophenol	3.14	0.333	mg/kg wet	3.333		94	30-130			
2,4,6-Trichlorophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	3.19	0.333	mg/kg wet	3.333		96	30-130			
2,4-Dinitrophenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
2,4-Dinitrotoluene	3.34	0.333	mg/kg wet	3.333		100	40-140			
2,6-Dinitrotoluene	3.00	0.333	mg/kg wet	3.333		90	40-140			
2-Chloronaphthalene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2-Chlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Methylnaphthalene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	3.02	0.333	mg/kg wet	3.333		90	30-130			
2-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
2-Nitrophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140			
3+4-Methylphenol	6.13	0.667	mg/kg wet	6.667		92	30-130			
3-Nitroaniline	3.26	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
4-Bromophenyl-phenylether	2.95	0.333	mg/kg wet	3.333		89	40-140			
4-Chloro-3-Methylphenol	3.05	0.333	mg/kg wet	3.333		92	30-130			
4-Chloroaniline	2.53	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	2.95	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.45	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.37	1.67	mg/kg wet	3.333		101	30-130			
Acenaphthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Acenaphthylene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Acetophenone	3.09	0.667	mg/kg wet	3.333		93	40-140			
Aniline	2.45	0.667	mg/kg wet	3.333		73	40-140			
Anthracene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Benzo(a)anthracene	3.01	0.333	mg/kg wet	3.333		90	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510062

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 CJ50515 - 3546

Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		80	40-140			
bis(2-Chloroethoxy)methane	3.15	0.333	mg/kg wet	3.333		95	40-140			
bis(2-Chloroethyl)ether	3.43	0.333	mg/kg wet	3.333		103	40-140			
bis(2-chloroisopropyl)Ether	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140			
Carbazole	3.21	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140			
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.83	0.333	mg/kg wet	3.333		85	40-140			
Diethylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Di-n-octylphthalate	3.37	0.333	mg/kg wet	3.333		101	40-140			
Fluoranthene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Fluorene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobenzene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Hexachlorobutadiene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorocyclopentadiene	2.52	1.67	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.71	0.333	mg/kg wet	3.333		81	40-140			
Indeno(1,2,3-cd)Pyrene	3.08	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.99	0.333	mg/kg wet	3.333		90	40-140			
Naphthalene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	1.93	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.99	0.333	mg/kg wet	3.333		90	40-140			
N-nitrosodiphenylamine	3.05	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.51	1.67	mg/kg wet	3.333		45	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.42		mg/kg wet	5.000		88	30-130			
Surrogate: 2-Fluorobiphenyl	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.66		mg/kg wet	5.000		93	30-130			
Surrogate: Nitrobenzene-d5	3.07		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.82		mg/kg wet	5.000		96	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510062

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 CJ50515 - 3546

LCS Dup

1,1-Biphenyl	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
1,2,4-Trichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,2-Dichlorobenzene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
1,3-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,4-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		76	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.32	1.67	mg/kg wet	3.333		70	30-130	8	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	6	30	
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130	6	30	
2,4-Dichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	6	30	
2,4-Dimethylphenol	3.00	0.333	mg/kg wet	3.333		90	30-130	6	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	5	30	
2,4-Dinitrotoluene	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
2-Chlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
2-Methylnaphthalene	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130	7	30	
2-Nitroaniline	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
2-Nitrophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	5	30	
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140	0.02	30	
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130	8	30	
3-Nitroaniline	3.10	0.333	mg/kg wet	3.333		93	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
4-Bromophenyl-phenylether	2.83	0.333	mg/kg wet	3.333		85	40-140	4	30	
4-Chloro-3-Methylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130	6	30	
4-Chloroaniline	2.42	0.667	mg/kg wet	3.333		73	40-140	4	30	
4-Chloro-phenyl-phenyl ether	2.74	0.333	mg/kg wet	3.333		82	40-140	7	30	
4-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140	5	30	
4-Nitrophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	11	30	
Acenaphthene	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140	6	30	
Acetophenone	2.87	0.667	mg/kg wet	3.333		86	40-140	7	30	
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140	6	30	
Anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	5	30	
Azobenzene	3.15	0.333	mg/kg wet	3.333		95	40-140	5	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
Benzo(a)pyrene	2.94	0.167	mg/kg wet	3.333		88	40-140	5	30	
Benzo(b)fluoranthene	3.15	0.333	mg/kg wet	3.333		94	40-140	3	30	
Benzo(g,h,i)perylene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	8	30	
Benzoic Acid	2.25	1.67	mg/kg wet	3.333		68	40-140	4	30	
Benzyl Alcohol	2.55	0.333	mg/kg wet	3.333		77	40-140	5	30	
bis(2-Chloroethoxy)methane	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
bis(2-Chloroethyl)ether	3.20	0.333	mg/kg wet	3.333		96	40-140	7	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510062

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 CJ50515 - 3546

bis(2-chloroisopropyl)Ether	2.67	0.333	mg/kg wet	3.333		80	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	8	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	7	30	
Carbazole	3.07	0.333	mg/kg wet	3.333		92	40-140	5	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	6	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	5	30	
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140	7	30	
Dimethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	7	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Di-n-octylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140	7	30	
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	5	30	
Fluorene	2.84	0.333	mg/kg wet	3.333		85	40-140	6	30	
Hexachlorobenzene	2.52	0.167	mg/kg wet	3.333		76	40-140	4	30	
Hexachlorobutadiene	2.46	0.333	mg/kg wet	3.333		74	40-140	6	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	6	30	
Hexachloroethane	2.55	0.333	mg/kg wet	3.333		76	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	6	30	
Isophorone	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Naphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140	6	30	
Nitrobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	6	30	
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	7	30	
N-Nitroso-Di-n-Propylamine	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	4	30	
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
Phenol	2.72	0.333	mg/kg wet	3.333		82	30-130	9	30	
Pyrene	2.82	0.333	mg/kg wet	3.333		85	40-140	6	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		40	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: 2,4,6-Tribromophenol	3.66		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: Nitrobenzene-d5	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.24		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		78	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510062

Notes and Definitions

- Z-10 Soil pH measured in water at 20.9 °C.
- U Analyte included in the analysis, but not detected
- S+ Surrogate recovery(ies) above upper control limit (S+).
- 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+).
- 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: 1510062

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: ESS Courier

ESS Project ID: 15100062
Date Project Due: 10/9/15
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: 10.8"/> | | 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 @ 1730 JE 10/2/15

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: 10/2/15 1537
Date/Time: 10/2/15 1220



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: 1510058

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:01 pm, Oct 09, 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: 1510058

SAMPLE RECEIPT

The following samples were received on October 02, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory October 2, 2015 at 17:30.

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>
1510058-01	Material S&S Loam 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: 1510058

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510058-01 Surrogate recovery(ies) above upper control limit (S+).
1,2-Dichloroethane-d4 (134% @ 70-130%)
- CJ50521-BS1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (141% @ 70-130%)
- CJ50521-BSD1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (173% @ 70-130%)

8100M Total Petroleum Hydrocarbons

- CYJ0063-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).
Total Petroleum Hydrocarbons (21% @ 20%)

8270D Semi-Volatile Organic Compounds

- CYJ0051-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (100% @ 80-120%), Benzoic Acid (83% @ 80-120%)
- CYJ0051-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
3-Nitroaniline (22% @ 20%), 4-Nitroaniline (23% @ 20%), 4-Nitrophenol (28% @ 20%),
bis(2-Chloroethyl)ether (26% @ 20%)
- CYJ0051-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
Hexachlorocyclopentadiene (25% @ 20%), Pyridine (24% @ 20%)
- CYJ0066-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (76% @ 80-120%)
- CYJ0066-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
Aniline (32% @ 20%), Azobenzene (24% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%),
Di-n-octylphthalate (22% @ 20%)
- CYJ0066-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
Benzoic Acid (24% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (29% @ 20%)
- CYJ0076-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (106% @ 80-120%), Benzoic Acid (81% @ 80-120%)
- CYJ0076-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
bis(2-Chloroethyl)ether (30% @ 20%)
- CYJ0076-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
Hexachlorocyclopentadiene (30% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pyridine (28% @ 20%)

Total Metals

- CJ50535-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
Arsenic (32% @ 20%)

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: 1510058

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: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
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	10/06/15 21:31	2.22	100	CJ50535
Barium	17.3 (2.44)		6010C		1	KJK	10/06/15 21:31	2.22	100	CJ50535
Cadmium	ND (0.49)		6010C		1	KJK	10/06/15 21:31	2.22	100	CJ50535
Chromium	4.25 (0.97)		6010C		1	KJK	10/06/15 21:31	2.22	100	CJ50535
Lead	6.92 (4.87)		6010C		1	KJK	10/06/15 21:31	2.22	100	CJ50535
Mercury	ND (0.032)		7471B		1	PJP	10/06/15 14:05	0.67	40	CJ50536
Selenium	ND (9.75)		6010C		2	KJK	10/07/15 19:42	2.22	100	CJ50535
Silver	ND (0.49)		6010C		1	KJK	10/06/15 21:31	2.22	100	CJ50535



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 1
 Date Sampled: 10/02/15 14:00
 Percent Solids: 92
 Initial Volume: 5.7
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510058
 ESS Laboratory Sample ID: 1510058-01
 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 (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1,4-Dioxane	ND (0.0949)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
1-Chlorohexane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
2-Butanone	ND (0.0475)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
2-Chlorotoluene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
2-Hexanone	ND (0.0475)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
4-Chlorotoluene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
4-Methyl-2-Pentanone	ND (0.0475)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Acetone	ND (0.0475)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Benzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Bromobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
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 (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Bromodichloromethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Bromoform	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Bromomethane	ND (0.0095)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Carbon Disulfide	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Chlorobenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Chloroethane	ND (0.0095)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Chloroform	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Chloromethane	ND (0.0095)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Dibromochloromethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Dibromomethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Dichlorodifluoromethane	ND (0.0095)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Diethyl Ether	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Di-isopropyl ether	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Ethylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Isopropylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Methylene Chloride	ND (0.0237)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Naphthalene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
n-Butylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
n-Propylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
sec-Butylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Styrene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
tert-Butylbenzene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Tetrachloroethene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Tetrahydrofuran	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
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 (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Trichloroethene	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Vinyl Acetate	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Vinyl Chloride	ND (0.0095)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Xylene O	ND (0.0047)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Xylene P,M	ND (0.0095)		8260B Low		1	10/05/15 12:58	CYJ0047	CJ50521
Xylenes (Total)	ND (0.0095)		8260B Low		1	10/05/15 12:58		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>134 %</i>	<i>S+</i>	<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>82 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</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: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/2/15 18:05

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	68.5 (42.3)		8100M		1	10/05/15 23:07	CYJ0063	CJ50214
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		67 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
1,2,4-Trichlorobenzene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
1,2-Dichlorobenzene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
1,3-Dichlorobenzene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
1,4-Dichlorobenzene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,3,4,6-Tetrachlorophenol	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,4,5-Trichlorophenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,4,6-Trichlorophenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,4-Dichlorophenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,4-Dimethylphenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,4-Dinitrophenol	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,4-Dinitrotoluene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2,6-Dinitrotoluene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2-Chloronaphthalene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2-Chlorophenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2-Methylnaphthalene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2-Methylphenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2-Nitroaniline	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
2-Nitrophenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
3,3'-Dichlorobenzidine	ND (0.762)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
3+4-Methylphenol	ND (0.762)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
3-Nitroaniline	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4,6-Dinitro-2-Methylphenol	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4-Bromophenyl-phenylether	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4-Chloro-3-Methylphenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4-Chloroaniline	ND (0.762)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4-Chloro-phenyl-phenyl ether	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4-Nitroaniline	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
4-Nitrophenol	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Acenaphthene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Acenaphthylene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Acetophenone	ND (0.762)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.762)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Anthracene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Azobenzene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzo(a)anthracene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzo(a)pyrene	ND (0.191)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzo(b)fluoranthene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzo(g,h,i)perylene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzo(k)fluoranthene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzoic Acid	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Benzyl Alcohol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
bis(2-Chloroethoxy)methane	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
bis(2-Chloroethyl)ether	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
bis(2-chloroisopropyl)Ether	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
bis(2-Ethylhexyl)phthalate	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Butylbenzylphthalate	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Carbazole	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Chrysene	ND (0.191)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Dibenzo(a,h)Anthracene	ND (0.191)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Dibenzofuran	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Diethylphthalate	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Dimethylphthalate	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Di-n-butylphthalate	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Di-n-octylphthalate	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Fluoranthene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Fluorene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Hexachlorobenzene	ND (0.191)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Hexachlorobutadiene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Hexachlorocyclopentadiene	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Hexachloroethane	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Indeno(1,2,3-cd)Pyrene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Isophorone	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Naphthalene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 1
 Date Sampled: 10/02/15 14:00
 Percent Solids: 92
 Initial Volume: 14.2
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510058
 ESS Laboratory Sample ID: 1510058-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 10/5/15 14:04

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 (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
N-Nitrosodimethylamine	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
N-Nitroso-Di-n-Propylamine	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
N-nitrosodiphenylamine	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Pentachlorophenol	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Phenanthrene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Phenol	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Pyrene	ND (0.381)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515
Pyridine	ND (1.91)		8270D		1	10/05/15 17:14	CYJ0051	CJ50515

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	65 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	67 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	73 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	67 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	74 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	73 %		30-130
<i>Surrogate: Phenol-d6</i>	80 %		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: Material S&S Loam 1
Date Sampled: 10/02/15 14:00
Percent Solids: 92

ESS Laboratory Work Order: 1510058
ESS Laboratory Sample ID: 1510058-01
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)	5.15 (N/A)		9045		1	MJV	10/02/15 18:16	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.3 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510058

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 CJ50535 - 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	63.4	9.80	mg/kg wet	52.30	121	43-169
Barium	141	9.80	mg/kg wet	145.0	97	80-120
Cadmium	55.0	1.96	mg/kg wet	71.60	77	62-138
Chromium	79.9	3.92	mg/kg wet	88.50	90	80-120
Lead	54.7	19.6	mg/kg wet	77.80	70	69-131
Selenium	77.5	19.6	mg/kg wet	81.10	96	80-120
Silver	117	1.96	mg/kg wet	114.0	102	80-120

LCS Dup

Arsenic	45.8	9.26	mg/kg wet	52.30	88	43-169	32	20	D+
Barium	146	9.26	mg/kg wet	145.0	101	80-120	4	20	
Cadmium	56.0	1.85	mg/kg wet	71.60	78	62-138	2	20	
Chromium	82.7	3.70	mg/kg wet	88.50	93	80-120	3	20	
Lead	55.4	18.5	mg/kg wet	77.80	71	69-131	1	20	
Selenium	80.2	18.5	mg/kg wet	81.10	99	80-120	3	20	
Silver	121	1.85	mg/kg wet	114.0	106	80-120	4	20	

Batch CJ50536 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.40	3.81	mg/kg wet	9.700	97	80-120
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LCS Dup

Mercury	10.5	3.60	mg/kg wet	9.700	109	80-120	11	20	
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 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: 1510058

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 CJ50521 - 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: 1510058

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 CJ50521 - 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	0.0614		mg/kg wet	0.05000		123	70-130			
Surrogate: 4-Bromofluorobenzene	0.0416		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0452		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,2,2-Tetrachloroethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,1,2-Trichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloropropene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,3-Trichloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trichlorobenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromo-3-Chloropropane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloropropane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,3-Dichloropropane	0.0468	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: 1510058

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 CJ50521 - 5035

1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130			
1-Chlorohexane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
2,2-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
2-Hexanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
4-Isopropyltoluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130			
Acetone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
Benzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Bromobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Bromochloromethane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Bromodichloromethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Bromomethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Carbon Disulfide	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Chlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Chloroform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Chloromethane	0.0461	0.0100	mg/kg wet	0.05000		92	70-130			
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromomethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0475	0.0100	mg/kg wet	0.05000		95	70-130			
Diethyl Ether	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Ethyl tertiary-butyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Hexachlorobutadiene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Methyl tert-Butyl Ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0547	0.0250	mg/kg wet	0.05000		109	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
n-Propylbenzene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
sec-Butylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Styrene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
tert-Butylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
Tertiary-amyl methyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrachloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510058

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 CJ50521 - 5035

Toluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,3-Dichloropropene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichloroethene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Trichlorofluoromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0705	0.0050	mg/kg wet	0.05000		141	70-130			B+
Vinyl Chloride	0.0503	0.0100	mg/kg wet	0.05000		101	70-130			
Xylene O	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0905	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0546		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0483		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0492		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
1,1,1-Trichloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	17	25	
1,1,2-Trichloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	15	25	
1,1-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	13	25	
1,1-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	14	25	
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
1,2,3-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	16	25	
1,2,3-Trichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
1,2,4-Trichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	15	25	
1,2-Dibromo-3-Chloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	21	25	
1,2-Dibromoethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	16	25	
1,2-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,2-Dichloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	15	25	
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,3,5-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	14	25	
1,3-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,3-Dichloropropane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
1,4-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130	13	20	
1-Chlorohexane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
2,2-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	14	25	
2-Butanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130	18	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	13	25	
2-Hexanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	20	25	
4-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	12	25	
4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	20	25	
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130	21	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510058

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 5035

Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	12	25	
Bromobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Bromochloromethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	16	25	
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	14	25	
Bromoform	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	16	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	22	25	
Carbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	14	25	
Carbon Tetrachloride	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	13	25	
Chlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
Chloroethane	0.0423	0.0100	mg/kg wet	0.05000		85	70-130	9	25	
Chloroform	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	13	25	
Chloromethane	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	13	25	
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	13	25	
cis-1,3-Dichloropropene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
Dibromochloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130	16	25	
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
Dichlorodifluoromethane	0.0538	0.0100	mg/kg wet	0.05000		108	70-130	12	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	17	25	
Di-isopropyl ether	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
Ethyl tertiary-butyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	12	25	
Hexachlorobutadiene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
Isopropylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	19	25	
Methylene Chloride	0.0628	0.0250	mg/kg wet	0.05000		126	70-130	14	25	
Naphthalene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	19	25	
n-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
n-Propylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	15	25	
sec-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
Styrene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
tert-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	17	25	
Tetrachloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tetrahydrofuran	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	23	25	
Toluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	12	25	
trans-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	15	25	
Vinyl Acetate	0.0864	0.0050	mg/kg wet	0.05000		173	70-130	20	25	B+
Vinyl Chloride	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	11	25	
Xylene O	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	11	25	
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0556		mg/kg wet	0.05000		111	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 CJ50521 - 5035

Surrogate: 4-Bromofluorobenzene	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50214 - 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	4.95		mg/kg wet	5.000		99	40-140			
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LCS

Decane (C10)	1.7	0.2	mg/kg wet	2.500		69	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		93	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		97	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		90	40-140			

Surrogate: O-Terphenyl	4.38		mg/kg wet	5.000		88	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	11	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		103	40-140	13	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		84	40-140	14	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
8100M Total Petroleum Hydrocarbons										
Batch CJ50214 - 3546										
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140	15	25	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		104	40-140	12	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		98	40-140	10	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	14	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140	8	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	10	25	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		104	40-140	15	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		97	40-140	13	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	14	25	
Total Petroleum Hydrocarbons	34.6	37.5	mg/kg wet	35.00		99	40-140	13	25	
Triacotane (C30)	2.5	0.2	mg/kg wet	2.500		99	40-140	9	25	
<i>Surrogate: O-Terphenyl</i>	4.93		mg/kg wet	5.000		99	40-140			

8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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: 1510058

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 CJ50515 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.79		mg/kg wet	3.333		84	30-130			
Surrogate: 2,4,6-Tribromophenol	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Chlorophenol-d4	4.51		mg/kg wet	5.000		90	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.76		mg/kg wet	5.000		95	30-130			
Surrogate: Nitrobenzene-d5	3.22		mg/kg wet	3.333		97	30-130			
Surrogate: Phenol-d6	4.96		mg/kg wet	5.000		99	30-130			
Surrogate: p-Terphenyl-d14	3.46		mg/kg wet	3.333		104	30-130			

LCS

1,1-Biphenyl	2.91	0.333	mg/kg wet	3.333		87	40-140			
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,4-Dichlorobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2,3,4,6-Tetrachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
2,4,5-Trichlorophenol	3.14	0.333	mg/kg wet	3.333		94	30-130			
2,4,6-Trichlorophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	3.19	0.333	mg/kg wet	3.333		96	30-130			
2,4-Dinitrophenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
2,4-Dinitrotoluene	3.34	0.333	mg/kg wet	3.333		100	40-140			
2,6-Dinitrotoluene	3.00	0.333	mg/kg wet	3.333		90	40-140			
2-Chloronaphthalene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2-Chlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Methylnaphthalene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	3.02	0.333	mg/kg wet	3.333		90	30-130			
2-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
2-Nitrophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140			
3+4-Methylphenol	6.13	0.667	mg/kg wet	6.667		92	30-130			
3-Nitroaniline	3.26	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
4-Bromophenyl-phenylether	2.95	0.333	mg/kg wet	3.333		89	40-140			
4-Chloro-3-Methylphenol	3.05	0.333	mg/kg wet	3.333		92	30-130			
4-Chloroaniline	2.53	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	2.95	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.45	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.37	1.67	mg/kg wet	3.333		101	30-130			
Acenaphthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Acenaphthylene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Acetophenone	3.09	0.667	mg/kg wet	3.333		93	40-140			
Aniline	2.45	0.667	mg/kg wet	3.333		73	40-140			
Anthracene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Benzo(a)anthracene	3.01	0.333	mg/kg wet	3.333		90	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510058

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 CJ50515 - 3546

Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		80	40-140			
bis(2-Chloroethoxy)methane	3.15	0.333	mg/kg wet	3.333		95	40-140			
bis(2-Chloroethyl)ether	3.43	0.333	mg/kg wet	3.333		103	40-140			
bis(2-chloroisopropyl)Ether	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140			
Carbazole	3.21	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140			
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.83	0.333	mg/kg wet	3.333		85	40-140			
Diethylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Di-n-octylphthalate	3.37	0.333	mg/kg wet	3.333		101	40-140			
Fluoranthene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Fluorene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobenzene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Hexachlorobutadiene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorocyclopentadiene	2.52	1.67	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.71	0.333	mg/kg wet	3.333		81	40-140			
Indeno(1,2,3-cd)Pyrene	3.08	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.99	0.333	mg/kg wet	3.333		90	40-140			
Naphthalene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	1.93	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.99	0.333	mg/kg wet	3.333		90	40-140			
N-nitrosodiphenylamine	3.05	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.51	1.67	mg/kg wet	3.333		45	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.42		mg/kg wet	5.000		88	30-130			
Surrogate: 2-Fluorobiphenyl	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.66		mg/kg wet	5.000		93	30-130			
Surrogate: Nitrobenzene-d5	3.07		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.82		mg/kg wet	5.000		96	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510058

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 CJ50515 - 3546

LCS Dup

1,1-Biphenyl	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
1,2,4-Trichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,2-Dichlorobenzene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
1,3-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,4-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		76	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.32	1.67	mg/kg wet	3.333		70	30-130	8	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	6	30	
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130	6	30	
2,4-Dichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	6	30	
2,4-Dimethylphenol	3.00	0.333	mg/kg wet	3.333		90	30-130	6	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	5	30	
2,4-Dinitrotoluene	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
2-Chlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
2-Methylnaphthalene	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130	7	30	
2-Nitroaniline	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
2-Nitrophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	5	30	
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140	0.02	30	
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130	8	30	
3-Nitroaniline	3.10	0.333	mg/kg wet	3.333		93	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
4-Bromophenyl-phenylether	2.83	0.333	mg/kg wet	3.333		85	40-140	4	30	
4-Chloro-3-Methylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130	6	30	
4-Chloroaniline	2.42	0.667	mg/kg wet	3.333		73	40-140	4	30	
4-Chloro-phenyl-phenyl ether	2.74	0.333	mg/kg wet	3.333		82	40-140	7	30	
4-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140	5	30	
4-Nitrophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	11	30	
Acenaphthene	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140	6	30	
Acetophenone	2.87	0.667	mg/kg wet	3.333		86	40-140	7	30	
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140	6	30	
Anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	5	30	
Azobenzene	3.15	0.333	mg/kg wet	3.333		95	40-140	5	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
Benzo(a)pyrene	2.94	0.167	mg/kg wet	3.333		88	40-140	5	30	
Benzo(b)fluoranthene	3.15	0.333	mg/kg wet	3.333		94	40-140	3	30	
Benzo(g,h,i)perylene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	8	30	
Benzoic Acid	2.25	1.67	mg/kg wet	3.333		68	40-140	4	30	
Benzyl Alcohol	2.55	0.333	mg/kg wet	3.333		77	40-140	5	30	
bis(2-Chloroethoxy)methane	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
bis(2-Chloroethyl)ether	3.20	0.333	mg/kg wet	3.333		96	40-140	7	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510058

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 CJ50515 - 3546

bis(2-chloroisopropyl)Ether	2.67	0.333	mg/kg wet	3.333		80	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	8	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	7	30	
Carbazole	3.07	0.333	mg/kg wet	3.333		92	40-140	5	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	6	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	5	30	
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140	7	30	
Dimethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	7	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Di-n-octylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140	7	30	
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	5	30	
Fluorene	2.84	0.333	mg/kg wet	3.333		85	40-140	6	30	
Hexachlorobenzene	2.52	0.167	mg/kg wet	3.333		76	40-140	4	30	
Hexachlorobutadiene	2.46	0.333	mg/kg wet	3.333		74	40-140	6	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	6	30	
Hexachloroethane	2.55	0.333	mg/kg wet	3.333		76	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	6	30	
Isophorone	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Naphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140	6	30	
Nitrobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	6	30	
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	7	30	
N-Nitroso-Di-n-Propylamine	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	4	30	
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
Phenol	2.72	0.333	mg/kg wet	3.333		82	30-130	9	30	
Pyrene	2.82	0.333	mg/kg wet	3.333		85	40-140	6	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		40	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: 2,4,6-Tribromophenol	3.66		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: Nitrobenzene-d5	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.24		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		78	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510058

Notes and Definitions

- Z-10 Soil pH measured in water at 20.3 °C.
- U Analyte included in the analysis, but not detected
- S+ Surrogate recovery(ies) above upper control limit (S+).
- 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+).
- 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: 1510058

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: 15100058
 Date Project Due: 10/9/15
 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 |
| Cooler Temp: <u>10.8</u> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Iced With: <u>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 @ 1730 JL 10/2/15

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: 10/2/15 1522

Reviewed By: [Signature]

Date/Time: 10/2/15 1720



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: 1510059

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:04 pm, Oct 09, 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: 1510059

SAMPLE RECEIPT

The following samples were received on October 02, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory October 2, 2015 at 17:30.

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>
1510059-01	Material S&S Loam 2	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: 1510059

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ50521-BS1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (141% @ 70-130%)

CJ50521-BSD1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (173% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0063-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).

Total Petroleum Hydrocarbons (21% @ 20%)

8270D Semi-Volatile Organic Compounds

CYJ0051-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (100% @ 80-120%), Benzoic Acid (83% @ 80-120%)

CYJ0051-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

3-Nitroaniline (22% @ 20%), 4-Nitroaniline (23% @ 20%), 4-Nitrophenol (28% @ 20%), bis(2-Chloroethyl)ether (26% @ 20%)

CYJ0051-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (25% @ 20%), Pyridine (24% @ 20%)

CYJ0066-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (76% @ 80-120%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

Aniline (32% @ 20%), Azobenzene (24% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%), Di-n-octylphthalate (22% @ 20%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Benzoic Acid (24% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (29% @ 20%)

CYJ0076-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (106% @ 80-120%), Benzoic Acid (81% @ 80-120%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

bis(2-Chloroethyl)ether (30% @ 20%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (30% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pyridine (28% @ 20%)

Total Metals

CJ50535-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Arsenic (32% @ 20%)

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: 1510059

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: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
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 (2.41)		6010C		1	KJK	10/06/15 21:35	2.24	100	CJ50535
Barium	79.8 (2.41)		6010C		1	KJK	10/06/15 21:35	2.24	100	CJ50535
Cadmium	ND (0.48)		6010C		1	KJK	10/06/15 21:35	2.24	100	CJ50535
Chromium	4.22 (0.96)		6010C		1	KJK	10/06/15 21:35	2.24	100	CJ50535
Lead	5.95 (4.81)		6010C		1	KJK	10/06/15 21:35	2.24	100	CJ50535
Mercury	ND (0.034)		7471B		1	PJP	10/06/15 14:07	0.62	40	CJ50536
Selenium	ND (9.63)		6010C		2	KJK	10/07/15 19:47	2.24	100	CJ50535
Silver	ND (0.48)		6010C		1	KJK	10/06/15 21:35	2.24	100	CJ50535



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
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 (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,1,1-Trichloroethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,1,2,2-Tetrachloroethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,1,2-Trichloroethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,1-Dichloroethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,1-Dichloroethene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,1-Dichloropropene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2,3-Trichlorobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2,3-Trichloropropane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2,4-Trichlorobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2,4-Trimethylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2-Dibromo-3-Chloropropane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2-Dibromoethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2-Dichlorobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2-Dichloroethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,2-Dichloropropane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,3,5-Trimethylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,3-Dichlorobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,3-Dichloropropane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,4-Dichlorobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1,4-Dioxane	ND (0.0793)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
1-Chlorohexane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
2,2-Dichloropropane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
2-Butanone	ND (0.0396)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
2-Chlorotoluene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
2-Hexanone	ND (0.0396)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
4-Chlorotoluene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
4-Isopropyltoluene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
4-Methyl-2-Pentanone	ND (0.0396)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Acetone	ND (0.0396)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Benzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Bromobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
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 (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Bromodichloromethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Bromoform	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Bromomethane	ND (0.0079)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Carbon Disulfide	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Carbon Tetrachloride	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Chlorobenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Chloroethane	ND (0.0079)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Chloroform	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Chloromethane	ND (0.0079)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
cis-1,2-Dichloroethene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
cis-1,3-Dichloropropene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Dibromochloromethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Dibromomethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Dichlorodifluoromethane	ND (0.0079)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Diethyl Ether	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Di-isopropyl ether	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Ethyl tertiary-butyl ether	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Ethylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Hexachlorobutadiene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Isopropylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Methyl tert-Butyl Ether	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Methylene Chloride	ND (0.0198)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Naphthalene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
n-Butylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
n-Propylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
sec-Butylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Styrene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
tert-Butylbenzene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Tertiary-amyl methyl ether	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Tetrachloroethene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Tetrahydrofuran	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
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 (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
trans-1,2-Dichloroethene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
trans-1,3-Dichloropropene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Trichloroethene	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Trichlorofluoromethane	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Vinyl Acetate	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Vinyl Chloride	ND (0.0079)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Xylene O	ND (0.0040)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Xylene P,M	ND (0.0079)		8260B Low		1	10/05/15 13:26	CYJ0047	CJ50521
Xylenes (Total)	ND (0.0079)		8260B Low		1	10/05/15 13:26		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>124 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>73 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>96 %</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: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/2/15 18:05

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	78.6 (41.9)		8100M		1	10/05/15 23:46	CYJ0063	CJ50214
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		62 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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	10/05/15 17:50	CYJ0051	CJ50515
1,2,4-Trichlorobenzene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
1,2-Dichlorobenzene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
1,3-Dichlorobenzene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
1,4-Dichlorobenzene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,3,4,6-Tetrachlorophenol	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,4,5-Trichlorophenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,4,6-Trichlorophenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,4-Dichlorophenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,4-Dimethylphenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,4-Dinitrophenol	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,4-Dinitrotoluene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2,6-Dinitrotoluene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2-Chloronaphthalene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2-Chlorophenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2-Methylnaphthalene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2-Methylphenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2-Nitroaniline	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
2-Nitrophenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
3,3'-Dichlorobenzidine	ND (0.705)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
3+4-Methylphenol	ND (0.705)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
3-Nitroaniline	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4,6-Dinitro-2-Methylphenol	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4-Bromophenyl-phenylether	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4-Chloro-3-Methylphenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4-Chloroaniline	ND (0.705)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4-Chloro-phenyl-phenyl ether	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4-Nitroaniline	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
4-Nitrophenol	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Acenaphthene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Acenaphthylene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Acetophenone	ND (0.705)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.705)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Anthracene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Azobenzene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzo(a)anthracene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzo(a)pyrene	ND (0.177)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzo(b)fluoranthene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzo(g,h,i)perylene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzo(k)fluoranthene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzoic Acid	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Benzyl Alcohol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
bis(2-Chloroethoxy)methane	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
bis(2-Chloroethyl)ether	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
bis(2-chloroisopropyl)Ether	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
bis(2-Ethylhexyl)phthalate	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Butylbenzylphthalate	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Carbazole	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Chrysene	ND (0.177)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Dibenzo(a,h)Anthracene	ND (0.177)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Dibenzofuran	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Diethylphthalate	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Dimethylphthalate	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Di-n-butylphthalate	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Di-n-octylphthalate	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Fluoranthene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Fluorene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Hexachlorobenzene	ND (0.177)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Hexachlorobutadiene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Hexachlorocyclopentadiene	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Hexachloroethane	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Indeno(1,2,3-cd)Pyrene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Isophorone	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Naphthalene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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	10/05/15 17:50	CYJ0051	CJ50515
N-Nitrosodimethylamine	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
N-Nitroso-Di-n-Propylamine	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
N-nitrosodiphenylamine	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Pentachlorophenol	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Phenanthrene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Phenol	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Pyrene	ND (0.352)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515
Pyridine	ND (1.77)		8270D		1	10/05/15 17:50	CYJ0051	CJ50515

	<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>	65 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	70 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	66 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	70 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	71 %		30-130
<i>Surrogate: Phenol-d6</i>	76 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	66 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 2
Date Sampled: 10/02/15 14:10
Percent Solids: 93

ESS Laboratory Work Order: 1510059
ESS Laboratory Sample ID: 1510059-01
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)	5.39 (N/A)		9045		1	MJV	10/02/15 18:16	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.5 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510059

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 CJ50535 - 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	63.4	9.80	mg/kg wet	52.30	121	43-169
Barium	141	9.80	mg/kg wet	145.0	97	80-120
Cadmium	55.0	1.96	mg/kg wet	71.60	77	62-138
Chromium	79.9	3.92	mg/kg wet	88.50	90	80-120
Lead	54.7	19.6	mg/kg wet	77.80	70	69-131
Selenium	77.5	19.6	mg/kg wet	81.10	96	80-120
Silver	117	1.96	mg/kg wet	114.0	102	80-120

LCS Dup

Arsenic	45.8	9.26	mg/kg wet	52.30	88	43-169	32	20	D+
Barium	146	9.26	mg/kg wet	145.0	101	80-120	4	20	
Cadmium	56.0	1.85	mg/kg wet	71.60	78	62-138	2	20	
Chromium	82.7	3.70	mg/kg wet	88.50	93	80-120	3	20	
Lead	55.4	18.5	mg/kg wet	77.80	71	69-131	1	20	
Selenium	80.2	18.5	mg/kg wet	81.10	99	80-120	3	20	
Silver	121	1.85	mg/kg wet	114.0	106	80-120	4	20	

Batch CJ50536 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.40	3.81	mg/kg wet	9.700	97	80-120
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LCS Dup

Mercury	10.5	3.60	mg/kg wet	9.700	109	80-120	11	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 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: 1510059

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 CJ50521 - 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: 1510059

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 CJ50521 - 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	0.0614		mg/kg wet	0.05000		123	70-130			
Surrogate: 4-Bromofluorobenzene	0.0416		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0452		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,2,2-Tetrachloroethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,1,2-Trichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloropropene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,3-Trichloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trichlorobenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromo-3-Chloropropane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloropropane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,3-Dichloropropane	0.0468	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: 1510059

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 CJ50521 - 5035

1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130			
1-Chlorohexane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
2,2-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
2-Hexanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
4-Isopropyltoluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130			
Acetone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
Benzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Bromobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Bromochloromethane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Bromodichloromethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Bromomethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Carbon Disulfide	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Chlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Chloroform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Chloromethane	0.0461	0.0100	mg/kg wet	0.05000		92	70-130			
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromomethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0475	0.0100	mg/kg wet	0.05000		95	70-130			
Diethyl Ether	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Ethyl tertiary-butyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Hexachlorobutadiene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Methyl tert-Butyl Ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0547	0.0250	mg/kg wet	0.05000		109	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
n-Propylbenzene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
sec-Butylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Styrene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
tert-Butylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
Tertiary-amyl methyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrachloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510059

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 CJ50521 - 5035

Toluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,3-Dichloropropene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichloroethene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Trichlorofluoromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0705	0.0050	mg/kg wet	0.05000		141	70-130			B+
Vinyl Chloride	0.0503	0.0100	mg/kg wet	0.05000		101	70-130			
Xylene O	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0905	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0546		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0483		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0492		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
1,1,1-Trichloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	17	25	
1,1,2-Trichloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	15	25	
1,1-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	13	25	
1,1-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	14	25	
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
1,2,3-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	16	25	
1,2,3-Trichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
1,2,4-Trichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	15	25	
1,2-Dibromo-3-Chloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	21	25	
1,2-Dibromoethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	16	25	
1,2-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,2-Dichloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	15	25	
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,3,5-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	14	25	
1,3-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,3-Dichloropropane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
1,4-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130	13	20	
1-Chlorohexane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
2,2-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	14	25	
2-Butanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130	18	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	13	25	
2-Hexanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	20	25	
4-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	12	25	
4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	20	25	
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130	21	25	



CERTIFICATE OF ANALYSIS

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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510059

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 5035

Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	12	25	
Bromobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Bromochloromethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	16	25	
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	14	25	
Bromoform	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	16	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	22	25	
Carbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	14	25	
Carbon Tetrachloride	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	13	25	
Chlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
Chloroethane	0.0423	0.0100	mg/kg wet	0.05000		85	70-130	9	25	
Chloroform	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	13	25	
Chloromethane	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	13	25	
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	13	25	
cis-1,3-Dichloropropene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
Dibromochloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130	16	25	
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
Dichlorodifluoromethane	0.0538	0.0100	mg/kg wet	0.05000		108	70-130	12	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	17	25	
Di-isopropyl ether	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
Ethyl tertiary-butyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	12	25	
Hexachlorobutadiene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
Isopropylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	19	25	
Methylene Chloride	0.0628	0.0250	mg/kg wet	0.05000		126	70-130	14	25	
Naphthalene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	19	25	
n-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
n-Propylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	15	25	
sec-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
Styrene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
tert-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	17	25	
Tetrachloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tetrahydrofuran	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	23	25	
Toluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	12	25	
trans-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	15	25	
Vinyl Acetate	0.0864	0.0050	mg/kg wet	0.05000		173	70-130	20	25	B+
Vinyl Chloride	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	11	25	
Xylene O	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	11	25	
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0556		mg/kg wet	0.05000		111	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 CJ50521 - 5035

Surrogate: 4-Bromofluorobenzene	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50214 - 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	4.95		mg/kg wet	5.000		99	40-140			
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LCS

Decane (C10)	1.7	0.2	mg/kg wet	2.500		69	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		93	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		97	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		90	40-140			

Surrogate: O-Terphenyl	4.38		mg/kg wet	5.000		88	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	11	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		103	40-140	13	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		84	40-140	14	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
8100M Total Petroleum Hydrocarbons										
Batch CJ50214 - 3546										
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140	15	25	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		104	40-140	12	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		98	40-140	10	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	14	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140	8	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	10	25	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		104	40-140	15	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		97	40-140	13	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	14	25	
Total Petroleum Hydrocarbons	34.6	37.5	mg/kg wet	35.00		99	40-140	13	25	
Triacotane (C30)	2.5	0.2	mg/kg wet	2.500		99	40-140	9	25	

Surrogate: O-Terphenyl 4.93 mg/kg wet 5.000 99 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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: 1510059

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 CJ50515 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.79		mg/kg wet	3.333		84	30-130			
Surrogate: 2,4,6-Tribromophenol	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Chlorophenol-d4	4.51		mg/kg wet	5.000		90	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.76		mg/kg wet	5.000		95	30-130			
Surrogate: Nitrobenzene-d5	3.22		mg/kg wet	3.333		97	30-130			
Surrogate: Phenol-d6	4.96		mg/kg wet	5.000		99	30-130			
Surrogate: p-Terphenyl-d14	3.46		mg/kg wet	3.333		104	30-130			

LCS

1,1-Biphenyl	2.91	0.333	mg/kg wet	3.333		87	40-140			
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,4-Dichlorobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2,3,4,6-Tetrachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
2,4,5-Trichlorophenol	3.14	0.333	mg/kg wet	3.333		94	30-130			
2,4,6-Trichlorophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	3.19	0.333	mg/kg wet	3.333		96	30-130			
2,4-Dinitrophenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
2,4-Dinitrotoluene	3.34	0.333	mg/kg wet	3.333		100	40-140			
2,6-Dinitrotoluene	3.00	0.333	mg/kg wet	3.333		90	40-140			
2-Chloronaphthalene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2-Chlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Methylnaphthalene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	3.02	0.333	mg/kg wet	3.333		90	30-130			
2-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
2-Nitrophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140			
3+4-Methylphenol	6.13	0.667	mg/kg wet	6.667		92	30-130			
3-Nitroaniline	3.26	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
4-Bromophenyl-phenylether	2.95	0.333	mg/kg wet	3.333		89	40-140			
4-Chloro-3-Methylphenol	3.05	0.333	mg/kg wet	3.333		92	30-130			
4-Chloroaniline	2.53	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	2.95	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.45	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.37	1.67	mg/kg wet	3.333		101	30-130			
Acenaphthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Acenaphthylene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Acetophenone	3.09	0.667	mg/kg wet	3.333		93	40-140			
Aniline	2.45	0.667	mg/kg wet	3.333		73	40-140			
Anthracene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Benzo(a)anthracene	3.01	0.333	mg/kg wet	3.333		90	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510059

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 CJ50515 - 3546

Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		80	40-140			
bis(2-Chloroethoxy)methane	3.15	0.333	mg/kg wet	3.333		95	40-140			
bis(2-Chloroethyl)ether	3.43	0.333	mg/kg wet	3.333		103	40-140			
bis(2-chloroisopropyl)Ether	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140			
Carbazole	3.21	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140			
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.83	0.333	mg/kg wet	3.333		85	40-140			
Diethylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Di-n-octylphthalate	3.37	0.333	mg/kg wet	3.333		101	40-140			
Fluoranthene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Fluorene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobenzene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Hexachlorobutadiene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorocyclopentadiene	2.52	1.67	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.71	0.333	mg/kg wet	3.333		81	40-140			
Indeno(1,2,3-cd)Pyrene	3.08	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.99	0.333	mg/kg wet	3.333		90	40-140			
Naphthalene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	1.93	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.99	0.333	mg/kg wet	3.333		90	40-140			
N-nitrosodiphenylamine	3.05	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.51	1.67	mg/kg wet	3.333		45	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.42		mg/kg wet	5.000		88	30-130			
Surrogate: 2-Fluorobiphenyl	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.66		mg/kg wet	5.000		93	30-130			
Surrogate: Nitrobenzene-d5	3.07		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.82		mg/kg wet	5.000		96	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510059

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 CJ50515 - 3546

LCS Dup

1,1-Biphenyl	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
1,2,4-Trichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,2-Dichlorobenzene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
1,3-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,4-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		76	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.32	1.67	mg/kg wet	3.333		70	30-130	8	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	6	30	
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130	6	30	
2,4-Dichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	6	30	
2,4-Dimethylphenol	3.00	0.333	mg/kg wet	3.333		90	30-130	6	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	5	30	
2,4-Dinitrotoluene	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
2-Chlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
2-Methylnaphthalene	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130	7	30	
2-Nitroaniline	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
2-Nitrophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	5	30	
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140	0.02	30	
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130	8	30	
3-Nitroaniline	3.10	0.333	mg/kg wet	3.333		93	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
4-Bromophenyl-phenylether	2.83	0.333	mg/kg wet	3.333		85	40-140	4	30	
4-Chloro-3-Methylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130	6	30	
4-Chloroaniline	2.42	0.667	mg/kg wet	3.333		73	40-140	4	30	
4-Chloro-phenyl-phenyl ether	2.74	0.333	mg/kg wet	3.333		82	40-140	7	30	
4-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140	5	30	
4-Nitrophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	11	30	
Acenaphthene	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140	6	30	
Acetophenone	2.87	0.667	mg/kg wet	3.333		86	40-140	7	30	
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140	6	30	
Anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	5	30	
Azobenzene	3.15	0.333	mg/kg wet	3.333		95	40-140	5	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
Benzo(a)pyrene	2.94	0.167	mg/kg wet	3.333		88	40-140	5	30	
Benzo(b)fluoranthene	3.15	0.333	mg/kg wet	3.333		94	40-140	3	30	
Benzo(g,h,i)perylene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	8	30	
Benzoic Acid	2.25	1.67	mg/kg wet	3.333		68	40-140	4	30	
Benzyl Alcohol	2.55	0.333	mg/kg wet	3.333		77	40-140	5	30	
bis(2-Chloroethoxy)methane	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
bis(2-Chloroethyl)ether	3.20	0.333	mg/kg wet	3.333		96	40-140	7	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510059

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 CJ50515 - 3546

bis(2-chloroisopropyl)Ether	2.67	0.333	mg/kg wet	3.333		80	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	8	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	7	30	
Carbazole	3.07	0.333	mg/kg wet	3.333		92	40-140	5	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	6	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	5	30	
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140	7	30	
Dimethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	7	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Di-n-octylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140	7	30	
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	5	30	
Fluorene	2.84	0.333	mg/kg wet	3.333		85	40-140	6	30	
Hexachlorobenzene	2.52	0.167	mg/kg wet	3.333		76	40-140	4	30	
Hexachlorobutadiene	2.46	0.333	mg/kg wet	3.333		74	40-140	6	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	6	30	
Hexachloroethane	2.55	0.333	mg/kg wet	3.333		76	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	6	30	
Isophorone	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Naphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140	6	30	
Nitrobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	6	30	
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	7	30	
N-Nitroso-Di-n-Propylamine	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	4	30	
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
Phenol	2.72	0.333	mg/kg wet	3.333		82	30-130	9	30	
Pyrene	2.82	0.333	mg/kg wet	3.333		85	40-140	6	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		40	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: 2,4,6-Tribromophenol	3.66		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: Nitrobenzene-d5	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.24		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		78	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510059

Notes and Definitions

- Z-10 Soil pH measured in water at 20.5 °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+).
- 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: 1510059

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: 15100059
Date Project Due: 10/9/15
Days For Project: 5 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: **10.8**

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 @ 1730 JL 10/2/15

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: 10/2/15 1527

Reviewed By: [Signature]

Date/Time: 10/2/15 1720



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: 1510060

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:04 pm, Oct 09, 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: 1510060

SAMPLE RECEIPT

The following samples were received on October 02, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on October 2, 2015 at 17:30.

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>
1510060-01	Material S&S Loam 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: 1510060

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1510060-01 Surrogate recovery(ies) above upper control limit (S+).

1,2-Dichloroethane-d4 (139% @ 70-130%)

CJ50521-BS1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (141% @ 70-130%)

CJ50521-BSD1 Blank Spike recovery is above upper control limit (B+).

Vinyl Acetate (173% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0063-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).

Total Petroleum Hydrocarbons (21% @ 20%)

8270D Semi-Volatile Organic Compounds

CYJ0051-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (100% @ 80-120%), Benzoic Acid (83% @ 80-120%)

CYJ0051-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

3-Nitroaniline (22% @ 20%), 4-Nitroaniline (23% @ 20%), 4-Nitrophenol (28% @ 20%),
bis(2-Chloroethyl)ether (26% @ 20%)

CYJ0051-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (25% @ 20%), Pyridine (24% @ 20%)

CYJ0066-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (76% @ 80-120%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

Aniline (32% @ 20%), Azobenzene (24% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%),
Di-n-octylphthalate (22% @ 20%)

CYJ0066-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Benzoic Acid (24% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (29% @ 20%)

CYJ0076-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (106% @ 80-120%), Benzoic Acid (81% @ 80-120%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

bis(2-Chloroethyl)ether (30% @ 20%)

CYJ0076-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (30% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pyridine (28% @ 20%)

Total Metals

CJ50535-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Arsenic (32% @ 20%)

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: 1510060

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: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
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 (2.61)		6010C		1	KJK	10/06/15 21:52	2.07	100	CJ50535
Barium	17.4 (2.61)		6010C		1	KJK	10/06/15 21:52	2.07	100	CJ50535
Cadmium	ND (0.52)		6010C		1	KJK	10/06/15 21:52	2.07	100	CJ50535
Chromium	4.09 (1.04)		6010C		1	KJK	10/06/15 21:52	2.07	100	CJ50535
Lead	8.82 (5.22)		6010C		1	KJK	10/06/15 21:52	2.07	100	CJ50535
Mercury	ND (0.034)		7471B		1	PJP	10/06/15 14:10	0.63	40	CJ50536
Selenium	ND (10.4)		6010C		2	KJK	10/07/15 20:02	2.07	100	CJ50535
Silver	ND (0.52)		6010C		1	KJK	10/06/15 21:52	2.07	100	CJ50535



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
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 (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,1,2,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1,4-Dioxane	ND (0.0915)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
1-Chlorohexane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
2-Butanone	ND (0.0457)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
2-Chlorotoluene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
2-Hexanone	ND (0.0457)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
4-Chlorotoluene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
4-Methyl-2-Pentanone	ND (0.0457)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Acetone	ND (0.0457)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Benzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Bromobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
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 (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Bromodichloromethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Bromoform	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Bromomethane	ND (0.0091)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Carbon Disulfide	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Chlorobenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Chloroethane	ND (0.0091)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Chloroform	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Chloromethane	ND (0.0091)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Dibromochloromethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Dibromomethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Dichlorodifluoromethane	ND (0.0091)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Diethyl Ether	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Di-isopropyl ether	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Ethylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Isopropylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Methylene Chloride	ND (0.0229)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Naphthalene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
n-Butylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
n-Propylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
sec-Butylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Styrene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
tert-Butylbenzene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Tetrachloroethene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Tetrahydrofuran	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
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 (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Trichloroethene	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Vinyl Acetate	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Vinyl Chloride	ND (0.0091)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Xylene O	ND (0.0046)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Xylene P,M	ND (0.0091)		8260B Low		1	10/05/15 15:20	CYJ0047	CJ50521
Xylenes (Total)	ND (0.0091)		8260B Low		1	10/05/15 15:20		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>139 %</i>	<i>S+</i>	<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>81 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</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: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/2/15 18:05

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	66.0 (41.5)		8100M		1	10/06/15 0:25	CYJ0063	CJ50214
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		60 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
1,2,4-Trichlorobenzene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
1,2-Dichlorobenzene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
1,3-Dichlorobenzene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
1,4-Dichlorobenzene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,3,4,6-Tetrachlorophenol	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,4,5-Trichlorophenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,4,6-Trichlorophenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,4-Dichlorophenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,4-Dimethylphenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,4-Dinitrophenol	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,4-Dinitrotoluene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2,6-Dinitrotoluene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2-Chloronaphthalene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2-Chlorophenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2-Methylnaphthalene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2-Methylphenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2-Nitroaniline	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
2-Nitrophenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
3,3'-Dichlorobenzidine	ND (0.735)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
3+4-Methylphenol	ND (0.735)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
3-Nitroaniline	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4,6-Dinitro-2-Methylphenol	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4-Bromophenyl-phenylether	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4-Chloro-3-Methylphenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4-Chloroaniline	ND (0.735)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4-Chloro-phenyl-phenyl ether	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4-Nitroaniline	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
4-Nitrophenol	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Acenaphthene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Acenaphthylene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Acetophenone	ND (0.735)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/5/15 14:04

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 (0.735)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Anthracene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Azobenzene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzo(a)anthracene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzo(a)pyrene	ND (0.184)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzo(b)fluoranthene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzo(g,h,i)perylene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzo(k)fluoranthene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzoic Acid	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Benzyl Alcohol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
bis(2-Chloroethoxy)methane	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
bis(2-Chloroethyl)ether	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
bis(2-chloroisopropyl)Ether	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
bis(2-Ethylhexyl)phthalate	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Butylbenzylphthalate	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Carbazole	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Chrysene	ND (0.184)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Dibenzofuran	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Diethylphthalate	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Dimethylphthalate	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Di-n-butylphthalate	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Di-n-octylphthalate	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Fluoranthene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Fluorene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Hexachlorobenzene	ND (0.184)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Hexachlorobutadiene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Hexachlorocyclopentadiene	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Hexachloroethane	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Indeno(1,2,3-cd)Pyrene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Isophorone	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Naphthalene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Material S&S Loam 3
 Date Sampled: 10/02/15 14:15
 Percent Solids: 93
 Initial Volume: 14.7
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510060
 ESS Laboratory Sample ID: 1510060-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 10/5/15 14:04

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 (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
N-Nitrosodimethylamine	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
N-Nitroso-Di-n-Propylamine	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
N-nitrosodiphenylamine	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Pentachlorophenol	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Phenanthrene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Phenol	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Pyrene	ND (0.367)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515
Pyridine	ND (1.84)		8270D		1	10/05/15 18:27	CYJ0051	CJ50515

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	55 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	62 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	62 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	56 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	63 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	61 %		30-130
<i>Surrogate: Phenol-d6</i>	68 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Material S&S Loam 3
Date Sampled: 10/02/15 14:15
Percent Solids: 93

ESS Laboratory Work Order: 1510060
ESS Laboratory Sample ID: 1510060-01
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)	5.53 (N/A)		9045		1	MJV	10/02/15 18:16	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.6 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510060

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 CJ50535 - 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	63.4	9.80	mg/kg wet	52.30	121	43-169
Barium	141	9.80	mg/kg wet	145.0	97	80-120
Cadmium	55.0	1.96	mg/kg wet	71.60	77	62-138
Chromium	79.9	3.92	mg/kg wet	88.50	90	80-120
Lead	54.7	19.6	mg/kg wet	77.80	70	69-131
Selenium	77.5	19.6	mg/kg wet	81.10	96	80-120
Silver	117	1.96	mg/kg wet	114.0	102	80-120

LCS Dup

Arsenic	45.8	9.26	mg/kg wet	52.30	88	43-169	32	20	D+
Barium	146	9.26	mg/kg wet	145.0	101	80-120	4	20	
Cadmium	56.0	1.85	mg/kg wet	71.60	78	62-138	2	20	
Chromium	82.7	3.70	mg/kg wet	88.50	93	80-120	3	20	
Lead	55.4	18.5	mg/kg wet	77.80	71	69-131	1	20	
Selenium	80.2	18.5	mg/kg wet	81.10	99	80-120	3	20	
Silver	121	1.85	mg/kg wet	114.0	106	80-120	4	20	

Batch CJ50536 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.40	3.81	mg/kg wet	9.700	97	80-120
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LCS Dup

Mercury	10.5	3.60	mg/kg wet	9.700	109	80-120	11	20	
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 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: 1510060

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 CJ50521 - 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: 1510060

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 CJ50521 - 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	0.0614		mg/kg wet	0.05000		123	70-130			
Surrogate: 4-Bromofluorobenzene	0.0416		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0452		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,1,2,2-Tetrachloroethane	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,1,2-Trichloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloropropene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,3-Trichloropropane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trichlorobenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromo-3-Chloropropane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloropropane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,3-Dichloropropane	0.0468	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: 1510060

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 CJ50521 - 5035

1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
1,4-Dioxane	1.04	0.100	mg/kg wet	1.000		104	70-130			
1-Chlorohexane	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
2,2-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.229	0.0500	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
2-Hexanone	0.250	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
4-Isopropyltoluene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130			
Acetone	0.259	0.0500	mg/kg wet	0.2500		104	70-130			
Benzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Bromobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Bromochloromethane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Bromodichloromethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Bromoform	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Bromomethane	0.0422	0.0100	mg/kg wet	0.05000		84	70-130			
Carbon Disulfide	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Chlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0463	0.0100	mg/kg wet	0.05000		93	70-130			
Chloroform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
Chloromethane	0.0461	0.0100	mg/kg wet	0.05000		92	70-130			
cis-1,2-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
cis-1,3-Dichloropropene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromomethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0475	0.0100	mg/kg wet	0.05000		95	70-130			
Diethyl Ether	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Di-isopropyl ether	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Ethyl tertiary-butyl ether	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Hexachlorobutadiene	0.0440	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Methyl tert-Butyl Ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0547	0.0250	mg/kg wet	0.05000		109	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
n-Propylbenzene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
sec-Butylbenzene	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Styrene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
tert-Butylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
Tertiary-amyl methyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrachloroethene	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510060

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 CJ50521 - 5035

Toluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
trans-1,2-Dichloroethene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,3-Dichloropropene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichloroethene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Trichlorofluoromethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Acetate	0.0705	0.0050	mg/kg wet	0.05000		141	70-130			B+
Vinyl Chloride	0.0503	0.0100	mg/kg wet	0.05000		101	70-130			
Xylene O	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Xylene P,M	0.0905	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0546		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0483		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0492		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
1,1,1-Trichloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	14	25	
1,1,2,2-Tetrachloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	17	25	
1,1,2-Trichloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	15	25	
1,1-Dichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	13	25	
1,1-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	14	25	
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	11	25	
1,2,3-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	16	25	
1,2,3-Trichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	19	25	
1,2,4-Trichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	15	25	
1,2-Dibromo-3-Chloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	21	25	
1,2-Dibromoethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	16	25	
1,2-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,2-Dichloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	15	25	
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
1,3,5-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	14	25	
1,3-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
1,3-Dichloropropane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
1,4-Dichlorobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130	13	20	
1-Chlorohexane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
2,2-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	14	25	
2-Butanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130	18	25	
2-Chlorotoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	13	25	
2-Hexanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	20	25	
4-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	12	25	
4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	20	25	
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130	21	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510060

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50521 - 5035

Benzene	0.0564	0.0050	mg/kg wet	0.05000		113	70-130	12	25	
Bromobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Bromochloromethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	16	25	
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	14	25	
Bromoform	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	16	25	
Bromomethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	22	25	
Carbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	14	25	
Carbon Tetrachloride	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	13	25	
Chlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	13	25	
Chloroethane	0.0423	0.0100	mg/kg wet	0.05000		85	70-130	9	25	
Chloroform	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	13	25	
Chloromethane	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	13	25	
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	13	25	
cis-1,3-Dichloropropene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	14	25	
Dibromochloromethane	0.0618	0.0050	mg/kg wet	0.05000		124	70-130	16	25	
Dibromomethane	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	15	25	
Dichlorodifluoromethane	0.0538	0.0100	mg/kg wet	0.05000		108	70-130	12	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	17	25	
Di-isopropyl ether	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	14	25	
Ethyl tertiary-butyl ether	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	12	25	
Hexachlorobutadiene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	14	25	
Isopropylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	15	25	
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	19	25	
Methylene Chloride	0.0628	0.0250	mg/kg wet	0.05000		126	70-130	14	25	
Naphthalene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	19	25	
n-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	13	25	
n-Propylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	15	25	
sec-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	14	25	
Styrene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	13	25	
tert-Butylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	13	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	17	25	
Tetrachloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tetrahydrofuran	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	23	25	
Toluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	12	25	
trans-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	15	25	
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	15	25	
Vinyl Acetate	0.0864	0.0050	mg/kg wet	0.05000		173	70-130	20	25	B+
Vinyl Chloride	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	11	25	
Xylene O	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	11	25	
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0556		mg/kg wet	0.05000		111	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 CJ50521 - 5035

Surrogate: 4-Bromofluorobenzene	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50214 - 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	4.95		mg/kg wet	5.000		99	40-140			
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LCS

Decane (C10)	1.7	0.2	mg/kg wet	2.500		69	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		93	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		97	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		90	40-140			

Surrogate: O-Terphenyl	4.38		mg/kg wet	5.000		88	40-140			
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LCS Dup

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	11	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		103	40-140	13	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		84	40-140	14	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
8100M Total Petroleum Hydrocarbons										
Batch CJ50214 - 3546										
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140	15	25	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		104	40-140	12	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		98	40-140	10	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		112	40-140	14	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140	8	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	10	25	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		104	40-140	15	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		97	40-140	13	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	14	25	
Total Petroleum Hydrocarbons	34.6	37.5	mg/kg wet	35.00		99	40-140	13	25	
Triacotane (C30)	2.5	0.2	mg/kg wet	2.500		99	40-140	9	25	
<i>Surrogate: O-Terphenyl</i>	4.93		mg/kg wet	5.000		99	40-140			

8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50515 - 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 CJ50515 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.79		mg/kg wet	3.333		84	30-130			
Surrogate: 2,4,6-Tribromophenol	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Chlorophenol-d4	4.51		mg/kg wet	5.000		90	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.76		mg/kg wet	5.000		95	30-130			
Surrogate: Nitrobenzene-d5	3.22		mg/kg wet	3.333		97	30-130			
Surrogate: Phenol-d6	4.96		mg/kg wet	5.000		99	30-130			
Surrogate: p-Terphenyl-d14	3.46		mg/kg wet	3.333		104	30-130			

LCS

1,1-Biphenyl	2.91	0.333	mg/kg wet	3.333		87	40-140			
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,3-Dichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,4-Dichlorobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2,3,4,6-Tetrachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
2,4,5-Trichlorophenol	3.14	0.333	mg/kg wet	3.333		94	30-130			
2,4,6-Trichlorophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
2,4-Dichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4-Dimethylphenol	3.19	0.333	mg/kg wet	3.333		96	30-130			
2,4-Dinitrophenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
2,4-Dinitrotoluene	3.34	0.333	mg/kg wet	3.333		100	40-140			
2,6-Dinitrotoluene	3.00	0.333	mg/kg wet	3.333		90	40-140			
2-Chloronaphthalene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2-Chlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2-Methylnaphthalene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	3.02	0.333	mg/kg wet	3.333		90	30-130			
2-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
2-Nitrophenol	3.23	0.333	mg/kg wet	3.333		97	30-130			
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140			
3+4-Methylphenol	6.13	0.667	mg/kg wet	6.667		92	30-130			
3-Nitroaniline	3.26	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	3.01	1.67	mg/kg wet	3.333		90	30-130			
4-Bromophenyl-phenylether	2.95	0.333	mg/kg wet	3.333		89	40-140			
4-Chloro-3-Methylphenol	3.05	0.333	mg/kg wet	3.333		92	30-130			
4-Chloroaniline	2.53	0.667	mg/kg wet	3.333		76	40-140			
4-Chloro-phenyl-phenyl ether	2.95	0.333	mg/kg wet	3.333		88	40-140			
4-Nitroaniline	3.45	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.37	1.67	mg/kg wet	3.333		101	30-130			
Acenaphthene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Acenaphthylene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Acetophenone	3.09	0.667	mg/kg wet	3.333		93	40-140			
Aniline	2.45	0.667	mg/kg wet	3.333		73	40-140			
Anthracene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Benzo(a)anthracene	3.01	0.333	mg/kg wet	3.333		90	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510060

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 CJ50515 - 3546

Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.07	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		80	40-140			
bis(2-Chloroethoxy)methane	3.15	0.333	mg/kg wet	3.333		95	40-140			
bis(2-Chloroethyl)ether	3.43	0.333	mg/kg wet	3.333		103	40-140			
bis(2-chloroisopropyl)Ether	2.80	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Ethylhexyl)phthalate	3.25	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140			
Carbazole	3.21	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.99	0.167	mg/kg wet	3.333		90	40-140			
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Dibenzofuran	2.83	0.333	mg/kg wet	3.333		85	40-140			
Diethylphthalate	3.11	0.333	mg/kg wet	3.333		93	40-140			
Dimethylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140			
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Di-n-octylphthalate	3.37	0.333	mg/kg wet	3.333		101	40-140			
Fluoranthene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Fluorene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Hexachlorobenzene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Hexachlorobutadiene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Hexachlorocyclopentadiene	2.52	1.67	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.71	0.333	mg/kg wet	3.333		81	40-140			
Indeno(1,2,3-cd)Pyrene	3.08	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.99	0.333	mg/kg wet	3.333		90	40-140			
Naphthalene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.04	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	1.93	0.333	mg/kg wet	3.333		58	40-140			
N-Nitroso-Di-n-Propylamine	2.99	0.333	mg/kg wet	3.333		90	40-140			
N-nitrosodiphenylamine	3.05	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	3.02	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Phenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.51	1.67	mg/kg wet	3.333		45	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.42		mg/kg wet	5.000		88	30-130			
Surrogate: 2-Fluorobiphenyl	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.66		mg/kg wet	5.000		93	30-130			
Surrogate: Nitrobenzene-d5	3.07		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.82		mg/kg wet	5.000		96	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510060

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 CJ50515 - 3546

LCS Dup

1,1-Biphenyl	2.74	0.333	mg/kg wet	3.333		82	40-140	6	30	
1,2,4-Trichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,2-Dichlorobenzene	2.61	0.333	mg/kg wet	3.333		78	40-140	5	30	
1,3-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,4-Dichlorobenzene	2.55	0.333	mg/kg wet	3.333		76	40-140	7	30	
2,3,4,6-Tetrachlorophenol	2.32	1.67	mg/kg wet	3.333		70	30-130	8	30	
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130	6	30	
2,4,6-Trichlorophenol	3.03	0.333	mg/kg wet	3.333		91	30-130	6	30	
2,4-Dichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	6	30	
2,4-Dimethylphenol	3.00	0.333	mg/kg wet	3.333		90	30-130	6	30	
2,4-Dinitrophenol	2.68	1.67	mg/kg wet	3.333		80	30-130	5	30	
2,4-Dinitrotoluene	3.11	0.333	mg/kg wet	3.333		93	40-140	7	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
2-Chlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	7	30	
2-Methylnaphthalene	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
2-Methylphenol	2.82	0.333	mg/kg wet	3.333		85	30-130	7	30	
2-Nitroaniline	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
2-Nitrophenol	3.06	0.333	mg/kg wet	3.333		92	30-130	5	30	
3,3'-Dichlorobenzidine	2.14	0.667	mg/kg wet	3.333		64	40-140	0.02	30	
3+4-Methylphenol	5.68	0.667	mg/kg wet	6.667		85	30-130	8	30	
3-Nitroaniline	3.10	0.333	mg/kg wet	3.333		93	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
4-Bromophenyl-phenylether	2.83	0.333	mg/kg wet	3.333		85	40-140	4	30	
4-Chloro-3-Methylphenol	2.88	0.333	mg/kg wet	3.333		86	30-130	6	30	
4-Chloroaniline	2.42	0.667	mg/kg wet	3.333		73	40-140	4	30	
4-Chloro-phenyl-phenyl ether	2.74	0.333	mg/kg wet	3.333		82	40-140	7	30	
4-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140	5	30	
4-Nitrophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	11	30	
Acenaphthene	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Acenaphthylene	2.73	0.333	mg/kg wet	3.333		82	40-140	6	30	
Acetophenone	2.87	0.667	mg/kg wet	3.333		86	40-140	7	30	
Aniline	2.30	0.667	mg/kg wet	3.333		69	40-140	6	30	
Anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	5	30	
Azobenzene	3.15	0.333	mg/kg wet	3.333		95	40-140	5	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
Benzo(a)pyrene	2.94	0.167	mg/kg wet	3.333		88	40-140	5	30	
Benzo(b)fluoranthene	3.15	0.333	mg/kg wet	3.333		94	40-140	3	30	
Benzo(g,h,i)perylene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	8	30	
Benzoic Acid	2.25	1.67	mg/kg wet	3.333		68	40-140	4	30	
Benzyl Alcohol	2.55	0.333	mg/kg wet	3.333		77	40-140	5	30	
bis(2-Chloroethoxy)methane	2.95	0.333	mg/kg wet	3.333		88	40-140	7	30	
bis(2-Chloroethyl)ether	3.20	0.333	mg/kg wet	3.333		96	40-140	7	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510060

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 CJ50515 - 3546

bis(2-chloroisopropyl)Ether	2.67	0.333	mg/kg wet	3.333		80	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	8	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	7	30	
Carbazole	3.07	0.333	mg/kg wet	3.333		92	40-140	5	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	6	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	5	30	
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140	7	30	
Dimethylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	7	30	
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Di-n-octylphthalate	3.15	0.333	mg/kg wet	3.333		95	40-140	7	30	
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	5	30	
Fluorene	2.84	0.333	mg/kg wet	3.333		85	40-140	6	30	
Hexachlorobenzene	2.52	0.167	mg/kg wet	3.333		76	40-140	4	30	
Hexachlorobutadiene	2.46	0.333	mg/kg wet	3.333		74	40-140	6	30	
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140	6	30	
Hexachloroethane	2.55	0.333	mg/kg wet	3.333		76	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	6	30	
Isophorone	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Naphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140	6	30	
Nitrobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	6	30	
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	7	30	
N-Nitroso-Di-n-Propylamine	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	4	30	
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	6	30	
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140	5	30	
Phenol	2.72	0.333	mg/kg wet	3.333		82	30-130	9	30	
Pyrene	2.82	0.333	mg/kg wet	3.333		85	40-140	6	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		40	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: 2,4,6-Tribromophenol	3.66		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: Nitrobenzene-d5	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.24		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.62		mg/kg wet	3.333		78	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510060

Notes and Definitions

- Z-10 Soil pH measured in water at 20.6 °C.
- U Analyte included in the analysis, but not detected
- S+ Surrogate recovery(ies) above upper control limit (S+).
- 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+).
- 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: 1510060

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: 15100060
 Date Project Due: 10/9/15
 Days For Project: 5 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: 10.8
 - 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 @ 1730 10/2/15

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: 10/2/15 15:31
 Reviewed By: [Signature] Date/Time: 10/2/15 17:00

