



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: 1510048

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 1:53 pm, Oct 07, 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 15:00.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510048-01	Lopes Raynham 20% Org 2	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



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PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ50520-BS1 Blank Spike recovery is above upper control limit (B+).
Acetone (146% @ 70-130%), Vinyl Acetate (158% @ 70-130%)

CJ50520-BSD1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (166% @ 70-130%)

8270D Semi-Volatile Organic Compounds

CYJ0033-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (112% @ 80-120%), Benzoic Acid (114% @ 80-120%)

CYJ0033-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
2-Nitroaniline (22% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%), Phenol-d6 (21% @ 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](#)



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CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA.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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 2
Date Sampled: 10/02/15 11:40
Percent Solids: 83

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	4.11 (2.68)		6010C		1	KJK	10/03/15 13:51	2.26	100	CJ50237
Barium	24.2 (2.68)		6010C		1	KJK	10/03/15 13:51	2.26	100	CJ50237
Cadmium	ND (0.54)		6010C		1	KJK	10/03/15 13:51	2.26	100	CJ50237
Chromium	6.05 (1.07)		6010C		1	KJK	10/03/15 13:51	2.26	100	CJ50237
Lead	22.7 (5.36)		6010C		1	KJK	10/03/15 13:51	2.26	100	CJ50237
Mercury	0.042 (0.037)		7471B		1	PJP	10/06/15 12:59	0.65	40	CJ50205
Selenium	ND (10.7)		6010C		2	KJK	10/03/15 14:39	2.26	100	CJ50237
Silver	ND (0.54)		6010C		1	KJK	10/03/15 13:51	2.26	100	CJ50237



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Client Name: Charter Environmental, Inc.
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Client Sample ID: Lopes Raynham 20% Org 2
Date Sampled: 10/02/15 11:40
Percent Solids: 83
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
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	10/04/15 14:28	CYJ0046	CJ50520
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,1,2,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1,4-Dioxane	ND (0.0891)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
1-Chlorohexane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
2-Butanone	ND (0.0446)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
2-Chlorotoluene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
2-Hexanone	ND (0.0446)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
4-Chlorotoluene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
4-Methyl-2-Pentanone	ND (0.0446)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Acetone	ND (0.0446)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Benzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Bromobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520



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Client Name: Charter Environmental, Inc.
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Client Sample ID: Lopes Raynham 20% Org 2
Date Sampled: 10/02/15 11:40
Percent Solids: 83
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
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	10/04/15 14:28	CYJ0046	CJ50520
Bromodichloromethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Bromoform	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Bromomethane	ND (0.0089)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Carbon Disulfide	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Chlorobenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Chloroethane	ND (0.0089)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Chloroform	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Chloromethane	ND (0.0089)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Dibromochloromethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Dibromomethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Diethyl Ether	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Di-isopropyl ether	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Ethylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Isopropylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Methylene Chloride	ND (0.0223)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Naphthalene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
n-Butylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
n-Propylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
sec-Butylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Styrene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
tert-Butylbenzene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Tetrachloroethene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Tetrahydrofuran	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520



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Client Sample ID: Lopes Raynham 20% Org 2
Date Sampled: 10/02/15 11:40
Percent Solids: 83
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
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	10/04/15 14:28	CYJ0046	CJ50520
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Trichloroethene	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Vinyl Acetate	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Vinyl Chloride	ND (0.0089)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Xylene O	ND (0.0045)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Xylene P,M	ND (0.0089)		8260B Low		1	10/04/15 14:28	CYJ0046	CJ50520
Xylenes (Total)	ND (0.0089)		8260B Low		1	10/04/15 14:28		[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>80 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>94 %</i>		<i>70-130</i>



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Client Name: Charter Environmental, Inc.
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Date Sampled: 10/02/15 11:40
Percent Solids: 83
Initial Volume: 19.9
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/2/15 16:14

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 (45.7)		8100M		1	10/03/15 2:32	CYJ0035	CJ50214
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>96 %</i>		<i>40-140</i>				



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Date Sampled: 10/02/15 11:40
Percent Solids: 83
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/2/15 15:44

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 (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
1,2,4-Trichlorobenzene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
1,2-Dichlorobenzene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
1,3-Dichlorobenzene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
1,4-Dichlorobenzene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,3,4,6-Tetrachlorophenol	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,4,5-Trichlorophenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,4,6-Trichlorophenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,4-Dichlorophenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,4-Dimethylphenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,4-Dinitrophenol	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,4-Dinitrotoluene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2,6-Dinitrotoluene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2-Chloronaphthalene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2-Chlorophenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2-Methylnaphthalene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2-Methylphenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2-Nitroaniline	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
2-Nitrophenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
3,3'-Dichlorobenzidine	ND (0.842)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
3+4-Methylphenol	ND (0.842)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
3-Nitroaniline	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4,6-Dinitro-2-Methylphenol	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4-Bromophenyl-phenylether	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4-Chloro-3-Methylphenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4-Chloroaniline	ND (0.842)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4-Chloro-phenyl-phenyl ether	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4-Nitroaniline	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
4-Nitrophenol	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Acenaphthene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Acenaphthylene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Acetophenone	ND (0.842)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 2
Date Sampled: 10/02/15 11:40
Percent Solids: 83
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/2/15 15:44

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 (0.842)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Anthracene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Azobenzene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzo(a)anthracene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzo(a)pyrene	ND (0.211)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzo(b)fluoranthene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzo(g,h,i)perylene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzo(k)fluoranthene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzoic Acid	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Benzyl Alcohol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
bis(2-Chloroethoxy)methane	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
bis(2-Chloroethyl)ether	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
bis(2-chloroisopropyl)Ether	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
bis(2-Ethylhexyl)phthalate	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Butylbenzylphthalate	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Carbazole	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Chrysene	0.279 (0.211)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Dibenzo(a,h)Anthracene	ND (0.211)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Dibenzofuran	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Diethylphthalate	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Dimethylphthalate	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Di-n-butylphthalate	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Di-n-octylphthalate	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Fluoranthene	0.470 (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Fluorene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Hexachlorobenzene	ND (0.211)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Hexachlorobutadiene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Hexachlorocyclopentadiene	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Hexachloroethane	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Indeno(1,2,3-cd)Pyrene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Isophorone	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Naphthalene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes Raynham 20% Org 2
 Date Sampled: 10/02/15 11:40
 Percent Solids: 83
 Initial Volume: 14.4
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510048
 ESS Laboratory Sample ID: 1510048-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 10/2/15 15:44

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 (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
N-Nitrosodimethylamine	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
N-Nitroso-Di-n-Propylamine	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
N-nitrosodiphenylamine	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Pentachlorophenol	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Phenanthrene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Phenol	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Pyrene	ND (0.420)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215
Pyridine	ND (2.11)		8270D		1	10/02/15 23:37	CYJ0033	CJ50215

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	58 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	72 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	66 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	64 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	67 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	65 %		30-130
<i>Surrogate: Phenol-d6</i>	72 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	72 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 2
Date Sampled: 10/02/15 11:40
Percent Solids: 83

ESS Laboratory Work Order: 1510048
ESS Laboratory Sample ID: 1510048-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.39 (N/A)		9045		1	JLK	10/02/15 15:13	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 19.3 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50205 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet							
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LCS

Mercury	25.2	3.88	mg/kg wet	24.90		101	80-120			
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LCS Dup

Mercury	26.4	3.96	mg/kg wet	24.90		106	80-120	5	20	
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Batch CJ50237 - 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	127	10.0	mg/kg wet	133.0		95	80-120			
Barium	256	10.0	mg/kg wet	229.0		112	80-120			
Cadmium	105	2.00	mg/kg wet	123.0		86	80-120			
Chromium	58.2	4.00	mg/kg wet	63.20		92	80-120			
Lead	99.3	20.0	mg/kg wet	108.0		92	80-120			
Selenium	64.8	20.0	mg/kg wet	81.40		80	64-136			
Silver	72.5	2.00	mg/kg wet	74.80		97	80-120			

LCS Dup

Arsenic	126	10.0	mg/kg wet	133.0		95	80-120	0.6	20	
Barium	220	10.0	mg/kg wet	229.0		96	80-120	15	20	
Cadmium	105	2.00	mg/kg wet	123.0		86	80-120	0.02	20	
Chromium	58.3	4.00	mg/kg wet	63.20		92	80-120	0.2	20	
Lead	102	20.0	mg/kg wet	108.0		94	80-120	2	20	
Selenium	64.3	20.0	mg/kg wet	81.40		79	64-136	0.8	20	
Silver	73.3	2.00	mg/kg wet	74.80		98	80-120	1	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50520 - 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: 1510048

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 CJ50520 - 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: 1510048

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 CJ50520 - 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	0.0530		mg/kg wet	0.05000		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0415		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0427		mg/kg wet	0.05000		85	70-130			
Surrogate: Toluene-d8	0.0455		mg/kg wet	0.05000		91	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,1,1-Trichloroethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,2,2-Tetrachloroethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,1,2-Trichloroethane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,1-Dichloroethene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichloropropane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,4-Trichlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,4-Trimethylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dibromo-3-Chloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,3,5-Trimethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,3-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50520 - 5035

1,4-Dichlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,4-Dioxane	0.972	0.100	mg/kg wet	1.000		97	70-130			
1-Chlorohexane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
2-Butanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130			
2-Chlorotoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.282	0.0500	mg/kg wet	0.2500		113	70-130			
4-Chlorotoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
4-Methyl-2-Pentanone	0.257	0.0500	mg/kg wet	0.2500		103	70-130			
Acetone	0.365	0.0500	mg/kg wet	0.2500		146	70-130			B+
Benzene	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Bromobenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Bromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromodichloromethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
Bromomethane	0.0498	0.0100	mg/kg wet	0.05000		100	70-130			
Carbon Disulfide	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
Carbon Tetrachloride	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Chloroethane	0.0504	0.0100	mg/kg wet	0.05000		101	70-130			
Chloroform	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Chloromethane	0.0550	0.0100	mg/kg wet	0.05000		110	70-130			
cis-1,2-Dichloroethene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
cis-1,3-Dichloropropene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Dibromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Dibromomethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Dichlorodifluoromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130			
Diethyl Ether	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Di-isopropyl ether	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Ethyl tertiary-butyl ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Ethylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Isopropylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Methylene Chloride	0.0567	0.0250	mg/kg wet	0.05000		113	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
tert-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrachloroethene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrahydrofuran	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50520 - 5035

Toluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
trans-1,2-Dichloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Trichloroethene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Trichlorofluoromethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Vinyl Acetate	0.0791	0.0050	mg/kg wet	0.05000		158	70-130			B+
Vinyl Chloride	0.0560	0.0100	mg/kg wet	0.05000		112	70-130			
Xylene O	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Xylene P,M	0.0940	0.0100	mg/kg wet	0.1000		94	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0597		mg/kg wet	0.05000		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,1,1-Trichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	12	25	
1,1,2-Trichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	3	25	
1,1-Dichloroethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
1,1-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
1,1-Dichloropropene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
1,2,3-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	14	25	
1,2,4-Trichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,2,4-Trimethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
1,2-Dibromoethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	10	25	
1,2-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.7	25	
1,2-Dichloroethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	0.4	25	
1,2-Dichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
1,3-Dichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,3-Dichloropropane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	10	25	
1,4-Dichlorobenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
1,4-Dioxane	1.07	0.100	mg/kg wet	1.000		107	70-130	9	20	
1-Chlorohexane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
2,2-Dichloropropane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	0.7	25	
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130	4	25	
2-Chlorotoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
2-Hexanone	0.290	0.0500	mg/kg wet	0.2500		116	70-130	3	25	
4-Chlorotoluene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	6	25	
4-Methyl-2-Pentanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130	13	25	
Acetone	0.292	0.0500	mg/kg wet	0.2500		117	70-130	22	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50520 - 5035										
Benzene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	0.9	25	
Bromobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Bromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	5	25	
Bromodichloromethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	0.9	25	
Bromoform	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	12	25	
Bromomethane	0.0494	0.0100	mg/kg wet	0.05000		99	70-130	0.9	25	
Carbon Disulfide	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	0.04	25	
Carbon Tetrachloride	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
Chlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
Chloroethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130	4	25	
Chloroform	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	0.9	25	
Chloromethane	0.0507	0.0100	mg/kg wet	0.05000		101	70-130	8	25	
cis-1,2-Dichloroethene	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	1	25	
cis-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.7	25	
Dibromochloromethane	0.0617	0.0050	mg/kg wet	0.05000		123	70-130	15	25	
Dibromomethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Dichlorodifluoromethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	2	25	
Diethyl Ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Di-isopropyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Ethyl tertiary-butyl ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Ethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Hexachlorobutadiene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Methyl tert-Butyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
Methylene Chloride	0.0587	0.0250	mg/kg wet	0.05000		117	70-130	3	25	
Naphthalene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	11	25	
n-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
sec-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Styrene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
tert-Butylbenzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Tertiary-amyl methyl ether	0.0549	0.0050	mg/kg wet	0.05000		110	70-130	6	25	
Tetrachloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
Tetrahydrofuran	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
Toluene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	0.2	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
trans-1,3-Dichloropropene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.8	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	4	25	
Vinyl Acetate	0.0830	0.0050	mg/kg wet	0.05000		166	70-130	5	25	B+
Vinyl Chloride	0.0544	0.0100	mg/kg wet	0.05000		109	70-130	3	25	
Xylene O	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
Xylene P,M	0.0989	0.0100	mg/kg wet	0.1000		99	70-130	5	25	
Xylenes (Total)	0.147	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 CJ50520 - 5035

Surrogate: 4-Bromofluorobenzene	0.0480		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0484		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0506		mg/kg wet	0.05000		101	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 CJ50215 - 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 CJ50215 - 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

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 CJ50215 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Chlorophenol-d4	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.28		mg/kg wet	5.000		86	30-130			
Surrogate: Nitrobenzene-d5	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.45		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	2.87		mg/kg wet	3.333		86	30-130			

LCS

1,1-Biphenyl	2.86	0.333	mg/kg wet	3.333		86	40-140			
1,2,4-Trichlorobenzene	2.75	0.333	mg/kg wet	3.333		82	40-140			
1,2-Dichlorobenzene	2.81	0.333	mg/kg wet	3.333		84	40-140			
1,3-Dichlorobenzene	2.82	0.333	mg/kg wet	3.333		85	40-140			
1,4-Dichlorobenzene	2.75	0.333	mg/kg wet	3.333		83	40-140			
2,3,4,6-Tetrachlorophenol	2.39	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	3.02	0.333	mg/kg wet	3.333		91	30-130			
2,4,6-Trichlorophenol	3.12	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	3.17	0.333	mg/kg wet	3.333		95	30-130			
2,4-Dinitrophenol	2.66	1.67	mg/kg wet	3.333		80	30-130			
2,4-Dinitrotoluene	3.24	0.333	mg/kg wet	3.333		97	40-140			
2,6-Dinitrotoluene	2.92	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Chlorophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
2-Methylnaphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Methylphenol	2.95	0.333	mg/kg wet	3.333		88	30-130			
2-Nitroaniline	2.79	0.333	mg/kg wet	3.333		84	40-140			
2-Nitrophenol	3.16	0.333	mg/kg wet	3.333		95	30-130			
3,3'-Dichlorobenzidine	2.48	0.667	mg/kg wet	3.333		75	40-140			
3+4-Methylphenol	5.94	0.667	mg/kg wet	6.667		89	30-130			
3-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
4-Bromophenyl-phenylether	2.88	0.333	mg/kg wet	3.333		86	40-140			
4-Chloro-3-Methylphenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
4-Chloroaniline	2.63	0.667	mg/kg wet	3.333		79	40-140			
4-Chloro-phenyl-phenyl ether	2.85	0.333	mg/kg wet	3.333		86	40-140			
4-Nitroaniline	3.53	0.333	mg/kg wet	3.333		106	40-140			
4-Nitrophenol	3.27	1.67	mg/kg wet	3.333		98	30-130			
Acenaphthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Acenaphthylene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Acetophenone	3.04	0.667	mg/kg wet	3.333		91	40-140			
Aniline	2.58	0.667	mg/kg wet	3.333		77	40-140			
Anthracene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.25	0.333	mg/kg wet	3.333		98	40-140			
Benzo(a)anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50215 - 3546

Benzo(a)pyrene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Benzo(b)fluoranthene	3.16	0.333	mg/kg wet	3.333		95	40-140			
Benzo(g,h,i)perylene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Benzo(k)fluoranthene	3.17	0.333	mg/kg wet	3.333		95	40-140			
Benzoic Acid	2.50	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.85	0.333	mg/kg wet	3.333		85	40-140			
bis(2-Chloroethoxy)methane	3.10	0.333	mg/kg wet	3.333		93	40-140			
bis(2-Chloroethyl)ether	3.38	0.333	mg/kg wet	3.333		101	40-140			
bis(2-chloroisopropyl)Ether	2.74	0.333	mg/kg wet	3.333		82	40-140			
bis(2-Ethylhexyl)phthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140			
Carbazole	3.22	0.333	mg/kg wet	3.333		97	40-140			
Chrysene	3.04	0.167	mg/kg wet	3.333		91	40-140			
Dibenzo(a,h)Anthracene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Dibenzofuran	2.79	0.333	mg/kg wet	3.333		84	40-140			
Diethylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Dimethylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-butylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	3.05	0.333	mg/kg wet	3.333		92	40-140			
Fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	2.60	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Hexachlorocyclopentadiene	2.67	1.67	mg/kg wet	3.333		80	40-140			
Hexachloroethane	2.77	0.333	mg/kg wet	3.333		83	40-140			
Indeno(1,2,3-cd)Pyrene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.90	0.333	mg/kg wet	3.333		87	40-140			
Naphthalene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.03	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitroso-Di-n-Propylamine	2.95	0.333	mg/kg wet	3.333		88	40-140			
N-nitrosodiphenylamine	2.98	0.333	mg/kg wet	3.333		89	40-140			
Pentachlorophenol	2.90	1.67	mg/kg wet	3.333		87	30-130			
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Phenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
Pyrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.86	1.67	mg/kg wet	3.333		56	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	3.82		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	4.26		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Fluorobiphenyl	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: 2-Fluorophenol	4.48		mg/kg wet	5.000		90	30-130			
Surrogate: Nitrobenzene-d5	3.06		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.56		mg/kg wet	5.000		91	30-130			
Surrogate: p-Terphenyl-d14	2.81		mg/kg wet	3.333		84	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50215 - 3546

LCS Dup

1,1-Biphenyl	2.50	0.333	mg/kg wet	3.333		75	40-140	14	30	
1,2,4-Trichlorobenzene	2.32	0.333	mg/kg wet	3.333		70	40-140	17	30	
1,2-Dichlorobenzene	2.38	0.333	mg/kg wet	3.333		71	40-140	17	30	
1,3-Dichlorobenzene	2.38	0.333	mg/kg wet	3.333		72	40-140	17	30	
1,4-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	17	30	
2,3,4,6-Tetrachlorophenol	2.35	1.67	mg/kg wet	3.333		70	30-130	2	30	
2,4,5-Trichlorophenol	2.84	0.333	mg/kg wet	3.333		85	30-130	6	30	
2,4,6-Trichlorophenol	2.83	0.333	mg/kg wet	3.333		85	30-130	10	30	
2,4-Dichlorophenol	2.49	0.333	mg/kg wet	3.333		75	30-130	15	30	
2,4-Dimethylphenol	2.71	0.333	mg/kg wet	3.333		81	30-130	16	30	
2,4-Dinitrophenol	2.67	1.67	mg/kg wet	3.333		80	30-130	0.5	30	
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140	1	30	
2,6-Dinitrotoluene	2.80	0.333	mg/kg wet	3.333		84	40-140	4	30	
2-Chloronaphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	13	30	
2-Chlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130	15	30	
2-Methylnaphthalene	2.29	0.333	mg/kg wet	3.333		69	40-140	16	30	
2-Methylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130	16	30	
2-Nitroaniline	2.65	0.333	mg/kg wet	3.333		80	40-140	5	30	
2-Nitrophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	17	30	
3,3'-Dichlorobenzidine	2.54	0.667	mg/kg wet	3.333		76	40-140	2	30	
3+4-Methylphenol	5.11	0.667	mg/kg wet	6.667		77	30-130	15	30	
3-Nitroaniline	3.25	0.333	mg/kg wet	3.333		98	40-140	0.8	30	
4,6-Dinitro-2-Methylphenol	2.82	1.67	mg/kg wet	3.333		85	30-130	0.3	30	
4-Bromophenyl-phenylether	2.78	0.333	mg/kg wet	3.333		83	40-140	4	30	
4-Chloro-3-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130	9	30	
4-Chloroaniline	2.35	0.667	mg/kg wet	3.333		70	40-140	11	30	
4-Chloro-phenyl-phenyl ether	2.63	0.333	mg/kg wet	3.333		79	40-140	8	30	
4-Nitroaniline	3.57	0.333	mg/kg wet	3.333		107	40-140	1	30	
4-Nitrophenol	3.31	1.67	mg/kg wet	3.333		99	30-130	1	30	
Acenaphthene	2.63	0.333	mg/kg wet	3.333		79	40-140	11	30	
Acenaphthylene	2.56	0.333	mg/kg wet	3.333		77	40-140	11	30	
Acetophenone	2.58	0.667	mg/kg wet	3.333		78	40-140	16	30	
Aniline	2.18	0.667	mg/kg wet	3.333		65	40-140	17	30	
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	2	30	
Azobenzene	3.07	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzo(a)anthracene	3.04	0.333	mg/kg wet	3.333		91	40-140	0.4	30	
Benzo(a)pyrene	3.19	0.167	mg/kg wet	3.333		96	40-140	2	30	
Benzo(b)fluoranthene	3.20	0.333	mg/kg wet	3.333		96	40-140	1	30	
Benzo(g,h,i)perylene	3.06	0.333	mg/kg wet	3.333		92	40-140	1	30	
Benzo(k)fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Benzoic Acid	2.39	1.67	mg/kg wet	3.333		72	40-140	4	30	
Benzyl Alcohol	2.27	0.333	mg/kg wet	3.333		68	40-140	23	30	
bis(2-Chloroethoxy)methane	2.60	0.333	mg/kg wet	3.333		78	40-140	17	30	
bis(2-Chloroethyl)ether	2.86	0.333	mg/kg wet	3.333		86	40-140	17	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

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 CJ50215 - 3546

bis(2-chloroisopropyl)Ether	2.30	0.333	mg/kg wet	3.333		69	40-140	18	30	
bis(2-Ethylhexyl)phthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Butylbenzylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	0.8	30	
Carbazole	3.28	0.333	mg/kg wet	3.333		98	40-140	2	30	
Chrysene	3.03	0.167	mg/kg wet	3.333		91	40-140	0.3	30	
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		94	40-140	0.5	30	
Dibenzofuran	2.55	0.333	mg/kg wet	3.333		77	40-140	9	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	2	30	
Dimethylphthalate	2.78	0.333	mg/kg wet	3.333		84	40-140	5	30	
Di-n-butylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	0.2	30	
Di-n-octylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	0.3	30	
Fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.7	30	
Fluorene	2.76	0.333	mg/kg wet	3.333		83	40-140	6	30	
Hexachlorobenzene	2.59	0.167	mg/kg wet	3.333		78	40-140	0.1	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	18	30	
Hexachlorocyclopentadiene	2.22	1.67	mg/kg wet	3.333		67	40-140	18	30	
Hexachloroethane	2.36	0.333	mg/kg wet	3.333		71	40-140	16	30	
Indeno(1,2,3-cd)Pyrene	3.12	0.333	mg/kg wet	3.333		94	40-140	1	30	
Isophorone	2.49	0.333	mg/kg wet	3.333		75	40-140	15	30	
Naphthalene	2.39	0.333	mg/kg wet	3.333		72	40-140	17	30	
Nitrobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140	16	30	
N-Nitrosodimethylamine	1.89	0.333	mg/kg wet	3.333		57	40-140	18	30	
N-Nitroso-Di-n-Propylamine	2.50	0.333	mg/kg wet	3.333		75	40-140	16	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pentachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	0.5	30	
Phenanthrene	2.92	0.333	mg/kg wet	3.333		88	40-140	0.8	30	
Phenol	2.48	0.333	mg/kg wet	3.333		74	30-130	15	30	
Pyrene	3.00	0.333	mg/kg wet	3.333		90	40-140	0.2	30	
Pyridine	1.55	1.67	mg/kg wet	3.333		46	40-140	18	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.23		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.64		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.33		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorophenol	3.70		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: Phenol-d6	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: p-Terphenyl-d14	2.76		mg/kg wet	3.333		83	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510048

Notes and Definitions

- Z-10 Soil pH measured in water at 19.3 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- B+ Blank Spike recovery is above upper control limit (B+).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510048

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: 15100048
 Date Project Due: 10/7/15
 Days For Project: 3 Day

Items to be checked upon receipt:

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

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

cc Frozen 15:00

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 14:33
 Reviewed By: [Signature] Date/Time: 10/2/15 14:50



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: 1510049

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 1:54 pm, Oct 07, 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: 1510049

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 15:00.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510049-01	Lopes Raynham 20% Org 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: 1510049

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ50520-BS1 Blank Spike recovery is above upper control limit (B+).
Acetone (146% @ 70-130%), Vinyl Acetate (158% @ 70-130%)

CJ50520-BSD1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (166% @ 70-130%)

8270D Semi-Volatile Organic Compounds

CYJ0033-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (112% @ 80-120%), Benzoic Acid (114% @ 80-120%)

CYJ0033-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
2-Nitroaniline (22% @ 20%), bis(2-Chloroethyl)ether (29% @ 20%), Phenol-d6 (21% @ 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

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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510049

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.55 (2.87)		6010C		1	KJK	10/03/15 13:45	2.25	100	CJ50237
Barium	24.0 (2.87)		6010C		1	KJK	10/03/15 13:45	2.25	100	CJ50237
Cadmium	ND (0.57)		6010C		1	KJK	10/03/15 13:45	2.25	100	CJ50237
Chromium	7.13 (1.15)		6010C		1	KJK	10/03/15 13:45	2.25	100	CJ50237
Lead	27.3 (5.73)		6010C		1	KJK	10/03/15 13:45	2.25	100	CJ50237
Mercury	0.040 (0.038)		7471B		1	PJP	10/06/15 13:02	0.67	40	CJ50205
Selenium	ND (11.5)		6010C		2	KJK	10/03/15 14:43	2.25	100	CJ50237
Silver	ND (0.57)		6010C		1	KJK	10/03/15 13:45	2.25	100	CJ50237



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 7.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
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 (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,1,1-Trichloroethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,1,2,2-Tetrachloroethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,1,2-Trichloroethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,1-Dichloroethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,1-Dichloroethene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,1-Dichloropropene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2,3-Trichlorobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2,3-Trichloropropane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2,4-Trichlorobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2,4-Trimethylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2-Dibromo-3-Chloropropane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2-Dibromoethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2-Dichlorobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2-Dichloroethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,2-Dichloropropane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,3,5-Trimethylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,3-Dichlorobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,3-Dichloropropane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,4-Dichlorobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1,4-Dioxane	ND (0.0816)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
1-Chlorohexane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
2,2-Dichloropropane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
2-Butanone	ND (0.0408)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
2-Chlorotoluene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
2-Hexanone	ND (0.0408)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
4-Chlorotoluene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
4-Isopropyltoluene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
4-Methyl-2-Pentanone	ND (0.0408)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Acetone	ND (0.0408)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Benzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Bromobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 7.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
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 (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Bromodichloromethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Bromoform	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Bromomethane	ND (0.0082)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Carbon Disulfide	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Carbon Tetrachloride	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Chlorobenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Chloroethane	ND (0.0082)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Chloroform	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Chloromethane	ND (0.0082)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
cis-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
cis-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Dibromochloromethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Dibromomethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Dichlorodifluoromethane	ND (0.0082)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Diethyl Ether	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Di-isopropyl ether	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Ethyl tertiary-butyl ether	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Ethylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Hexachlorobutadiene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Isopropylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Methyl tert-Butyl Ether	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Methylene Chloride	ND (0.0204)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Naphthalene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
n-Butylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
n-Propylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
sec-Butylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Styrene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
tert-Butylbenzene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Tertiary-amyl methyl ether	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Tetrachloroethene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Tetrahydrofuran	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 7.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
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 (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
trans-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
trans-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Trichloroethene	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Trichlorofluoromethane	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Vinyl Acetate	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Vinyl Chloride	ND (0.0082)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Xylene O	ND (0.0041)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Xylene P,M	ND (0.0082)		8260B Low		1	10/04/15 14:00	CYJ0046	CJ50520
Xylenes (Total)	ND (0.0082)		8260B Low		1	10/04/15 14:00		[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>80 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>96 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/2/15 16:14

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	65.8 (49.4)		8100M		1	10/03/15 3:11	CYJ0035	CJ50214
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>96 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/2/15 15:44

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 (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
1,2,4-Trichlorobenzene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
1,2-Dichlorobenzene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
1,3-Dichlorobenzene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
1,4-Dichlorobenzene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,3,4,6-Tetrachlorophenol	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,4,5-Trichlorophenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,4,6-Trichlorophenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,4-Dichlorophenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,4-Dimethylphenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,4-Dinitrophenol	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,4-Dinitrotoluene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2,6-Dinitrotoluene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2-Chloronaphthalene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2-Chlorophenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2-Methylnaphthalene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2-Methylphenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2-Nitroaniline	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
2-Nitrophenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
3,3'-Dichlorobenzidine	ND (0.903)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
3+4-Methylphenol	ND (0.903)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
3-Nitroaniline	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4,6-Dinitro-2-Methylphenol	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4-Bromophenyl-phenylether	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4-Chloro-3-Methylphenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4-Chloroaniline	ND (0.903)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4-Chloro-phenyl-phenyl ether	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4-Nitroaniline	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
4-Nitrophenol	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Acenaphthene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Acenaphthylene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Acetophenone	ND (0.903)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/2/15 15:44

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 (0.903)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Anthracene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Azobenzene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzo(a)anthracene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzo(a)pyrene	ND (0.226)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzo(b)fluoranthene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzo(g,h,i)perylene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzo(k)fluoranthene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzoic Acid	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Benzyl Alcohol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
bis(2-Chloroethoxy)methane	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
bis(2-Chloroethyl)ether	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
bis(2-chloroisopropyl)Ether	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
bis(2-Ethylhexyl)phthalate	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Butylbenzylphthalate	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Carbazole	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Chrysene	ND (0.226)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Dibenzo(a,h)Anthracene	ND (0.226)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Dibenzofuran	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Diethylphthalate	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Dimethylphthalate	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Di-n-butylphthalate	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Di-n-octylphthalate	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Fluoranthene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Fluorene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Hexachlorobenzene	ND (0.226)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Hexachlorobutadiene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Hexachlorocyclopentadiene	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Hexachloroethane	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Indeno(1,2,3-cd)Pyrene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Isophorone	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Naphthalene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/2/15 15:44

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 (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
N-Nitrosodimethylamine	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
N-Nitroso-Di-n-Propylamine	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
N-nitrosodiphenylamine	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Pentachlorophenol	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Phenanthrene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Phenol	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Pyrene	ND (0.451)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215
Pyridine	ND (2.26)		8270D		1	10/03/15 0:13	CYJ0033	CJ50215

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	59 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	69 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	65 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	62 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	66 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	67 %		30-130
<i>Surrogate: Phenol-d6</i>	70 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	67 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes Raynham 20% Org 1
Date Sampled: 10/02/15 11:20
Percent Solids: 78

ESS Laboratory Work Order: 1510049
ESS Laboratory Sample ID: 1510049-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.53 (N/A)		9045		1	JLK	10/02/15 15:13	S.U.	CJ50239
Corrosivity (pH) Sample Temp	Soil pH measured in water at 19.4 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

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 CJ50205 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet							
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LCS

Mercury	25.2	3.88	mg/kg wet	24.90		101	80-120			
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LCS Dup

Mercury	26.4	3.96	mg/kg wet	24.90		106	80-120	5	20	
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Batch CJ50237 - 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	127	10.0	mg/kg wet	133.0		95	80-120			
Barium	256	10.0	mg/kg wet	229.0		112	80-120			
Cadmium	105	2.00	mg/kg wet	123.0		86	80-120			
Chromium	58.2	4.00	mg/kg wet	63.20		92	80-120			
Lead	99.3	20.0	mg/kg wet	108.0		92	80-120			
Selenium	64.8	20.0	mg/kg wet	81.40		80	64-136			
Silver	72.5	2.00	mg/kg wet	74.80		97	80-120			

LCS Dup

Arsenic	126	10.0	mg/kg wet	133.0		95	80-120	0.6	20	
Barium	220	10.0	mg/kg wet	229.0		96	80-120	15	20	
Cadmium	105	2.00	mg/kg wet	123.0		86	80-120	0.02	20	
Chromium	58.3	4.00	mg/kg wet	63.20		92	80-120	0.2	20	
Lead	102	20.0	mg/kg wet	108.0		94	80-120	2	20	
Selenium	64.3	20.0	mg/kg wet	81.40		79	64-136	0.8	20	
Silver	73.3	2.00	mg/kg wet	74.80		98	80-120	1	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50520 - 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: 1510049

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 CJ50520 - 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: 1510049

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 CJ50520 - 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	0.0530		mg/kg wet	0.05000		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0415		mg/kg wet	0.05000		83	70-130			
Surrogate: Dibromofluoromethane	0.0427		mg/kg wet	0.05000		85	70-130			
Surrogate: Toluene-d8	0.0455		mg/kg wet	0.05000		91	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,1,1-Trichloroethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,2,2-Tetrachloroethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,1,2-Trichloroethane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,1-Dichloroethene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,3-Trichloropropane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2,4-Trichlorobenzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,4-Trimethylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dibromo-3-Chloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromoethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,3,5-Trimethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,3-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

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 CJ50520 - 5035

1,4-Dichlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,4-Dioxane	0.972	0.100	mg/kg wet	1.000		97	70-130			
1-Chlorohexane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
2-Butanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130			
2-Chlorotoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.282	0.0500	mg/kg wet	0.2500		113	70-130			
4-Chlorotoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
4-Methyl-2-Pentanone	0.257	0.0500	mg/kg wet	0.2500		103	70-130			
Acetone	0.365	0.0500	mg/kg wet	0.2500		146	70-130			B+
Benzene	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Bromobenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Bromochloromethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromodichloromethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0415	0.0050	mg/kg wet	0.05000		83	70-130			
Bromomethane	0.0498	0.0100	mg/kg wet	0.05000		100	70-130			
Carbon Disulfide	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
Carbon Tetrachloride	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Chloroethane	0.0504	0.0100	mg/kg wet	0.05000		101	70-130			
Chloroform	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Chloromethane	0.0550	0.0100	mg/kg wet	0.05000		110	70-130			
cis-1,2-Dichloroethene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
cis-1,3-Dichloropropene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Dibromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Dibromomethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Dichlorodifluoromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130			
Diethyl Ether	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Di-isopropyl ether	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Ethyl tertiary-butyl ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Ethylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Isopropylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Methylene Chloride	0.0567	0.0250	mg/kg wet	0.05000		113	70-130			
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
tert-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Tetrachloroethene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrahydrofuran	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

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 CJ50520 - 5035

Toluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
trans-1,2-Dichloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Trichloroethene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Trichlorofluoromethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Vinyl Acetate	0.0791	0.0050	mg/kg wet	0.05000		158	70-130			B+
Vinyl Chloride	0.0560	0.0100	mg/kg wet	0.05000		112	70-130			
Xylene O	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Xylene P,M	0.0940	0.0100	mg/kg wet	0.1000		94	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0597		mg/kg wet	0.05000		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,1,1-Trichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	12	25	
1,1,2-Trichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	3	25	
1,1-Dichloroethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
1,1-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
1,1-Dichloropropene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
1,2,3-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	14	25	
1,2,4-Trichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,2,4-Trimethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
1,2-Dibromoethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	10	25	
1,2-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.7	25	
1,2-Dichloroethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	0.4	25	
1,2-Dichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
1,3,5-Trimethylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
1,3-Dichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,3-Dichloropropane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	10	25	
1,4-Dichlorobenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
1,4-Dioxane	1.07	0.100	mg/kg wet	1.000		107	70-130	9	20	
1-Chlorohexane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
2,2-Dichloropropane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	0.7	25	
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130	4	25	
2-Chlorotoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
2-Hexanone	0.290	0.0500	mg/kg wet	0.2500		116	70-130	3	25	
4-Chlorotoluene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	6	25	
4-Methyl-2-Pentanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130	13	25	
Acetone	0.292	0.0500	mg/kg wet	0.2500		117	70-130	22	25	



CERTIFICATE OF ANALYSIS

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

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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 CJ50520 - 5035

Benzene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	0.9	25	
Bromobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Bromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	5	25	
Bromodichloromethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	0.9	25	
Bromoform	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	12	25	
Bromomethane	0.0494	0.0100	mg/kg wet	0.05000		99	70-130	0.9	25	
Carbon Disulfide	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	0.04	25	
Carbon Tetrachloride	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
Chlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
Chloroethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130	4	25	
Chloroform	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	0.9	25	
Chloromethane	0.0507	0.0100	mg/kg wet	0.05000		101	70-130	8	25	
cis-1,2-Dichloroethene	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	1	25	
cis-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.7	25	
Dibromochloromethane	0.0617	0.0050	mg/kg wet	0.05000		123	70-130	15	25	
Dibromomethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Dichlorodifluoromethane	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	2	25	
Diethyl Ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Di-isopropyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Ethyl tertiary-butyl ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Ethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Hexachlorobutadiene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Methyl tert-Butyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
Methylene Chloride	0.0587	0.0250	mg/kg wet	0.05000		117	70-130	3	25	
Naphthalene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	11	25	
n-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
n-Propylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
sec-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Styrene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
tert-Butylbenzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Tertiary-amyl methyl ether	0.0549	0.0050	mg/kg wet	0.05000		110	70-130	6	25	
Tetrachloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
Tetrahydrofuran	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
Toluene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	0.2	25	
trans-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
trans-1,3-Dichloropropene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.8	25	
Trichlorofluoromethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	4	25	
Vinyl Acetate	0.0830	0.0050	mg/kg wet	0.05000		166	70-130	5	25	B+
Vinyl Chloride	0.0544	0.0100	mg/kg wet	0.05000		109	70-130	3	25	
Xylene O	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
Xylene P,M	0.0989	0.0100	mg/kg wet	0.1000		99	70-130	5	25	
Xylenes (Total)	0.147	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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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50520 - 5035

Surrogate: 4-Bromofluorobenzene	0.0480		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0484		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0506		mg/kg wet	0.05000		101	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 CJ50215 - 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 CJ50215 - 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 CJ50215 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.54		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	3.47		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Chlorophenol-d4	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	4.28		mg/kg wet	5.000		86	30-130			
Surrogate: Nitrobenzene-d5	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.45		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	2.87		mg/kg wet	3.333		86	30-130			

LCS

1,1-Biphenyl	2.86	0.333	mg/kg wet	3.333		86	40-140			
1,2,4-Trichlorobenzene	2.75	0.333	mg/kg wet	3.333		82	40-140			
1,2-Dichlorobenzene	2.81	0.333	mg/kg wet	3.333		84	40-140			
1,3-Dichlorobenzene	2.82	0.333	mg/kg wet	3.333		85	40-140			
1,4-Dichlorobenzene	2.75	0.333	mg/kg wet	3.333		83	40-140			
2,3,4,6-Tetrachlorophenol	2.39	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	3.02	0.333	mg/kg wet	3.333		91	30-130			
2,4,6-Trichlorophenol	3.12	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	3.17	0.333	mg/kg wet	3.333		95	30-130			
2,4-Dinitrophenol	2.66	1.67	mg/kg wet	3.333		80	30-130			
2,4-Dinitrotoluene	3.24	0.333	mg/kg wet	3.333		97	40-140			
2,6-Dinitrotoluene	2.92	0.333	mg/kg wet	3.333		88	40-140			
2-Chloronaphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Chlorophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
2-Methylnaphthalene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Methylphenol	2.95	0.333	mg/kg wet	3.333		88	30-130			
2-Nitroaniline	2.79	0.333	mg/kg wet	3.333		84	40-140			
2-Nitrophenol	3.16	0.333	mg/kg wet	3.333		95	30-130			
3,3'-Dichlorobenzidine	2.48	0.667	mg/kg wet	3.333		75	40-140			
3+4-Methylphenol	5.94	0.667	mg/kg wet	6.667		89	30-130			
3-Nitroaniline	3.28	0.333	mg/kg wet	3.333		98	40-140			
4,6-Dinitro-2-Methylphenol	2.83	1.67	mg/kg wet	3.333		85	30-130			
4-Bromophenyl-phenylether	2.88	0.333	mg/kg wet	3.333		86	40-140			
4-Chloro-3-Methylphenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
4-Chloroaniline	2.63	0.667	mg/kg wet	3.333		79	40-140			
4-Chloro-phenyl-phenyl ether	2.85	0.333	mg/kg wet	3.333		86	40-140			
4-Nitroaniline	3.53	0.333	mg/kg wet	3.333		106	40-140			
4-Nitrophenol	3.27	1.67	mg/kg wet	3.333		98	30-130			
Acenaphthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Acenaphthylene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Acetophenone	3.04	0.667	mg/kg wet	3.333		91	40-140			
Aniline	2.58	0.667	mg/kg wet	3.333		77	40-140			
Anthracene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.25	0.333	mg/kg wet	3.333		98	40-140			
Benzo(a)anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ50215 - 3546

Benzo(a)pyrene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Benzo(b)fluoranthene	3.16	0.333	mg/kg wet	3.333		95	40-140			
Benzo(g,h,i)perylene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Benzo(k)fluoranthene	3.17	0.333	mg/kg wet	3.333		95	40-140			
Benzoic Acid	2.50	1.67	mg/kg wet	3.333		75	40-140			
Benzyl Alcohol	2.85	0.333	mg/kg wet	3.333		85	40-140			
bis(2-Chloroethoxy)methane	3.10	0.333	mg/kg wet	3.333		93	40-140			
bis(2-Chloroethyl)ether	3.38	0.333	mg/kg wet	3.333		101	40-140			
bis(2-chloroisopropyl)Ether	2.74	0.333	mg/kg wet	3.333		82	40-140			
bis(2-Ethylhexyl)phthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140			
Carbazole	3.22	0.333	mg/kg wet	3.333		97	40-140			
Chrysene	3.04	0.167	mg/kg wet	3.333		91	40-140			
Dibenzo(a,h)Anthracene	3.13	0.167	mg/kg wet	3.333		94	40-140			
Dibenzofuran	2.79	0.333	mg/kg wet	3.333		84	40-140			
Diethylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Dimethylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140			
Di-n-butylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	3.05	0.333	mg/kg wet	3.333		92	40-140			
Fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Hexachlorobenzene	2.60	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Hexachlorocyclopentadiene	2.67	1.67	mg/kg wet	3.333		80	40-140			
Hexachloroethane	2.77	0.333	mg/kg wet	3.333		83	40-140			
Indeno(1,2,3-cd)Pyrene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Isophorone	2.90	0.333	mg/kg wet	3.333		87	40-140			
Naphthalene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Nitrobenzene	3.03	0.333	mg/kg wet	3.333		91	40-140			
N-Nitrosodimethylamine	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-Nitroso-Di-n-Propylamine	2.95	0.333	mg/kg wet	3.333		88	40-140			
N-nitrosodiphenylamine	2.98	0.333	mg/kg wet	3.333		89	40-140			
Pentachlorophenol	2.90	1.67	mg/kg wet	3.333		87	30-130			
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Phenol	2.87	0.333	mg/kg wet	3.333		86	30-130			
Pyrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.86	1.67	mg/kg wet	3.333		56	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	3.82		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	4.26		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Fluorobiphenyl	2.76		mg/kg wet	3.333		83	30-130			
Surrogate: 2-Fluorophenol	4.48		mg/kg wet	5.000		90	30-130			
Surrogate: Nitrobenzene-d5	3.06		mg/kg wet	3.333		92	30-130			
Surrogate: Phenol-d6	4.56		mg/kg wet	5.000		91	30-130			
Surrogate: p-Terphenyl-d14	2.81		mg/kg wet	3.333		84	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

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 CJ50215 - 3546

LCS Dup

1,1-Biphenyl	2.50	0.333	mg/kg wet	3.333		75	40-140	14	30	
1,2,4-Trichlorobenzene	2.32	0.333	mg/kg wet	3.333		70	40-140	17	30	
1,2-Dichlorobenzene	2.38	0.333	mg/kg wet	3.333		71	40-140	17	30	
1,3-Dichlorobenzene	2.38	0.333	mg/kg wet	3.333		72	40-140	17	30	
1,4-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	17	30	
2,3,4,6-Tetrachlorophenol	2.35	1.67	mg/kg wet	3.333		70	30-130	2	30	
2,4,5-Trichlorophenol	2.84	0.333	mg/kg wet	3.333		85	30-130	6	30	
2,4,6-Trichlorophenol	2.83	0.333	mg/kg wet	3.333		85	30-130	10	30	
2,4-Dichlorophenol	2.49	0.333	mg/kg wet	3.333		75	30-130	15	30	
2,4-Dimethylphenol	2.71	0.333	mg/kg wet	3.333		81	30-130	16	30	
2,4-Dinitrophenol	2.67	1.67	mg/kg wet	3.333		80	30-130	0.5	30	
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140	1	30	
2,6-Dinitrotoluene	2.80	0.333	mg/kg wet	3.333		84	40-140	4	30	
2-Chloronaphthalene	2.34	0.333	mg/kg wet	3.333		70	40-140	13	30	
2-Chlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130	15	30	
2-Methylnaphthalene	2.29	0.333	mg/kg wet	3.333		69	40-140	16	30	
2-Methylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130	16	30	
2-Nitroaniline	2.65	0.333	mg/kg wet	3.333		80	40-140	5	30	
2-Nitrophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	17	30	
3,3'-Dichlorobenzidine	2.54	0.667	mg/kg wet	3.333		76	40-140	2	30	
3+4-Methylphenol	5.11	0.667	mg/kg wet	6.667		77	30-130	15	30	
3-Nitroaniline	3.25	0.333	mg/kg wet	3.333		98	40-140	0.8	30	
4,6-Dinitro-2-Methylphenol	2.82	1.67	mg/kg wet	3.333		85	30-130	0.3	30	
4-Bromophenyl-phenylether	2.78	0.333	mg/kg wet	3.333		83	40-140	4	30	
4-Chloro-3-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130	9	30	
4-Chloroaniline	2.35	0.667	mg/kg wet	3.333		70	40-140	11	30	
4-Chloro-phenyl-phenyl ether	2.63	0.333	mg/kg wet	3.333		79	40-140	8	30	
4-Nitroaniline	3.57	0.333	mg/kg wet	3.333		107	40-140	1	30	
4-Nitrophenol	3.31	1.67	mg/kg wet	3.333		99	30-130	1	30	
Acenaphthene	2.63	0.333	mg/kg wet	3.333		79	40-140	11	30	
Acenaphthylene	2.56	0.333	mg/kg wet	3.333		77	40-140	11	30	
Acetophenone	2.58	0.667	mg/kg wet	3.333		78	40-140	16	30	
Aniline	2.18	0.667	mg/kg wet	3.333		65	40-140	17	30	
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	2	30	
Azobenzene	3.07	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzo(a)anthracene	3.04	0.333	mg/kg wet	3.333		91	40-140	0.4	30	
Benzo(a)pyrene	3.19	0.167	mg/kg wet	3.333		96	40-140	2	30	
Benzo(b)fluoranthene	3.20	0.333	mg/kg wet	3.333		96	40-140	1	30	
Benzo(g,h,i)perylene	3.06	0.333	mg/kg wet	3.333		92	40-140	1	30	
Benzo(k)fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Benzoic Acid	2.39	1.67	mg/kg wet	3.333		72	40-140	4	30	
Benzyl Alcohol	2.27	0.333	mg/kg wet	3.333		68	40-140	23	30	
bis(2-Chloroethoxy)methane	2.60	0.333	mg/kg wet	3.333		78	40-140	17	30	
bis(2-Chloroethyl)ether	2.86	0.333	mg/kg wet	3.333		86	40-140	17	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

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 CJ50215 - 3546

bis(2-chloroisopropyl)Ether	2.30	0.333	mg/kg wet	3.333		69	40-140	18	30	
bis(2-Ethylhexyl)phthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Butylbenzylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	0.8	30	
Carbazole	3.28	0.333	mg/kg wet	3.333		98	40-140	2	30	
Chrysene	3.03	0.167	mg/kg wet	3.333		91	40-140	0.3	30	
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		94	40-140	0.5	30	
Dibenzofuran	2.55	0.333	mg/kg wet	3.333		77	40-140	9	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	2	30	
Dimethylphthalate	2.78	0.333	mg/kg wet	3.333		84	40-140	5	30	
Di-n-butylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	0.2	30	
Di-n-octylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140	0.3	30	
Fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140	0.7	30	
Fluorene	2.76	0.333	mg/kg wet	3.333		83	40-140	6	30	
Hexachlorobenzene	2.59	0.167	mg/kg wet	3.333		78	40-140	0.1	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	18	30	
Hexachlorocyclopentadiene	2.22	1.67	mg/kg wet	3.333		67	40-140	18	30	
Hexachloroethane	2.36	0.333	mg/kg wet	3.333		71	40-140	16	30	
Indeno(1,2,3-cd)Pyrene	3.12	0.333	mg/kg wet	3.333		94	40-140	1	30	
Isophorone	2.49	0.333	mg/kg wet	3.333		75	40-140	15	30	
Naphthalene	2.39	0.333	mg/kg wet	3.333		72	40-140	17	30	
Nitrobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140	16	30	
N-Nitrosodimethylamine	1.89	0.333	mg/kg wet	3.333		57	40-140	18	30	
N-Nitroso-Di-n-Propylamine	2.50	0.333	mg/kg wet	3.333		75	40-140	16	30	
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pentachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	0.5	30	
Phenanthrene	2.92	0.333	mg/kg wet	3.333		88	40-140	0.8	30	
Phenol	2.48	0.333	mg/kg wet	3.333		74	30-130	15	30	
Pyrene	3.00	0.333	mg/kg wet	3.333		90	40-140	0.2	30	
Pyridine	1.55	1.67	mg/kg wet	3.333		46	40-140	18	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.23		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.64		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Chlorophenol-d4	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.33		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorophenol	3.70		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: Phenol-d6	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: p-Terphenyl-d14	2.76		mg/kg wet	3.333		83	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

Notes and Definitions

- Z-10 Soil pH measured in water at 19.4 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- B+ Blank Spike recovery is above upper control limit (B+).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510049

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: 15100049
 Date Project Due: 10/7/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| Cooler Temp: <u>2.0</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 WLC From 15100

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 14:39
 Date/Time: 10/2/15 14:10



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: 1510138

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

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 3:46 pm, Oct 13, 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: 1510138

SAMPLE RECEIPT

The following samples were received on October 06, 2015 for the analyses specified on the enclosed Chain of Custody Record.

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

Low Level VOA vials were frozen by ESS Laboratory on October 6, 2015 at 14:55.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510138-01	Lopes-Raynham 20% Org 14	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: 1510138

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510138-01 [Surrogate recovery\(ies\) above upper control limit \(S+\).](#)
1,2-Dichloroethane-d4 (137% @ 70-130%)
- CJ50825-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)
Methylene Chloride (133% @ 70-130%), Vinyl Acetate (175% @ 70-130%)
- CJ50825-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)
Vinyl Acetate (169% @ 70-130%)

8270D Semi-Volatile Organic Compounds

- CJ50615-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)
Pyridine (39% @ 40-140%)
- 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

- CJ50547-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)
Lead (67% @ 69-131%)
- CJ50547-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)
Arsenic (23% @ 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: 1510138

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.78 (2.42)		6010C		1	KJK	10/07/15 5:31	2.16	100	CJ50547
Barium	16.4 (2.42)		6010C		1	KJK	10/07/15 5:31	2.16	100	CJ50547
Cadmium	ND (0.48)		6010C		1	KJK	10/07/15 5:31	2.16	100	CJ50547
Chromium	8.24 (0.97)		6010C		1	KJK	10/07/15 5:31	2.16	100	CJ50547
Lead	23.7 (4.83)		6010C		1	KJK	10/07/15 5:31	2.16	100	CJ50547
Mercury	ND (0.032)		7471B		1	KJK	10/07/15 15:41	0.65	40	CJ50550
Selenium	ND (9.67)		6010C		2	KJK	10/07/15 20:18	2.16	100	CJ50547
Silver	ND (0.48)		6010C		1	KJK	10/07/15 5:31	2.16	100	CJ50547



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
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	10/08/15 14:18	CYJ0102	CJ50825
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,1,2,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1,4-Dioxane	ND (0.0967)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
1-Chlorohexane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
2-Butanone	ND (0.0483)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
2-Chlorotoluene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
2-Hexanone	ND (0.0483)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
4-Chlorotoluene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
4-Methyl-2-Pentanone	ND (0.0483)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Acetone	ND (0.0483)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Benzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Bromobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
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	10/08/15 14:18	CYJ0102	CJ50825
Bromodichloromethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Bromoform	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Bromomethane	ND (0.0097)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Carbon Disulfide	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Chlorobenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Chloroethane	ND (0.0097)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Chloroform	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Chloromethane	ND (0.0097)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Dibromochloromethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Dibromomethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Dichlorodifluoromethane	ND (0.0097)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Diethyl Ether	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Di-isopropyl ether	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Ethylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Isopropylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Methylene Chloride	ND (0.0242)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Naphthalene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
n-Butylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
n-Propylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
sec-Butylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Styrene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
tert-Butylbenzene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Tetrachloroethene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Tetrahydrofuran	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes-Raynham 20% Org 14
 Date Sampled: 10/06/15 14:00
 Percent Solids: 96
 Initial Volume: 5.4
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510138
 ESS Laboratory Sample ID: 1510138-01
 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	10/08/15 14:18	CYJ0102	CJ50825
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Trichloroethene	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Vinyl Acetate	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Vinyl Chloride	ND (0.0097)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Xylene O	ND (0.0048)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Xylene P,M	ND (0.0097)		8260B Low		1	10/08/15 14:18	CYJ0102	CJ50825
Xylenes (Total)	ND (0.0097)		8260B Low		1	10/08/15 14:18		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	137 %	S+	70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	80 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	103 %		70-130
<i>Surrogate: Toluene-d8</i>	91 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 14:11

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	183 (39.7)		8100M		1	10/10/15 7:26	CYJ0132	CJ50614
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>106 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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 (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
1,2,4-Trichlorobenzene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
1,2-Dichlorobenzene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
1,3-Dichlorobenzene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
1,4-Dichlorobenzene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,3,4,6-Tetrachlorophenol	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,4,5-Trichlorophenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,4,6-Trichlorophenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,4-Dichlorophenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,4-Dimethylphenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,4-Dinitrophenol	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,4-Dinitrotoluene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2,6-Dinitrotoluene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2-Chloronaphthalene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2-Chlorophenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2-Methylnaphthalene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2-Methylphenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2-Nitroaniline	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
2-Nitrophenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
3,3'-Dichlorobenzidine	ND (0.711)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
3+4-Methylphenol	ND (0.711)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
3-Nitroaniline	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4,6-Dinitro-2-Methylphenol	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4-Bromophenyl-phenylether	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4-Chloro-3-Methylphenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4-Chloroaniline	ND (0.711)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4-Chloro-phenyl-phenyl ether	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4-Nitroaniline	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
4-Nitrophenol	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Acenaphthene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Acenaphthylene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Acetophenone	ND (0.711)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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 (0.711)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Anthracene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Azobenzene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzo(a)anthracene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzo(a)pyrene	0.181 (0.178)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzo(b)fluoranthene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzo(g,h,i)perylene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzo(k)fluoranthene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzoic Acid	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Benzyl Alcohol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
bis(2-Chloroethoxy)methane	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
bis(2-Chloroethyl)ether	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
bis(2-chloroisopropyl)Ether	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
bis(2-Ethylhexyl)phthalate	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Butylbenzylphthalate	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Carbazole	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Chrysene	0.208 (0.178)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Dibenzo(a,h)Anthracene	ND (0.178)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Dibenzofuran	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Diethylphthalate	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Dimethylphthalate	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Di-n-butylphthalate	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Di-n-octylphthalate	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Fluoranthene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Fluorene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Hexachlorobenzene	ND (0.178)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Hexachlorobutadiene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Hexachlorocyclopentadiene	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Hexachloroethane	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Indeno(1,2,3-cd)Pyrene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Isophorone	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Naphthalene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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 (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
N-Nitrosodimethylamine	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
N-Nitroso-Di-n-Propylamine	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
N-nitrosodiphenylamine	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Pentachlorophenol	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Phenanthrene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Phenol	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Pyrene	ND (0.355)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615
Pyridine	ND (1.78)		8270D		1	10/06/15 23:06	CYJ0076	CJ50615

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>49 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>69 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>59 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>59 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>59 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>57 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>68 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 14
Date Sampled: 10/06/15 14:00
Percent Solids: 96

ESS Laboratory Work Order: 1510138
ESS Laboratory Sample ID: 1510138-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	6.71 (N/A)		9045		1	EEM	10/06/15 17:40	S.U.	CJ50632
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: 1510138

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ50547 - 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	67.0	9.43	mg/kg wet	52.30		128	43-169			
Barium	140	9.43	mg/kg wet	145.0		97	80-120			
Cadmium	54.7	1.89	mg/kg wet	71.60		76	62-138			
Chromium	79.4	3.77	mg/kg wet	88.50		90	80-120			
Lead	54.2	18.9	mg/kg wet	77.80		70	69-131			
Selenium	77.5	18.9	mg/kg wet	81.10		96	80-120			
Silver	115	1.89	mg/kg wet	114.0		101	80-120			
LCS Dup										
Arsenic	53.3	9.80	mg/kg wet	52.30		102	43-169	23	20	D+
Barium	136	9.80	mg/kg wet	145.0		94	80-120	3	20	
Cadmium	52.0	1.96	mg/kg wet	71.60		73	62-138	5	20	
Chromium	75.4	3.92	mg/kg wet	88.50		85	80-120	5	20	
Lead	51.8	19.6	mg/kg wet	77.80		67	69-131	4	20	B-
Selenium	77.6	19.6	mg/kg wet	81.10		96	80-120	0.2	20	
Silver	111	1.96	mg/kg wet	114.0		97	80-120	4	20	
Reference										
Arsenic	50.2	9.43	mg/kg wet	52.30		96	43-169			
Barium	138	9.43	mg/kg wet	145.0		95	69-131			
Cadmium	51.3	1.89	mg/kg wet	71.60		72	62-138			
Chromium	74.6	3.77	mg/kg wet	88.50		84	67-133			
Lead	51.1	18.9	mg/kg wet	77.80		66	69-131			
Selenium	74.9	18.9	mg/kg wet	81.10		92	64-137			
Silver	113	1.89	mg/kg wet	114.0		99	68-132			
Reference										
Arsenic	47.0	9.26	mg/kg wet	52.30		90	43-169			
Barium	181	9.26	mg/kg wet	145.0		125	69-131			
Cadmium	52.1	1.85	mg/kg wet	71.60		73	62-138			
Chromium	77.9	3.70	mg/kg wet	88.50		88	67-133			
Lead	52.4	18.5	mg/kg wet	77.80		67	69-131			
Selenium	85.2	18.5	mg/kg wet	81.10		105	64-137			
Silver	135	1.85	mg/kg wet	114.0		119	68-132			
Reference										
Arsenic	46.5	10.0	mg/kg wet	52.30		89	43-169			
Barium	143	10.0	mg/kg wet	145.0		99	69-131			
Cadmium	56.1	2.00	mg/kg wet	71.60		78	62-138			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50547 - 3050B

Chromium	80.4	4.00	mg/kg wet	88.50		91	67-133			
Lead	56.0	20.0	mg/kg wet	77.80		72	69-131			
Selenium	79.0	20.0	mg/kg wet	81.10		97	64-137			
Silver	120	2.00	mg/kg wet	114.0		106	68-132			

Reference

Arsenic	80.0	9.43	mg/kg wet	52.30		153	43-169			
Barium	148	9.43	mg/kg wet	145.0		102	69-131			
Cadmium	52.8	1.89	mg/kg wet	71.60		74	62-138			
Chromium	78.0	3.77	mg/kg wet	88.50		88	67-133			
Lead	52.5	18.9	mg/kg wet	77.80		67	69-131			
Selenium	77.4	18.9	mg/kg wet	81.10		95	64-137			
Silver	119	1.89	mg/kg wet	114.0		104	68-132			

Batch CJ50550 - 7471A

Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	9.24	3.41	mg/kg wet	9.700		95	80-120			
LCS Dup										
Mercury	9.69	3.67	mg/kg wet	9.700		100	80-120	5	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50825 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50825 - 5035

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							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50825 - 5035

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	0.0631		mg/kg wet	0.05000		126	70-130			
Surrogate: 4-Bromofluorobenzene	0.0410		mg/kg wet	0.05000		82	70-130			
Surrogate: Dibromofluoromethane	0.0500		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0455		mg/kg wet	0.05000		91	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2,2-Tetrachloroethane	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,1,2-Trichloroethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130			
1,1-Dichloroethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130			
1,1-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloropropene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,2,3-Trichlorobenzene	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
1,2,3-Trichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,4-Trichlorobenzene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
1,2,4-Trimethylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromoethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0592	0.0050	mg/kg wet	0.05000		118	70-130			
1,2-Dichloropropane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,3,5-Trimethylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichlorobenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,4-Dioxane	0.962	0.100	mg/kg wet	1.000		96	70-130			
1-Chlorohexane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0587	0.0050	mg/kg wet	0.05000		117	70-130			
2-Butanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130			
2-Chlorotoluene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
2-Hexanone	0.284	0.0500	mg/kg wet	0.2500		114	70-130			
4-Chlorotoluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
4-Isopropyltoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Acetone	0.314	0.0500	mg/kg wet	0.2500		126	70-130			
Benzene	0.0608	0.0050	mg/kg wet	0.05000		122	70-130			
Bromobenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50825 - 5035

Bromochloromethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130			
Bromodichloromethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130			
Bromoform	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Bromomethane	0.0545	0.0100	mg/kg wet	0.05000		109	70-130			
Carbon Disulfide	0.0604	0.0050	mg/kg wet	0.05000		121	70-130			
Carbon Tetrachloride	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0608	0.0100	mg/kg wet	0.05000		122	70-130			
Chloroform	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Chloromethane	0.0603	0.0100	mg/kg wet	0.05000		121	70-130			
cis-1,2-Dichloroethene	0.0602	0.0050	mg/kg wet	0.05000		120	70-130			
cis-1,3-Dichloropropene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Dibromochloromethane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
Dibromomethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Dichlorodifluoromethane	0.0629	0.0100	mg/kg wet	0.05000		126	70-130			
Diethyl Ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Di-isopropyl ether	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Ethyl tertiary-butyl ether	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
Ethylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Hexachlorobutadiene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Methylene Chloride	0.0663	0.0250	mg/kg wet	0.05000		133	70-130			B+
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
n-Propylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Styrene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Tertiary-amyl methyl ether	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
Tetrachloroethene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Tetrahydrofuran	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
Toluene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,2-Dichloroethene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
trans-1,3-Dichloropropene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Trichlorofluoromethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
Vinyl Acetate	0.0877	0.0050	mg/kg wet	0.05000		175	70-130			B+
Vinyl Chloride	0.0626	0.0100	mg/kg wet	0.05000		125	70-130			
Xylene O	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.0986	0.0100	mg/kg wet	0.1000		99	70-130			
Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0638		mg/kg wet	0.05000		128	70-130			
Surrogate: 4-Bromofluorobenzene	0.0504		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0539		mg/kg wet	0.05000		108	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50825 - 5035

<i>Surrogate: Toluene-d8</i>	0.0496		mg/kg wet	0.05000		99	70-130			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
1,1,1-Trichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	0.04	25	
1,1,2,2-Tetrachloroethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
1,1,2-Trichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	3	25	
1,1-Dichloroethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130	5	25	
1,1-Dichloroethene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
1,1-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	0.8	25	
1,2,3-Trichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	10	25	
1,2,3-Trichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
1,2,4-Trichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	8	25	
1,2,4-Trimethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,2-Dibromoethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
1,2-Dichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,2-Dichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	3	25	
1,2-Dichloropropane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
1,3,5-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
1,3-Dichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
1,3-Dichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	0.7	25	
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130	12	20	
1-Chlorohexane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
2,2-Dichloropropane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	0.8	25	
2-Butanone	0.272	0.0500	mg/kg wet	0.2500		109	70-130	3	25	
2-Chlorotoluene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
2-Hexanone	0.286	0.0500	mg/kg wet	0.2500		114	70-130	0.6	25	
4-Chlorotoluene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.4	25	
4-Isopropyltoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
4-Methyl-2-Pentanone	0.312	0.0500	mg/kg wet	0.2500		125	70-130	4	25	
Acetone	0.316	0.0500	mg/kg wet	0.2500		127	70-130	0.7	25	
Benzene	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	3	25	
Bromobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	5	25	
Bromodichloromethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	2	25	
Bromoform	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Bromomethane	0.0536	0.0100	mg/kg wet	0.05000		107	70-130	2	25	
Carbon Disulfide	0.0586	0.0050	mg/kg wet	0.05000		117	70-130	3	25	
Carbon Tetrachloride	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Chlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Chloroethane	0.0513	0.0100	mg/kg wet	0.05000		103	70-130	17	25	
Chloroform	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Chloromethane	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	7	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50825 - 5035

cis-1,2-Dichloroethene	0.0610	0.0050	mg/kg wet	0.05000		122	70-130	1	25	
cis-1,3-Dichloropropene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130	2	25	
Dibromochloromethane	0.0599	0.0050	mg/kg wet	0.05000		120	70-130	4	25	
Dibromomethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	2	25	
Dichlorodifluoromethane	0.0610	0.0100	mg/kg wet	0.05000		122	70-130	3	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	0.3	25	
Di-isopropyl ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Ethyl tertiary-butyl ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
Ethylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Hexachlorobutadiene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
Isopropylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Methyl tert-Butyl Ether	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
Methylene Chloride	0.0613	0.0250	mg/kg wet	0.05000		123	70-130	8	25	
Naphthalene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	10	25	
n-Butylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	0.9	25	
n-Propylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
sec-Butylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Styrene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	2	25	
Tetrachloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Tetrahydrofuran	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
Toluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	0.2	25	
trans-1,2-Dichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	0.7	25	
trans-1,3-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
Trichloroethene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.8	25	
Trichlorofluoromethane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130	1	25	
Vinyl Acetate	0.0844	0.0050	mg/kg wet	0.05000		169	70-130	4	25	B+
Vinyl Chloride	0.0616	0.0100	mg/kg wet	0.05000		123	70-130	2	25	
Xylene O	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Xylene P,M	0.102	0.0100	mg/kg wet	0.1000		102	70-130	3	25	
Xylenes (Total)	0.152	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0590		mg/kg wet	0.05000		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0513		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50614 - 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							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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

Batch CJ50614 - 3546

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>4.11</i>		mg/kg wet	<i>5.000</i>		<i>82</i>	<i>40-140</i>			
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LCS

Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		101	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		94	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		94	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.66</i>		mg/kg wet	<i>5.000</i>		<i>93</i>	<i>40-140</i>			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	10	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140	13	25	
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140	13	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	13	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		90	40-140	12	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140	13	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	10	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	11	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140	14	25	
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		83	40-140	12	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140	17	25	
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140	13	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	

<i>Surrogate: O-Terphenyl</i>	<i>4.00</i>		mg/kg wet	<i>5.000</i>		<i>80</i>	<i>40-140</i>			
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CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510138

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 CJ50615 - 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							
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							



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8270D Semi-Volatile Organic Compounds

Batch CJ50615 - 3546

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	2.61		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	4.22		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Fluorobiphenyl	2.67		mg/kg wet	3.333		80	30-130			
Surrogate: 2-Fluorophenol	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: Nitrobenzene-d5	3.00		mg/kg wet	3.333		90	30-130			
Surrogate: Phenol-d6	4.64		mg/kg wet	5.000		93	30-130			
Surrogate: p-Terphenyl-d14	2.91		mg/kg wet	3.333		87	30-130			

LCS

1,1-Biphenyl	2.72	0.333	mg/kg wet	3.333		82	40-140			
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
1,2-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,3-Dichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2,3,4,6-Tetrachlorophenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130			



CERTIFICATE OF ANALYSIS

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Quality Control Data

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

Batch CJ50615 - 3546

2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dimethylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2,4-Dinitrophenol	2.74	1.67	mg/kg wet	3.333		82	30-130			
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140			
2,6-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140			
2-Chlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.47	0.333	mg/kg wet	3.333		74	40-140			
2-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130			
2-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
3,3'-Dichlorobenzidine	2.03	0.667	mg/kg wet	3.333		61	40-140			
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130			
3-Nitroaniline	3.22	0.333	mg/kg wet	3.333		97	40-140			
4,6-Dinitro-2-Methylphenol	2.94	1.67	mg/kg wet	3.333		88	30-130			
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140			
4-Chloro-3-Methylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.34	0.667	mg/kg wet	3.333		70	40-140			
4-Chloro-phenyl-phenyl ether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Nitroaniline	3.48	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.00	1.67	mg/kg wet	3.333		90	30-130			
Acenaphthene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Acenaphthylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Acetophenone	2.82	0.667	mg/kg wet	3.333		85	40-140			
Aniline	2.74	0.667	mg/kg wet	3.333		82	40-140			
Anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(a)anthracene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)pyrene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.52	1.67	mg/kg wet	3.333		76	40-140			
Benzyl Alcohol	2.86	0.333	mg/kg wet	3.333		86	40-140			
bis(2-Chloroethoxy)methane	2.79	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	3.12	0.333	mg/kg wet	3.333		93	40-140			
bis(2-chloroisopropyl)Ether	2.55	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Butylbenzylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140			
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.92	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.05	0.167	mg/kg wet	3.333		91	40-140			
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140			
Diethylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50615 - 3546

Dimethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Di-n-butylphthalate	3.12	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorobenzene	2.59	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140			
Hexachloroethane	2.46	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Isophorone	2.68	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.70	0.333	mg/kg wet	3.333		81	40-140			
N-nitrosodiphenylamine	3.07	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	2.93	1.67	mg/kg wet	3.333		88	30-130			
Phenanthrene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Phenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
Pyrene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	1.45	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.12		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Fluorobiphenyl	2.69		mg/kg wet	3.333		81	30-130			
Surrogate: 2-Fluorophenol	4.33		mg/kg wet	5.000		87	30-130			
Surrogate: Nitrobenzene-d5	2.85		mg/kg wet	3.333		85	30-130			
Surrogate: Phenol-d6	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	2.71		mg/kg wet	3.333		81	30-130			

LCS Dup

1,1-Biphenyl	2.71	0.333	mg/kg wet	3.333		81	40-140	0.5	30	
1,2,4-Trichlorobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
1,2-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.5	30	
1,3-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.8	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.44	1.67	mg/kg wet	3.333		73	30-130	1	30	
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130	0.08	30	
2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130	0.03	30	
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	0.3	30	
2,4-Dimethylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130	0.3	30	
2,4-Dinitrophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	4	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	1	30	
2,6-Dinitrotoluene	2.91	0.333	mg/kg wet	3.333		87	40-140	2	30	
2-Chloronaphthalene	2.45	0.333	mg/kg wet	3.333		74	40-140	1	30	
2-Chlorophenol	2.56	0.333	mg/kg wet	3.333		77	30-130	2	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50615 - 3546

2-Methylnaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
2-Methylphenol	2.66	0.333	mg/kg wet	3.333		80	30-130	2	30	
2-Nitroaniline	2.65	0.333	mg/kg wet	3.333		79	40-140	1	30	
2-Nitrophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	0.5	30	
3,3'-Dichlorobenzidine	2.10	0.667	mg/kg wet	3.333		63	40-140	3	30	
3+4-Methylphenol	5.43	0.667	mg/kg wet	6.667		81	30-130	3	30	
3-Nitroaniline	3.24	0.333	mg/kg wet	3.333		97	40-140	0.8	30	
4,6-Dinitro-2-Methylphenol	2.98	1.67	mg/kg wet	3.333		89	30-130	1	30	
4-Bromophenyl-phenylether	2.98	0.333	mg/kg wet	3.333		89	40-140	3	30	
4-Chloro-3-Methylphenol	2.85	0.333	mg/kg wet	3.333		85	30-130	1	30	
4-Chloroaniline	2.39	0.667	mg/kg wet	3.333		72	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.83	0.333	mg/kg wet	3.333		85	40-140	1	30	
4-Nitroaniline	3.54	0.333	mg/kg wet	3.333		106	40-140	2	30	
4-Nitrophenol	3.02	1.67	mg/kg wet	3.333		90	30-130	0.4	30	
Acenaphthene	2.78	0.333	mg/kg wet	3.333		83	40-140	0.9	30	
Acenaphthylene	2.67	0.333	mg/kg wet	3.333		80	40-140	0.9	30	
Acetophenone	2.77	0.667	mg/kg wet	3.333		83	40-140	2	30	
Aniline	2.70	0.667	mg/kg wet	3.333		81	40-140	1	30	
Anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Azobenzene	3.29	0.333	mg/kg wet	3.333		99	40-140	2	30	
Benzo(a)anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140	0.9	30	
Benzo(b)fluoranthene	3.42	0.333	mg/kg wet	3.333		103	40-140	13	30	
Benzo(g,h,i)perylene	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Benzo(k)fluoranthene	2.81	0.333	mg/kg wet	3.333		84	40-140	9	30	
Benzoic Acid	2.27	1.67	mg/kg wet	3.333		68	40-140	10	30	
Benzyl Alcohol	2.77	0.333	mg/kg wet	3.333		83	40-140	3	30	
bis(2-Chloroethoxy)methane	2.80	0.333	mg/kg wet	3.333		84	40-140	0.5	30	
bis(2-Chloroethyl)ether	3.09	0.333	mg/kg wet	3.333		93	40-140	0.8	30	
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	0.6	30	
bis(2-Ethylhexyl)phthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Butylbenzylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	5	30	
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140	0.2	30	
Chrysene	2.94	0.167	mg/kg wet	3.333		88	40-140	0.7	30	
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140	2	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		81	40-140	0.8	30	
Diethylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	4	30	
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140	1	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	3	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	6	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	0.5	30	
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140	0.2	30	
Hexachlorobenzene	2.65	0.167	mg/kg wet	3.333		80	40-140	2	30	
Hexachlorobutadiene	2.39	0.333	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorocyclopentadiene	2.45	1.67	mg/kg wet	3.333		73	40-140	4	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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 CJ50615 - 3546

Hexachloroethane	2.48	0.333	mg/kg wet	3.333		74	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	3.06	0.333	mg/kg wet	3.333		92	40-140	2	30	
Isophorone	2.66	0.333	mg/kg wet	3.333		80	40-140	0.6	30	
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	0.2	30	
Nitrobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140	0.7	30	
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140	0	30	
N-Nitroso-Di-n-Propylamine	2.68	0.333	mg/kg wet	3.333		80	40-140	0.8	30	
N-nitrosodiphenylamine	3.14	0.333	mg/kg wet	3.333		94	40-140	2	30	
Pentachlorophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	3	30	
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140	1	30	
Phenol	2.57	0.333	mg/kg wet	3.333		77	30-130	4	30	
Pyrene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pyridine	1.30	1.67	mg/kg wet	3.333		39	40-140	11	30	B-
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.13		mg/kg wet	5.000		83	30-130			
Surrogate: Nitrobenzene-d5	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.25		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.89		mg/kg wet	3.333		87	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510138

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+).
- 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: 1510138

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: 15100138
 Date Project Due: 10/9/15
 Days For Project: 3 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

* No

Air No.:

2. Were Custody Seals Present?

No

3. Were Custody Seals Intact?

N/A

4. Is Radiation count < 100 CPM?

Yes

5. Is a cooler present?

Yes

Cooler Temp: 6.1

Iced With: Ice

6. Was COC included with samples?

Yes

7. Was COC signed and dated by client?

Yes

8. Does the COC match the sample

Yes

9. Is COC complete and correct?

Yes

10. Are the samples properly preserved?

Yes

11. Proper sample containers used?

Yes

12. Any air bubbles in the VOA vials?

N/A

13. Holding times exceeded?

No

14. Sufficient sample volumes?

Yes

15. Any Subcontracting needed?

No

16. Are ESS labels on correct containers? Yes No

17. Were samples received intact? Yes No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

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

LL VIALS FROZEN @ 1455 JE 10/6/15

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: 10/6/15 1450

Reviewed By: [Signature]

Date/Time: 10/6/15 1452



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: 1510135

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

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 3:43 pm, Oct 13, 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: 1510135

SAMPLE RECEIPT

The following samples were received on October 06, 2015 for the analyses specified on the enclosed Chain of Custody Record.

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

Low Level VOA vials were frozen by ESS Laboratory on October 6, 2015 at 14:55.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510135-01	Lopes-Raynham 20% Org 11	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: 1510135

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ50739-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (174% @ 70-130%)

CJ50739-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

4-Methyl-2-Pentanone (134% @ 70-130%), Acetone (156% @ 70-130%), Methylene Chloride (131% @ 70-130%), Vinyl Acetate (194% @ 70-130%)

8270D Semi-Volatile Organic Compounds

CJ50615-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

Pyridine (39% @ 40-140%)

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

CJ50547-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

Lead (67% @ 69-131%)

CJ50547-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)

Arsenic (23% @ 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: 1510135

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.18 (2.50)		6010C		1	KJK	10/07/15 5:18	2.16	100	CJ50547
Barium	17.0 (2.50)		6010C		1	KJK	10/07/15 5:18	2.16	100	CJ50547
Cadmium	ND (0.50)		6010C		1	KJK	10/07/15 5:18	2.16	100	CJ50547
Chromium	5.66 (1.00)		6010C		1	KJK	10/07/15 5:18	2.16	100	CJ50547
Lead	24.4 (5.00)		6010C		1	KJK	10/07/15 5:18	2.16	100	CJ50547
Mercury	0.044 (0.033)		7471B		1	KJK	10/07/15 15:35	0.65	40	CJ50550
Selenium	ND (10.0)		6010C		2	KJK	10/07/15 20:06	2.16	100	CJ50547
Silver	ND (0.50)		6010C		1	KJK	10/07/15 5:18	2.16	100	CJ50547



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
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	10/07/15 14:26	CYJ0089	CJ50739
1,1,1-Trichloroethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,1,2,2-Tetrachloroethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,1,2-Trichloroethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,1-Dichloroethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,1-Dichloroethene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,1-Dichloropropene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2,3-Trichlorobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2,3-Trichloropropane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2,4-Trichlorobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2,4-Trimethylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2-Dibromo-3-Chloropropane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2-Dibromoethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2-Dichlorobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2-Dichloroethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,2-Dichloropropane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,3,5-Trimethylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,3-Dichlorobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,3-Dichloropropane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,4-Dichlorobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1,4-Dioxane	ND (0.0806)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
1-Chlorohexane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
2,2-Dichloropropane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
2-Butanone	ND (0.0403)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
2-Chlorotoluene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
2-Hexanone	ND (0.0403)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
4-Chlorotoluene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
4-Isopropyltoluene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
4-Methyl-2-Pentanone	ND (0.0403)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Acetone	ND (0.0403)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Benzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Bromobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
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	10/07/15 14:26	CYJ0089	CJ50739
Bromodichloromethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Bromoform	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Bromomethane	ND (0.0081)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Carbon Disulfide	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Carbon Tetrachloride	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Chlorobenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Chloroethane	ND (0.0081)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Chloroform	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Chloromethane	ND (0.0081)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
cis-1,2-Dichloroethene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
cis-1,3-Dichloropropene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Dibromochloromethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Dibromomethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Dichlorodifluoromethane	ND (0.0081)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Diethyl Ether	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Di-isopropyl ether	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Ethyl tertiary-butyl ether	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Ethylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Hexachlorobutadiene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Isopropylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Methyl tert-Butyl Ether	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Methylene Chloride	ND (0.0202)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Naphthalene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
n-Butylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
n-Propylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
sec-Butylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Styrene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
tert-Butylbenzene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Tertiary-amyl methyl ether	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Tetrachloroethene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Tetrahydrofuran	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes-Raynham 20% Org 11
 Date Sampled: 10/06/15 13:30
 Percent Solids: 93
 Initial Volume: 6.7
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510135
 ESS Laboratory Sample ID: 1510135-01
 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	10/07/15 14:26	CYJ0089	CJ50739
trans-1,2-Dichloroethene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
trans-1,3-Dichloropropene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Trichloroethene	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Trichlorofluoromethane	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Vinyl Acetate	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Vinyl Chloride	ND (0.0081)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Xylene O	ND (0.0040)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Xylene P,M	ND (0.0081)		8260B Low		1	10/07/15 14:26	CYJ0089	CJ50739
Xylenes (Total)	ND (0.0081)		8260B Low		1	10/07/15 14:26		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	117 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	82 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	92 %		70-130
<i>Surrogate: Toluene-d8</i>	91 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 14:11

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	202 (41.4)		8100M		1	10/10/15 5:29	CYJ0132	CJ50614
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>107 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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	10/07/15 0:56	CYJ0076	CJ50615
1,2,4-Trichlorobenzene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
1,2-Dichlorobenzene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
1,3-Dichlorobenzene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
1,4-Dichlorobenzene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,3,4,6-Tetrachlorophenol	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,4,5-Trichlorophenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,4,6-Trichlorophenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,4-Dichlorophenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,4-Dimethylphenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,4-Dinitrophenol	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,4-Dinitrotoluene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2,6-Dinitrotoluene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2-Chloronaphthalene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2-Chlorophenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2-Methylnaphthalene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2-Methylphenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2-Nitroaniline	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
2-Nitrophenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
3,3'-Dichlorobenzidine	ND (0.735)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
3+4-Methylphenol	ND (0.735)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
3-Nitroaniline	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4,6-Dinitro-2-Methylphenol	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4-Bromophenyl-phenylether	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4-Chloro-3-Methylphenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4-Chloroaniline	ND (0.735)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4-Chloro-phenyl-phenyl ether	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4-Nitroaniline	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
4-Nitrophenol	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Acenaphthene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Acenaphthylene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Acetophenone	ND (0.735)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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	10/07/15 0:56	CYJ0076	CJ50615
Anthracene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Azobenzene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzo(a)anthracene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzo(a)pyrene	0.323 (0.184)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzo(b)fluoranthene	0.550 (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzo(g,h,i)perylene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzo(k)fluoranthene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzoic Acid	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Benzyl Alcohol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
bis(2-Chloroethoxy)methane	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
bis(2-Chloroethyl)ether	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
bis(2-chloroisopropyl)Ether	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
bis(2-Ethylhexyl)phthalate	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Butylbenzylphthalate	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Carbazole	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Chrysene	0.383 (0.184)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Dibenzofuran	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Diethylphthalate	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Dimethylphthalate	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Di-n-butylphthalate	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Di-n-octylphthalate	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Fluoranthene	0.643 (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Fluorene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Hexachlorobenzene	ND (0.184)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Hexachlorobutadiene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Hexachlorocyclopentadiene	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Hexachloroethane	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Indeno(1,2,3-cd)Pyrene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Isophorone	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Naphthalene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes-Raynham 20% Org 11
 Date Sampled: 10/06/15 13:30
 Percent Solids: 93
 Initial Volume: 14.7
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510135
 ESS Laboratory Sample ID: 1510135-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: JXS
 Prepared: 10/6/15 16:11

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	10/07/15 0:56	CYJ0076	CJ50615
N-Nitrosodimethylamine	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
N-Nitroso-Di-n-Propylamine	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
N-nitrosodiphenylamine	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Pentachlorophenol	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Phenanthrene	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Phenol	ND (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Pyrene	0.423 (0.367)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615
Pyridine	ND (1.84)		8270D		1	10/07/15 0:56	CYJ0076	CJ50615

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	58 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	69 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	66 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	64 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	68 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	66 %		30-130
<i>Surrogate: Phenol-d6</i>	73 %		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: Lopes-Raynham 20% Org 11
Date Sampled: 10/06/15 13:30
Percent Solids: 93

ESS Laboratory Work Order: 1510135
ESS Laboratory Sample ID: 1510135-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.95 (N/A)		9045		1	EEM	10/06/15 17:40	S.U.	CJ50632
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: 1510135

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 CJ50547 - 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	67.0	9.43	mg/kg wet	52.30	128	43-169
Barium	140	9.43	mg/kg wet	145.0	97	80-120
Cadmium	54.7	1.89	mg/kg wet	71.60	76	62-138
Chromium	79.4	3.77	mg/kg wet	88.50	90	80-120
Lead	54.2	18.9	mg/kg wet	77.80	70	69-131
Selenium	77.5	18.9	mg/kg wet	81.10	96	80-120
Silver	115	1.89	mg/kg wet	114.0	101	80-120

LCS Dup

Arsenic	53.3	9.80	mg/kg wet	52.30	102	43-169	23	20	D+
Barium	136	9.80	mg/kg wet	145.0	94	80-120	3	20	
Cadmium	52.0	1.96	mg/kg wet	71.60	73	62-138	5	20	
Chromium	75.4	3.92	mg/kg wet	88.50	85	80-120	5	20	
Lead	51.8	19.6	mg/kg wet	77.80	67	69-131	4	20	B-
Selenium	77.6	19.6	mg/kg wet	81.10	96	80-120	0.2	20	
Silver	111	1.96	mg/kg wet	114.0	97	80-120	4	20	

Reference

Arsenic	50.2	9.43	mg/kg wet	52.30	96	43-169
Barium	138	9.43	mg/kg wet	145.0	95	69-131
Cadmium	51.3	1.89	mg/kg wet	71.60	72	62-138
Chromium	74.6	3.77	mg/kg wet	88.50	84	67-133
Lead	51.1	18.9	mg/kg wet	77.80	66	69-131
Selenium	74.9	18.9	mg/kg wet	81.10	92	64-137
Silver	113	1.89	mg/kg wet	114.0	99	68-132

Reference

Arsenic	47.0	9.26	mg/kg wet	52.30	90	43-169
Barium	181	9.26	mg/kg wet	145.0	125	69-131
Cadmium	52.1	1.85	mg/kg wet	71.60	73	62-138
Chromium	77.9	3.70	mg/kg wet	88.50	88	67-133
Lead	52.4	18.5	mg/kg wet	77.80	67	69-131
Selenium	85.2	18.5	mg/kg wet	81.10	105	64-137
Silver	135	1.85	mg/kg wet	114.0	119	68-132

Reference

Arsenic	46.5	10.0	mg/kg wet	52.30	89	43-169
Barium	143	10.0	mg/kg wet	145.0	99	69-131
Cadmium	56.1	2.00	mg/kg wet	71.60	78	62-138



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50547 - 3050B

Chromium	80.4	4.00	mg/kg wet	88.50		91	67-133			
Lead	56.0	20.0	mg/kg wet	77.80		72	69-131			
Selenium	79.0	20.0	mg/kg wet	81.10		97	64-137			
Silver	120	2.00	mg/kg wet	114.0		106	68-132			

Reference

Arsenic	80.0	9.43	mg/kg wet	52.30		153	43-169			
Barium	148	9.43	mg/kg wet	145.0		102	69-131			
Cadmium	52.8	1.89	mg/kg wet	71.60		74	62-138			
Chromium	78.0	3.77	mg/kg wet	88.50		88	67-133			
Lead	52.5	18.9	mg/kg wet	77.80		67	69-131			
Selenium	77.4	18.9	mg/kg wet	81.10		95	64-137			
Silver	119	1.89	mg/kg wet	114.0		104	68-132			

Batch CJ50550 - 7471A

Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	9.24	3.41	mg/kg wet	9.700		95	80-120			
LCS Dup										
Mercury	9.69	3.67	mg/kg wet	9.700		100	80-120	5	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50739 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50739 - 5035

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							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50739 - 5035

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	0.0590		mg/kg wet	0.05000		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0425		mg/kg wet	0.05000		85	70-130			
Surrogate: Dibromofluoromethane	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: Toluene-d8	0.0450		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2-Trichloroethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
1,1-Dichloroethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dibromoethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloroethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,3,5-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130			
1-Chlorohexane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
2-Butanone	0.273	0.0500	mg/kg wet	0.2500		109	70-130			
2-Chlorotoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130			
4-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130			
Acetone	0.314	0.0500	mg/kg wet	0.2500		126	70-130			
Benzene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50739 - 5035

Bromochloromethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Bromodichloromethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130			
Bromoform	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0488	0.0100	mg/kg wet	0.05000		98	70-130			
Carbon Disulfide	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
Carbon Tetrachloride	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
Chloroform	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Chloromethane	0.0548	0.0100	mg/kg wet	0.05000		110	70-130			
cis-1,2-Dichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
cis-1,3-Dichloropropene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Dibromochloromethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
Dibromomethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Dichlorodifluoromethane	0.0514	0.0100	mg/kg wet	0.05000		103	70-130			
Diethyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Ethyl tertiary-butyl ether	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Ethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Isopropylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0625	0.0250	mg/kg wet	0.05000		125	70-130			
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
n-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Tetrachloroethene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrahydrofuran	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
Toluene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
trans-1,2-Dichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Vinyl Acetate	0.0868	0.0050	mg/kg wet	0.05000		174	70-130			B+
Vinyl Chloride	0.0573	0.0100	mg/kg wet	0.05000		115	70-130			
Xylene O	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0952	0.0100	mg/kg wet	0.1000		95	70-130			
Xylenes (Total)	0.142	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0597		mg/kg wet	0.05000		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.0490		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0505		mg/kg wet	0.05000		101	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50739 - 5035

<i>Surrogate: Toluene-d8</i>	0.0494		mg/kg wet	0.05000		99	70-130			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
1,1,1-Trichloroethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	7	25	
1,1,2,2-Tetrachloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,2-Trichloroethane	0.0608	0.0050	mg/kg wet	0.05000		122	70-130	6	25	
1,1-Dichloroethane	0.0604	0.0050	mg/kg wet	0.05000		121	70-130	8	25	
1,1-Dichloroethene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	9	25	
1,1-Dichloropropene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
1,2,3-Trichloropropane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2,4-Trichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
1,2,4-Trimethylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,2-Dibromo-3-Chloropropane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2-Dibromoethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,2-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2-Dichloroethane	0.0615	0.0050	mg/kg wet	0.05000		123	70-130	6	25	
1,2-Dichloropropane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
1,3,5-Trimethylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
1,3-Dichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,3-Dichloropropane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
1,4-Dioxane	1.19	0.100	mg/kg wet	1.000		119	70-130	5	20	
1-Chlorohexane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
2,2-Dichloropropane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
2-Butanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	11	25	
2-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
2-Hexanone	0.317	0.0500	mg/kg wet	0.2500		127	70-130	8	25	
4-Chlorotoluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
4-Isopropyltoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
4-Methyl-2-Pentanone	0.335	0.0500	mg/kg wet	0.2500		134	70-130	10	25	B+
Acetone	0.390	0.0500	mg/kg wet	0.2500		156	70-130	22	25	B+
Benzene	0.0599	0.0050	mg/kg wet	0.05000		120	70-130	7	25	
Bromobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	6	25	
Bromodichloromethane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130	6	25	
Bromoform	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Bromomethane	0.0556	0.0100	mg/kg wet	0.05000		111	70-130	13	25	
Carbon Disulfide	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	8	25	
Carbon Tetrachloride	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
Chlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chloroethane	0.0585	0.0100	mg/kg wet	0.05000		117	70-130	10	25	
Chloroform	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Chloromethane	0.0594	0.0100	mg/kg wet	0.05000		119	70-130	8	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50739 - 5035

cis-1,2-Dichloroethene	0.0619	0.0050	mg/kg wet	0.05000		124	70-130	8	25	
cis-1,3-Dichloropropene	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Dibromochloromethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	4	25	
Dibromomethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	6	25	
Dichlorodifluoromethane	0.0545	0.0100	mg/kg wet	0.05000		109	70-130	6	25	
Diethyl Ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
Di-isopropyl ether	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
Ethyl tertiary-butyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	7	25	
Ethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Hexachlorobutadiene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Methyl tert-Butyl Ether	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	9	25	
Methylene Chloride	0.0657	0.0250	mg/kg wet	0.05000		131	70-130	5	25	B+
Naphthalene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
n-Propylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
sec-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Styrene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
tert-Butylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Tertiary-amyl methyl ether	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	9	25	
Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Tetrahydrofuran	0.0623	0.0050	mg/kg wet	0.05000		125	70-130	10	25	
Toluene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
trans-1,2-Dichloroethene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	8	25	
trans-1,3-Dichloropropene	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
Trichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
Trichlorofluoromethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Vinyl Acetate	0.0968	0.0050	mg/kg wet	0.05000		194	70-130	11	25	B+
Vinyl Chloride	0.0614	0.0100	mg/kg wet	0.05000		123	70-130	7	25	
Xylene O	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Xylene P,M	0.0973	0.0100	mg/kg wet	0.1000		97	70-130	2	25	
Xylenes (Total)	0.146	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0620		mg/kg wet	0.05000		124	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0523		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50614 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50614 - 3546

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>4.11</i>		mg/kg wet	<i>5.000</i>		<i>82</i>	<i>40-140</i>			
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LCS

Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		101	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		94	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		94	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.66</i>		mg/kg wet	<i>5.000</i>		<i>93</i>	<i>40-140</i>			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	10	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140	13	25	
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140	13	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	13	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		90	40-140	12	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140	13	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	10	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	11	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140	14	25	
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		83	40-140	12	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140	17	25	
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140	13	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	

<i>Surrogate: O-Terphenyl</i>	<i>4.00</i>		mg/kg wet	<i>5.000</i>		<i>80</i>	<i>40-140</i>			
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CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50615 - 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							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50615 - 3546

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	2.61		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	4.22		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Fluorobiphenyl	2.67		mg/kg wet	3.333		80	30-130			
Surrogate: 2-Fluorophenol	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: Nitrobenzene-d5	3.00		mg/kg wet	3.333		90	30-130			
Surrogate: Phenol-d6	4.64		mg/kg wet	5.000		93	30-130			
Surrogate: p-Terphenyl-d14	2.91		mg/kg wet	3.333		87	30-130			

LCS

1,1-Biphenyl	2.72	0.333	mg/kg wet	3.333		82	40-140			
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
1,2-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,3-Dichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2,3,4,6-Tetrachlorophenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50615 - 3546

2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dimethylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2,4-Dinitrophenol	2.74	1.67	mg/kg wet	3.333		82	30-130			
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140			
2,6-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140			
2-Chlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.47	0.333	mg/kg wet	3.333		74	40-140			
2-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130			
2-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
3,3'-Dichlorobenzidine	2.03	0.667	mg/kg wet	3.333		61	40-140			
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130			
3-Nitroaniline	3.22	0.333	mg/kg wet	3.333		97	40-140			
4,6-Dinitro-2-Methylphenol	2.94	1.67	mg/kg wet	3.333		88	30-130			
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140			
4-Chloro-3-Methylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.34	0.667	mg/kg wet	3.333		70	40-140			
4-Chloro-phenyl-phenyl ether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Nitroaniline	3.48	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.00	1.67	mg/kg wet	3.333		90	30-130			
Acenaphthene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Acenaphthylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Acetophenone	2.82	0.667	mg/kg wet	3.333		85	40-140			
Aniline	2.74	0.667	mg/kg wet	3.333		82	40-140			
Anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(a)anthracene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)pyrene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.52	1.67	mg/kg wet	3.333		76	40-140			
Benzyl Alcohol	2.86	0.333	mg/kg wet	3.333		86	40-140			
bis(2-Chloroethoxy)methane	2.79	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	3.12	0.333	mg/kg wet	3.333		93	40-140			
bis(2-chloroisopropyl)Ether	2.55	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Butylbenzylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140			
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.92	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.05	0.167	mg/kg wet	3.333		91	40-140			
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140			
Diethylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50615 - 3546

Dimethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Di-n-butylphthalate	3.12	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorobenzene	2.59	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140			
Hexachloroethane	2.46	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Isophorone	2.68	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.70	0.333	mg/kg wet	3.333		81	40-140			
N-nitrosodiphenylamine	3.07	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	2.93	1.67	mg/kg wet	3.333		88	30-130			
Phenanthrene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Phenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
Pyrene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	1.45	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.12		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Fluorobiphenyl	2.69		mg/kg wet	3.333		81	30-130			
Surrogate: 2-Fluorophenol	4.33		mg/kg wet	5.000		87	30-130			
Surrogate: Nitrobenzene-d5	2.85		mg/kg wet	3.333		85	30-130			
Surrogate: Phenol-d6	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	2.71		mg/kg wet	3.333		81	30-130			

LCS Dup

1,1-Biphenyl	2.71	0.333	mg/kg wet	3.333		81	40-140	0.5	30	
1,2,4-Trichlorobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
1,2-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.5	30	
1,3-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.8	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.44	1.67	mg/kg wet	3.333		73	30-130	1	30	
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130	0.08	30	
2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130	0.03	30	
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	0.3	30	
2,4-Dimethylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130	0.3	30	
2,4-Dinitrophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	4	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	1	30	
2,6-Dinitrotoluene	2.91	0.333	mg/kg wet	3.333		87	40-140	2	30	
2-Chloronaphthalene	2.45	0.333	mg/kg wet	3.333		74	40-140	1	30	
2-Chlorophenol	2.56	0.333	mg/kg wet	3.333		77	30-130	2	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50615 - 3546

2-Methylnaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
2-Methylphenol	2.66	0.333	mg/kg wet	3.333		80	30-130	2	30	
2-Nitroaniline	2.65	0.333	mg/kg wet	3.333		79	40-140	1	30	
2-Nitrophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	0.5	30	
3,3'-Dichlorobenzidine	2.10	0.667	mg/kg wet	3.333		63	40-140	3	30	
3+4-Methylphenol	5.43	0.667	mg/kg wet	6.667		81	30-130	3	30	
3-Nitroaniline	3.24	0.333	mg/kg wet	3.333		97	40-140	0.8	30	
4,6-Dinitro-2-Methylphenol	2.98	1.67	mg/kg wet	3.333		89	30-130	1	30	
4-Bromophenyl-phenylether	2.98	0.333	mg/kg wet	3.333		89	40-140	3	30	
4-Chloro-3-Methylphenol	2.85	0.333	mg/kg wet	3.333		85	30-130	1	30	
4-Chloroaniline	2.39	0.667	mg/kg wet	3.333		72	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.83	0.333	mg/kg wet	3.333		85	40-140	1	30	
4-Nitroaniline	3.54	0.333	mg/kg wet	3.333		106	40-140	2	30	
4-Nitrophenol	3.02	1.67	mg/kg wet	3.333		90	30-130	0.4	30	
Acenaphthene	2.78	0.333	mg/kg wet	3.333		83	40-140	0.9	30	
Acenaphthylene	2.67	0.333	mg/kg wet	3.333		80	40-140	0.9	30	
Acetophenone	2.77	0.667	mg/kg wet	3.333		83	40-140	2	30	
Aniline	2.70	0.667	mg/kg wet	3.333		81	40-140	1	30	
Anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Azobenzene	3.29	0.333	mg/kg wet	3.333		99	40-140	2	30	
Benzo(a)anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140	0.9	30	
Benzo(b)fluoranthene	3.42	0.333	mg/kg wet	3.333		103	40-140	13	30	
Benzo(g,h,i)perylene	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Benzo(k)fluoranthene	2.81	0.333	mg/kg wet	3.333		84	40-140	9	30	
Benzoic Acid	2.27	1.67	mg/kg wet	3.333		68	40-140	10	30	
Benzyl Alcohol	2.77	0.333	mg/kg wet	3.333		83	40-140	3	30	
bis(2-Chloroethoxy)methane	2.80	0.333	mg/kg wet	3.333		84	40-140	0.5	30	
bis(2-Chloroethyl)ether	3.09	0.333	mg/kg wet	3.333		93	40-140	0.8	30	
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	0.6	30	
bis(2-Ethylhexyl)phthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Butylbenzylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	5	30	
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140	0.2	30	
Chrysene	2.94	0.167	mg/kg wet	3.333		88	40-140	0.7	30	
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140	2	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		81	40-140	0.8	30	
Diethylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	4	30	
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140	1	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	3	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	6	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	0.5	30	
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140	0.2	30	
Hexachlorobenzene	2.65	0.167	mg/kg wet	3.333		80	40-140	2	30	
Hexachlorobutadiene	2.39	0.333	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorocyclopentadiene	2.45	1.67	mg/kg wet	3.333		73	40-140	4	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

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 CJ50615 - 3546

Hexachloroethane	2.48	0.333	mg/kg wet	3.333		74	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	3.06	0.333	mg/kg wet	3.333		92	40-140	2	30	
Isophorone	2.66	0.333	mg/kg wet	3.333		80	40-140	0.6	30	
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	0.2	30	
Nitrobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140	0.7	30	
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140	0	30	
N-Nitroso-Di-n-Propylamine	2.68	0.333	mg/kg wet	3.333		80	40-140	0.8	30	
N-nitrosodiphenylamine	3.14	0.333	mg/kg wet	3.333		94	40-140	2	30	
Pentachlorophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	3	30	
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140	1	30	
Phenol	2.57	0.333	mg/kg wet	3.333		77	30-130	4	30	
Pyrene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pyridine	1.30	1.67	mg/kg wet	3.333		39	40-140	11	30	B-
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.13		mg/kg wet	5.000		83	30-130			
Surrogate: Nitrobenzene-d5	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.25		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.89		mg/kg wet	3.333		87	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510135

Notes and Definitions

- Z-10 Soil pH measured in water at 20.3 °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.
- 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: 1510135

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: 15100135
 Date Project Due: 10/9/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| Cooler Temp: <u>6.1</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 v. AIS Frozen @ 1455 JL 10/6/15

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: 10/6/15 1445

Reviewed By: [Signature]

Date/Time: 10/6/15 1447



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: 1510136

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:45 pm, Oct 13, 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: 1510136

SAMPLE RECEIPT

The following samples were received on October 06, 2015 for the analyses specified on the enclosed Chain of Custody Record.

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

Low Level VOA vials were frozen by ESS Laboratory on October 6, 2015 at 14:55.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510136-01	Lopes-Raynham 20% Org 12	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: 1510136

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510136-01 [Surrogate recovery\(ies\) above upper control limit \(S+\).](#)
1,2-Dichloroethane-d4 (131% @ 70-130%)
- CJ50739-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)
Vinyl Acetate (174% @ 70-130%)
- CJ50739-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)
4-Methyl-2-Pentanone (134% @ 70-130%), Acetone (156% @ 70-130%), Methylene Chloride (131% @ 70-130%), Vinyl Acetate (194% @ 70-130%)

8270D Semi-Volatile Organic Compounds

- CJ50615-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)
Pyridine (39% @ 40-140%)
- 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

- CJ50547-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)
Lead (67% @ 69-131%)
- CJ50547-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)
Arsenic (23% @ 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: 1510136

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.66 (2.26)		6010C		1	KJK	10/07/15 5:22	2.33	100	CJ50547
Barium	16.4 (2.26)		6010C		1	KJK	10/07/15 5:22	2.33	100	CJ50547
Cadmium	ND (0.45)		6010C		1	KJK	10/07/15 5:22	2.33	100	CJ50547
Chromium	5.43 (0.91)		6010C		1	KJK	10/07/15 5:22	2.33	100	CJ50547
Lead	20.8 (4.53)		6010C		1	KJK	10/07/15 5:22	2.33	100	CJ50547
Mercury	ND (0.030)		7471B		1	KJK	10/07/15 15:37	0.69	40	CJ50550
Selenium	ND (9.05)		6010C		2	KJK	10/07/15 20:10	2.33	100	CJ50547
Silver	ND (0.45)		6010C		1	KJK	10/07/15 5:22	2.33	100	CJ50547



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
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	10/07/15 14:54	CYJ0089	CJ50739
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1,4-Dioxane	ND (0.0942)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
1-Chlorohexane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
2-Butanone	ND (0.0471)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
2-Chlorotoluene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
2-Hexanone	ND (0.0471)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
4-Chlorotoluene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
4-Methyl-2-Pentanone	ND (0.0471)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Acetone	ND (0.0471)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Benzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Bromobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
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	10/07/15 14:54	CYJ0089	CJ50739
Bromodichloromethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Bromoform	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Bromomethane	ND (0.0094)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Carbon Disulfide	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Chlorobenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Chloroethane	ND (0.0094)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Chloroform	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Chloromethane	ND (0.0094)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Dibromochloromethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Dibromomethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Dichlorodifluoromethane	ND (0.0094)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Diethyl Ether	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Di-isopropyl ether	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Ethylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Isopropylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Methylene Chloride	ND (0.0235)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Naphthalene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
n-Butylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
n-Propylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
sec-Butylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Styrene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
tert-Butylbenzene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Tetrachloroethene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Tetrahydrofuran	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
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	10/07/15 14:54	CYJ0089	CJ50739
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Trichloroethene	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Vinyl Acetate	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Vinyl Chloride	ND (0.0094)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Xylene O	ND (0.0047)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Xylene P,M	ND (0.0094)		8260B Low		1	10/07/15 14:54	CYJ0089	CJ50739
Xylenes (Total)	ND (0.0094)		8260B Low		1	10/07/15 14:54		[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>82 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>91 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 14:11

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	196 (40.8)		8100M		1	10/10/15 6:08	CYJ0132	CJ50614
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>107 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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 (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
1,2,4-Trichlorobenzene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
1,2-Dichlorobenzene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
1,3-Dichlorobenzene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
1,4-Dichlorobenzene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,3,4,6-Tetrachlorophenol	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,4,5-Trichlorophenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,4,6-Trichlorophenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,4-Dichlorophenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,4-Dimethylphenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,4-Dinitrophenol	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,4-Dinitrotoluene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2,6-Dinitrotoluene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2-Chloronaphthalene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2-Chlorophenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2-Methylnaphthalene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2-Methylphenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2-Nitroaniline	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
2-Nitrophenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
3,3'-Dichlorobenzidine	ND (0.733)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
3+4-Methylphenol	ND (0.733)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
3-Nitroaniline	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4,6-Dinitro-2-Methylphenol	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4-Bromophenyl-phenylether	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4-Chloro-3-Methylphenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4-Chloroaniline	ND (0.733)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4-Chloro-phenyl-phenyl ether	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4-Nitroaniline	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
4-Nitrophenol	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Acenaphthene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Acenaphthylene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Acetophenone	ND (0.733)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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 (0.733)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Anthracene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Azobenzene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzo(a)anthracene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzo(a)pyrene	0.186 (0.183)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzo(b)fluoranthene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzo(g,h,i)perylene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzo(k)fluoranthene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzoic Acid	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Benzyl Alcohol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
bis(2-Chloroethoxy)methane	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
bis(2-Chloroethyl)ether	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
bis(2-chloroisopropyl)Ether	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
bis(2-Ethylhexyl)phthalate	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Butylbenzylphthalate	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Carbazole	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Chrysene	0.222 (0.183)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Dibenzo(a,h)Anthracene	ND (0.183)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Dibenzofuran	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Diethylphthalate	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Dimethylphthalate	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Di-n-butylphthalate	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Di-n-octylphthalate	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Fluoranthene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Fluorene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Hexachlorobenzene	ND (0.183)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Hexachlorobutadiene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Hexachlorocyclopentadiene	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Hexachloroethane	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Indeno(1,2,3-cd)Pyrene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Isophorone	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Naphthalene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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 (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
N-Nitrosodimethylamine	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
N-Nitroso-Di-n-Propylamine	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
N-nitrosodiphenylamine	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Pentachlorophenol	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Phenanthrene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Phenol	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Pyrene	ND (0.366)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615
Pyridine	ND (1.83)		8270D		1	10/07/15 1:32	CYJ0076	CJ50615

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>71 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>62 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>60 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>63 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>68 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>69 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 12
Date Sampled: 10/06/15 13:40
Percent Solids: 95

ESS Laboratory Work Order: 1510136
ESS Laboratory Sample ID: 1510136-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.24 (N/A)		9045		1	EEM	10/06/15 17:40	S.U.	CJ50632
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: 1510136

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ50547 - 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	67.0	9.43	mg/kg wet	52.30		128	43-169			
Barium	140	9.43	mg/kg wet	145.0		97	80-120			
Cadmium	54.7	1.89	mg/kg wet	71.60		76	62-138			
Chromium	79.4	3.77	mg/kg wet	88.50		90	80-120			
Lead	54.2	18.9	mg/kg wet	77.80		70	69-131			
Selenium	77.5	18.9	mg/kg wet	81.10		96	80-120			
Silver	115	1.89	mg/kg wet	114.0		101	80-120			
LCS Dup										
Arsenic	53.3	9.80	mg/kg wet	52.30		102	43-169	23	20	D+
Barium	136	9.80	mg/kg wet	145.0		94	80-120	3	20	
Cadmium	52.0	1.96	mg/kg wet	71.60		73	62-138	5	20	
Chromium	75.4	3.92	mg/kg wet	88.50		85	80-120	5	20	
Lead	51.8	19.6	mg/kg wet	77.80		67	69-131	4	20	B-
Selenium	77.6	19.6	mg/kg wet	81.10		96	80-120	0.2	20	
Silver	111	1.96	mg/kg wet	114.0		97	80-120	4	20	
Reference										
Arsenic	50.2	9.43	mg/kg wet	52.30		96	43-169			
Barium	138	9.43	mg/kg wet	145.0		95	69-131			
Cadmium	51.3	1.89	mg/kg wet	71.60		72	62-138			
Chromium	74.6	3.77	mg/kg wet	88.50		84	67-133			
Lead	51.1	18.9	mg/kg wet	77.80		66	69-131			
Selenium	74.9	18.9	mg/kg wet	81.10		92	64-137			
Silver	113	1.89	mg/kg wet	114.0		99	68-132			
Reference										
Arsenic	47.0	9.26	mg/kg wet	52.30		90	43-169			
Barium	181	9.26	mg/kg wet	145.0		125	69-131			
Cadmium	52.1	1.85	mg/kg wet	71.60		73	62-138			
Chromium	77.9	3.70	mg/kg wet	88.50		88	67-133			
Lead	52.4	18.5	mg/kg wet	77.80		67	69-131			
Selenium	85.2	18.5	mg/kg wet	81.10		105	64-137			
Silver	135	1.85	mg/kg wet	114.0		119	68-132			
Reference										
Arsenic	46.5	10.0	mg/kg wet	52.30		89	43-169			
Barium	143	10.0	mg/kg wet	145.0		99	69-131			
Cadmium	56.1	2.00	mg/kg wet	71.60		78	62-138			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50547 - 3050B

Chromium	80.4	4.00	mg/kg wet	88.50		91	67-133			
Lead	56.0	20.0	mg/kg wet	77.80		72	69-131			
Selenium	79.0	20.0	mg/kg wet	81.10		97	64-137			
Silver	120	2.00	mg/kg wet	114.0		106	68-132			

Reference

Arsenic	80.0	9.43	mg/kg wet	52.30		153	43-169			
Barium	148	9.43	mg/kg wet	145.0		102	69-131			
Cadmium	52.8	1.89	mg/kg wet	71.60		74	62-138			
Chromium	78.0	3.77	mg/kg wet	88.50		88	67-133			
Lead	52.5	18.9	mg/kg wet	77.80		67	69-131			
Selenium	77.4	18.9	mg/kg wet	81.10		95	64-137			
Silver	119	1.89	mg/kg wet	114.0		104	68-132			

Batch CJ50550 - 7471A

Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	9.24	3.41	mg/kg wet	9.700		95	80-120			
LCS Dup										
Mercury	9.69	3.67	mg/kg wet	9.700		100	80-120	5	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50739 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50739 - 5035

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							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50739 - 5035

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	0.0590		mg/kg wet	0.05000		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0425		mg/kg wet	0.05000		85	70-130			
Surrogate: Dibromofluoromethane	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: Toluene-d8	0.0450		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2-Trichloroethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
1,1-Dichloroethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dibromoethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloroethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,3,5-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130			
1-Chlorohexane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
2-Butanone	0.273	0.0500	mg/kg wet	0.2500		109	70-130			
2-Chlorotoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130			
4-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130			
Acetone	0.314	0.0500	mg/kg wet	0.2500		126	70-130			
Benzene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50739 - 5035

Bromochloromethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Bromodichloromethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130			
Bromoform	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0488	0.0100	mg/kg wet	0.05000		98	70-130			
Carbon Disulfide	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
Carbon Tetrachloride	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
Chloroform	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Chloromethane	0.0548	0.0100	mg/kg wet	0.05000		110	70-130			
cis-1,2-Dichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
cis-1,3-Dichloropropene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Dibromochloromethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
Dibromomethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Dichlorodifluoromethane	0.0514	0.0100	mg/kg wet	0.05000		103	70-130			
Diethyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Ethyl tertiary-butyl ether	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Ethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Isopropylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0625	0.0250	mg/kg wet	0.05000		125	70-130			
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
n-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Tetrachloroethene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrahydrofuran	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
Toluene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
trans-1,2-Dichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Vinyl Acetate	0.0868	0.0050	mg/kg wet	0.05000		174	70-130			B+
Vinyl Chloride	0.0573	0.0100	mg/kg wet	0.05000		115	70-130			
Xylene O	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0952	0.0100	mg/kg wet	0.1000		95	70-130			
Xylenes (Total)	0.142	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0597		mg/kg wet	0.05000		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.0490		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0505		mg/kg wet	0.05000		101	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50739 - 5035

<i>Surrogate: Toluene-d8</i>	0.0494		mg/kg wet	0.05000		99	70-130			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
1,1,1-Trichloroethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	7	25	
1,1,2,2-Tetrachloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,2-Trichloroethane	0.0608	0.0050	mg/kg wet	0.05000		122	70-130	6	25	
1,1-Dichloroethane	0.0604	0.0050	mg/kg wet	0.05000		121	70-130	8	25	
1,1-Dichloroethene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	9	25	
1,1-Dichloropropene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
1,2,3-Trichloropropane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2,4-Trichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
1,2,4-Trimethylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,2-Dibromo-3-Chloropropane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2-Dibromoethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,2-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2-Dichloroethane	0.0615	0.0050	mg/kg wet	0.05000		123	70-130	6	25	
1,2-Dichloropropane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
1,3,5-Trimethylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
1,3-Dichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,3-Dichloropropane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
1,4-Dioxane	1.19	0.100	mg/kg wet	1.000		119	70-130	5	20	
1-Chlorohexane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
2,2-Dichloropropane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
2-Butanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	11	25	
2-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
2-Hexanone	0.317	0.0500	mg/kg wet	0.2500		127	70-130	8	25	
4-Chlorotoluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
4-Isopropyltoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
4-Methyl-2-Pentanone	0.335	0.0500	mg/kg wet	0.2500		134	70-130	10	25	B+
Acetone	0.390	0.0500	mg/kg wet	0.2500		156	70-130	22	25	B+
Benzene	0.0599	0.0050	mg/kg wet	0.05000		120	70-130	7	25	
Bromobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	6	25	
Bromodichloromethane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130	6	25	
Bromoform	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Bromomethane	0.0556	0.0100	mg/kg wet	0.05000		111	70-130	13	25	
Carbon Disulfide	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	8	25	
Carbon Tetrachloride	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
Chlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chloroethane	0.0585	0.0100	mg/kg wet	0.05000		117	70-130	10	25	
Chloroform	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Chloromethane	0.0594	0.0100	mg/kg wet	0.05000		119	70-130	8	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50739 - 5035

cis-1,2-Dichloroethene	0.0619	0.0050	mg/kg wet	0.05000		124	70-130	8	25	
cis-1,3-Dichloropropene	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Dibromochloromethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	4	25	
Dibromomethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	6	25	
Dichlorodifluoromethane	0.0545	0.0100	mg/kg wet	0.05000		109	70-130	6	25	
Diethyl Ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
Di-isopropyl ether	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
Ethyl tertiary-butyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	7	25	
Ethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Hexachlorobutadiene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Methyl tert-Butyl Ether	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	9	25	
Methylene Chloride	0.0657	0.0250	mg/kg wet	0.05000		131	70-130	5	25	B+
Naphthalene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
n-Propylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
sec-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Styrene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
tert-Butylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Tertiary-amyl methyl ether	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	9	25	
Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Tetrahydrofuran	0.0623	0.0050	mg/kg wet	0.05000		125	70-130	10	25	
Toluene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
trans-1,2-Dichloroethene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	8	25	
trans-1,3-Dichloropropene	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
Trichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
Trichlorofluoromethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Vinyl Acetate	0.0968	0.0050	mg/kg wet	0.05000		194	70-130	11	25	B+
Vinyl Chloride	0.0614	0.0100	mg/kg wet	0.05000		123	70-130	7	25	
Xylene O	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Xylene P,M	0.0973	0.0100	mg/kg wet	0.1000		97	70-130	2	25	
Xylenes (Total)	0.146	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0620		mg/kg wet	0.05000		124	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0523		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50614 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50614 - 3546

Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

<i>Surrogate: O-Terphenyl</i>	<i>4.11</i>		mg/kg wet	<i>5.000</i>		<i>82</i>	<i>40-140</i>			
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LCS

Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		101	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		94	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		94	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.66</i>		mg/kg wet	<i>5.000</i>		<i>93</i>	<i>40-140</i>			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	10	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140	13	25	
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140	13	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	13	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		90	40-140	12	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140	13	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	10	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	11	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140	14	25	
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		83	40-140	12	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140	17	25	
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140	13	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	

<i>Surrogate: O-Terphenyl</i>	<i>4.00</i>		mg/kg wet	<i>5.000</i>		<i>80</i>	<i>40-140</i>			
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CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50615 - 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							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50615 - 3546

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	2.61		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	4.22		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Fluorobiphenyl	2.67		mg/kg wet	3.333		80	30-130			
Surrogate: 2-Fluorophenol	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: Nitrobenzene-d5	3.00		mg/kg wet	3.333		90	30-130			
Surrogate: Phenol-d6	4.64		mg/kg wet	5.000		93	30-130			
Surrogate: p-Terphenyl-d14	2.91		mg/kg wet	3.333		87	30-130			

LCS

1,1-Biphenyl	2.72	0.333	mg/kg wet	3.333		82	40-140			
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
1,2-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,3-Dichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2,3,4,6-Tetrachlorophenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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Quality Control Data

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

Batch CJ50615 - 3546

2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dimethylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2,4-Dinitrophenol	2.74	1.67	mg/kg wet	3.333		82	30-130			
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140			
2,6-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140			
2-Chlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.47	0.333	mg/kg wet	3.333		74	40-140			
2-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130			
2-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
3,3'-Dichlorobenzidine	2.03	0.667	mg/kg wet	3.333		61	40-140			
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130			
3-Nitroaniline	3.22	0.333	mg/kg wet	3.333		97	40-140			
4,6-Dinitro-2-Methylphenol	2.94	1.67	mg/kg wet	3.333		88	30-130			
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140			
4-Chloro-3-Methylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.34	0.667	mg/kg wet	3.333		70	40-140			
4-Chloro-phenyl-phenyl ether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Nitroaniline	3.48	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.00	1.67	mg/kg wet	3.333		90	30-130			
Acenaphthene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Acenaphthylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Acetophenone	2.82	0.667	mg/kg wet	3.333		85	40-140			
Aniline	2.74	0.667	mg/kg wet	3.333		82	40-140			
Anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(a)anthracene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)pyrene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.52	1.67	mg/kg wet	3.333		76	40-140			
Benzyl Alcohol	2.86	0.333	mg/kg wet	3.333		86	40-140			
bis(2-Chloroethoxy)methane	2.79	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	3.12	0.333	mg/kg wet	3.333		93	40-140			
bis(2-chloroisopropyl)Ether	2.55	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Butylbenzylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140			
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.92	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.05	0.167	mg/kg wet	3.333		91	40-140			
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140			
Diethylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50615 - 3546

Dimethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Di-n-butylphthalate	3.12	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorobenzene	2.59	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140			
Hexachloroethane	2.46	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Isophorone	2.68	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.70	0.333	mg/kg wet	3.333		81	40-140			
N-nitrosodiphenylamine	3.07	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	2.93	1.67	mg/kg wet	3.333		88	30-130			
Phenanthrene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Phenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
Pyrene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	1.45	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.12		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Fluorobiphenyl	2.69		mg/kg wet	3.333		81	30-130			
Surrogate: 2-Fluorophenol	4.33		mg/kg wet	5.000		87	30-130			
Surrogate: Nitrobenzene-d5	2.85		mg/kg wet	3.333		85	30-130			
Surrogate: Phenol-d6	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	2.71		mg/kg wet	3.333		81	30-130			

LCS Dup

1,1-Biphenyl	2.71	0.333	mg/kg wet	3.333		81	40-140	0.5	30	
1,2,4-Trichlorobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
1,2-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.5	30	
1,3-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.8	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.44	1.67	mg/kg wet	3.333		73	30-130	1	30	
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130	0.08	30	
2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130	0.03	30	
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	0.3	30	
2,4-Dimethylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130	0.3	30	
2,4-Dinitrophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	4	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	1	30	
2,6-Dinitrotoluene	2.91	0.333	mg/kg wet	3.333		87	40-140	2	30	
2-Chloronaphthalene	2.45	0.333	mg/kg wet	3.333		74	40-140	1	30	
2-Chlorophenol	2.56	0.333	mg/kg wet	3.333		77	30-130	2	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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 CJ50615 - 3546

2-Methylnaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
2-Methylphenol	2.66	0.333	mg/kg wet	3.333		80	30-130	2	30	
2-Nitroaniline	2.65	0.333	mg/kg wet	3.333		79	40-140	1	30	
2-Nitrophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	0.5	30	
3,3'-Dichlorobenzidine	2.10	0.667	mg/kg wet	3.333		63	40-140	3	30	
3+4-Methylphenol	5.43	0.667	mg/kg wet	6.667		81	30-130	3	30	
3-Nitroaniline	3.24	0.333	mg/kg wet	3.333		97	40-140	0.8	30	
4,6-Dinitro-2-Methylphenol	2.98	1.67	mg/kg wet	3.333		89	30-130	1	30	
4-Bromophenyl-phenylether	2.98	0.333	mg/kg wet	3.333		89	40-140	3	30	
4-Chloro-3-Methylphenol	2.85	0.333	mg/kg wet	3.333		85	30-130	1	30	
4-Chloroaniline	2.39	0.667	mg/kg wet	3.333		72	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.83	0.333	mg/kg wet	3.333		85	40-140	1	30	
4-Nitroaniline	3.54	0.333	mg/kg wet	3.333		106	40-140	2	30	
4-Nitrophenol	3.02	1.67	mg/kg wet	3.333		90	30-130	0.4	30	
Acenaphthene	2.78	0.333	mg/kg wet	3.333		83	40-140	0.9	30	
Acenaphthylene	2.67	0.333	mg/kg wet	3.333		80	40-140	0.9	30	
Acetophenone	2.77	0.667	mg/kg wet	3.333		83	40-140	2	30	
Aniline	2.70	0.667	mg/kg wet	3.333		81	40-140	1	30	
Anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Azobenzene	3.29	0.333	mg/kg wet	3.333		99	40-140	2	30	
Benzo(a)anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140	0.9	30	
Benzo(b)fluoranthene	3.42	0.333	mg/kg wet	3.333		103	40-140	13	30	
Benzo(g,h,i)perylene	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Benzo(k)fluoranthene	2.81	0.333	mg/kg wet	3.333		84	40-140	9	30	
Benzoic Acid	2.27	1.67	mg/kg wet	3.333		68	40-140	10	30	
Benzyl Alcohol	2.77	0.333	mg/kg wet	3.333		83	40-140	3	30	
bis(2-Chloroethoxy)methane	2.80	0.333	mg/kg wet	3.333		84	40-140	0.5	30	
bis(2-Chloroethyl)ether	3.09	0.333	mg/kg wet	3.333		93	40-140	0.8	30	
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	0.6	30	
bis(2-Ethylhexyl)phthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Butylbenzylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	5	30	
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140	0.2	30	
Chrysene	2.94	0.167	mg/kg wet	3.333		88	40-140	0.7	30	
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140	2	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		81	40-140	0.8	30	
Diethylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	4	30	
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140	1	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	3	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	6	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	0.5	30	
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140	0.2	30	
Hexachlorobenzene	2.65	0.167	mg/kg wet	3.333		80	40-140	2	30	
Hexachlorobutadiene	2.39	0.333	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorocyclopentadiene	2.45	1.67	mg/kg wet	3.333		73	40-140	4	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510136

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 CJ50615 - 3546

Hexachloroethane	2.48	0.333	mg/kg wet	3.333		74	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	3.06	0.333	mg/kg wet	3.333		92	40-140	2	30	
Isophorone	2.66	0.333	mg/kg wet	3.333		80	40-140	0.6	30	
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	0.2	30	
Nitrobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140	0.7	30	
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140	0	30	
N-Nitroso-Di-n-Propylamine	2.68	0.333	mg/kg wet	3.333		80	40-140	0.8	30	
N-nitrosodiphenylamine	3.14	0.333	mg/kg wet	3.333		94	40-140	2	30	
Pentachlorophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	3	30	
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140	1	30	
Phenol	2.57	0.333	mg/kg wet	3.333		77	30-130	4	30	
Pyrene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pyridine	1.30	1.67	mg/kg wet	3.333		39	40-140	11	30	B-
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.13		mg/kg wet	5.000		83	30-130			
Surrogate: Nitrobenzene-d5	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.25		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.89		mg/kg wet	3.333		87	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510136

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+).
- 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: 1510136

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: 15100136
 Date Project Due: 10/9/15
 Days For Project: 3 Day

Items to be checked upon receipt:

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

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

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

LL VIALS FROZEN @ 1455 JL 10/6/15

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: 10/6/15 1447
 Date/Time: 10/6/15 1449



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: 1510137

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:45 pm, Oct 13, 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: 1510137

SAMPLE RECEIPT

The following samples were received on October 06, 2015 for the analyses specified on the enclosed Chain of Custody Record.

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

Low Level VOA vials were frozen by ESS Laboratory on October 6, 2015 at 14:55.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510137-01	Lopes-Raynham 20% Org 13	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: 1510137

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510137-01 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
1,4-Dichlorobenzene-D4 (48% @ 50-200%)
- 1510137-01RE1 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
1,4-Dichlorobenzene-D4 (37% @ 50-200%)
- 1510137-01RE1 Surrogate recovery(ies) above upper control limit (S+).
1,2-Dichloroethane-d4 (134% @ 70-130%)
- CJ50739-BS1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (174% @ 70-130%)
- CJ50739-BSD1 Blank Spike recovery is above upper control limit (B+).
4-Methyl-2-Pentanone (134% @ 70-130%), Acetone (156% @ 70-130%), Methylene Chloride (131% @ 70-130%), Vinyl Acetate (194% @ 70-130%)
- CJ50825-BS1 Blank Spike recovery is above upper control limit (B+).
Methylene Chloride (133% @ 70-130%), Vinyl Acetate (175% @ 70-130%)
- CJ50825-BSD1 Blank Spike recovery is above upper control limit (B+).
Vinyl Acetate (169% @ 70-130%)

8270D Semi-Volatile Organic Compounds

- CJ50615-BSD1 Blank Spike recovery is below lower control limit (B-).
Pyridine (39% @ 40-140%)
- 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

- CJ50547-BSD1 Blank Spike recovery is below lower control limit (B-).
Lead (67% @ 69-131%)
- CJ50547-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
Arsenic (23% @ 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: 1510137

DATA USABILITY LINKS

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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.46 (2.52)		6010C		1	KJK	10/07/15 5:27	2.14	100	CJ50547
Barium	17.8 (2.52)		6010C		1	KJK	10/07/15 5:27	2.14	100	CJ50547
Cadmium	ND (0.50)		6010C		1	KJK	10/07/15 5:27	2.14	100	CJ50547
Chromium	6.41 (1.01)		6010C		1	KJK	10/07/15 5:27	2.14	100	CJ50547
Lead	21.8 (5.04)		6010C		1	KJK	10/07/15 5:27	2.14	100	CJ50547
Mercury	ND (0.035)		7471B		1	KJK	10/07/15 15:39	0.61	40	CJ50550
Selenium	ND (10.1)		6010C		2	KJK	10/07/15 20:14	2.14	100	CJ50547
Silver	ND (0.50)		6010C		1	KJK	10/07/15 5:27	2.14	100	CJ50547



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 6.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,1,1-Trichloroethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,1,2,2-Tetrachloroethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,1,2-Trichloroethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,1-Dichloroethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,1-Dichloroethene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,1-Dichloropropene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2,3-Trichlorobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2,3-Trichloropropane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2,4-Trichlorobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2,4-Trimethylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2-Dibromo-3-Chloropropane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2-Dibromoethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2-Dichlorobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2-Dichloroethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,2-Dichloropropane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,3,5-Trimethylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,3-Dichlorobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,3-Dichloropropane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,4-Dichlorobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1,4-Dioxane	ND (0.0843)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
1-Chlorohexane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
2,2-Dichloropropane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
2-Butanone	ND (0.0421)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
2-Chlorotoluene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
2-Hexanone	ND (0.0421)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
4-Chlorotoluene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
4-Isopropyltoluene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
4-Methyl-2-Pentanone	ND (0.0421)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Acetone	ND (0.0421)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Benzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Bromobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 6.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Bromodichloromethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Bromoform	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Bromomethane	ND (0.0084)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Carbon Disulfide	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Carbon Tetrachloride	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Chlorobenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Chloroethane	ND (0.0084)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Chloroform	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Chloromethane	ND (0.0084)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
cis-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
cis-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Dibromochloromethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Dibromomethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Dichlorodifluoromethane	ND (0.0084)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Diethyl Ether	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Di-isopropyl ether	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Ethyl tertiary-butyl ether	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Ethylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Hexachlorobutadiene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Isopropylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Methyl tert-Butyl Ether	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Methylene Chloride	ND (0.0211)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Naphthalene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
n-Butylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
n-Propylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
sec-Butylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Styrene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
tert-Butylbenzene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Tertiary-amyl methyl ether	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Tetrachloroethene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Tetrahydrofuran	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 6.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
trans-1,2-Dichloroethene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
trans-1,3-Dichloropropene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Trichloroethene	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Trichlorofluoromethane	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Vinyl Acetate	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Vinyl Chloride	ND (0.0084)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Xylene O	ND (0.0042)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Xylene P,M	ND (0.0084)		8260B Low		1	10/07/15 15:23	CYJ0089	CJ50739
Xylenes (Total)	ND (0.0084)		8260B Low		1	10/07/15 15:23		[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>77 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>94 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 14:11

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	199 (41.9)		8100M		1	10/10/15 6:47	CYJ0132	CJ50614
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>106 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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	10/06/15 23:42	CYJ0076	CJ50615
1,2,4-Trichlorobenzene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
1,2-Dichlorobenzene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
1,3-Dichlorobenzene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
1,4-Dichlorobenzene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,3,4,6-Tetrachlorophenol	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,4,5-Trichlorophenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,4,6-Trichlorophenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,4-Dichlorophenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,4-Dimethylphenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,4-Dinitrophenol	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,4-Dinitrotoluene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2,6-Dinitrotoluene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2-Chloronaphthalene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2-Chlorophenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2-Methylnaphthalene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2-Methylphenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2-Nitroaniline	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
2-Nitrophenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
3,3'-Dichlorobenzidine	ND (0.715)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
3+4-Methylphenol	ND (0.715)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
3-Nitroaniline	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4,6-Dinitro-2-Methylphenol	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4-Bromophenyl-phenylether	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4-Chloro-3-Methylphenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4-Chloroaniline	ND (0.715)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4-Chloro-phenyl-phenyl ether	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4-Nitroaniline	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
4-Nitrophenol	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Acenaphthene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Acenaphthylene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Acetophenone	ND (0.715)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.715)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Anthracene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Azobenzene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzo(a)anthracene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzo(a)pyrene	0.221 (0.179)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzo(b)fluoranthene	0.365 (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzo(g,h,i)perylene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzo(k)fluoranthene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzoic Acid	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Benzyl Alcohol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
bis(2-Chloroethoxy)methane	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
bis(2-Chloroethyl)ether	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
bis(2-chloroisopropyl)Ether	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
bis(2-Ethylhexyl)phthalate	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Butylbenzylphthalate	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Carbazole	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Chrysene	0.285 (0.179)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Dibenzo(a,h)Anthracene	ND (0.179)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Dibenzofuran	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Diethylphthalate	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Dimethylphthalate	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Di-n-butylphthalate	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Di-n-octylphthalate	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Fluoranthene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Fluorene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Hexachlorobenzene	ND (0.179)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Hexachlorobutadiene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Hexachlorocyclopentadiene	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Hexachloroethane	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Indeno(1,2,3-cd)Pyrene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Isophorone	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Naphthalene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 10/6/15 16:11

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	10/06/15 23:42	CYJ0076	CJ50615
N-Nitrosodimethylamine	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
N-Nitroso-Di-n-Propylamine	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
N-nitrosodiphenylamine	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Pentachlorophenol	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Phenanthrene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Phenol	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Pyrene	ND (0.357)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615
Pyridine	ND (1.79)		8270D		1	10/06/15 23:42	CYJ0076	CJ50615

	<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>71 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>62 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>67 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>68 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>65 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.04 (N/A)		9045		1	EEM	10/06/15 17:40	S.U.	CJ50632
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.4 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01RE1
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 (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,1,2,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1,4-Dioxane	ND (0.0884)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
1-Chlorohexane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
2-Butanone	ND (0.0442)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
2-Chlorotoluene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
2-Hexanone	ND (0.0442)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
4-Chlorotoluene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
4-Methyl-2-Pentanone	ND (0.0442)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Acetone	ND (0.0442)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Benzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Bromobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org 13
Date Sampled: 10/06/15 13:50
Percent Solids: 93
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510137
ESS Laboratory Sample ID: 1510137-01RE1
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 (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Bromodichloromethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Bromoform	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Bromomethane	ND (0.0088)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Carbon Disulfide	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Chlorobenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Chloroethane	ND (0.0088)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Chloroform	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Chloromethane	ND (0.0088)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Dibromochloromethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Dibromomethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Dichlorodifluoromethane	ND (0.0088)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Diethyl Ether	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Di-isopropyl ether	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Ethylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Isopropylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Methylene Chloride	ND (0.0221)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Naphthalene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
n-Butylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
n-Propylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
sec-Butylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Styrene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
tert-Butylbenzene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Tetrachloroethene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Tetrahydrofuran	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes-Raynham 20% Org 13
 Date Sampled: 10/06/15 13:50
 Percent Solids: 93
 Initial Volume: 6.1
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510137
 ESS Laboratory Sample ID: 1510137-01RE1
 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 (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Trichloroethene	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Vinyl Acetate	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Vinyl Chloride	ND (0.0088)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Xylene O	ND (0.0044)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Xylene P,M	ND (0.0088)		8260B Low		1	10/08/15 13:50	CYJ0102	CJ50825
Xylenes (Total)	ND (0.0088)		8260B Low		1	10/08/15 13:50		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	134 %	S+	70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	72 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	102 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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 CJ50547 - 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	67.0	9.43	mg/kg wet	52.30	128	43-169
Barium	140	9.43	mg/kg wet	145.0	97	80-120
Cadmium	54.7	1.89	mg/kg wet	71.60	76	62-138
Chromium	79.4	3.77	mg/kg wet	88.50	90	80-120
Lead	54.2	18.9	mg/kg wet	77.80	70	69-131
Selenium	77.5	18.9	mg/kg wet	81.10	96	80-120
Silver	115	1.89	mg/kg wet	114.0	101	80-120

LCS Dup

Arsenic	53.3	9.80	mg/kg wet	52.30	102	43-169	23	20	D+
Barium	136	9.80	mg/kg wet	145.0	94	80-120	3	20	
Cadmium	52.0	1.96	mg/kg wet	71.60	73	62-138	5	20	
Chromium	75.4	3.92	mg/kg wet	88.50	85	80-120	5	20	
Lead	51.8	19.6	mg/kg wet	77.80	67	69-131	4	20	B-
Selenium	77.6	19.6	mg/kg wet	81.10	96	80-120	0.2	20	
Silver	111	1.96	mg/kg wet	114.0	97	80-120	4	20	

Reference

Arsenic	50.2	9.43	mg/kg wet	52.30	96	43-169
Barium	138	9.43	mg/kg wet	145.0	95	69-131
Cadmium	51.3	1.89	mg/kg wet	71.60	72	62-138
Chromium	74.6	3.77	mg/kg wet	88.50	84	67-133
Lead	51.1	18.9	mg/kg wet	77.80	66	69-131
Selenium	74.9	18.9	mg/kg wet	81.10	92	64-137
Silver	113	1.89	mg/kg wet	114.0	99	68-132

Reference

Arsenic	47.0	9.26	mg/kg wet	52.30	90	43-169
Barium	181	9.26	mg/kg wet	145.0	125	69-131
Cadmium	52.1	1.85	mg/kg wet	71.60	73	62-138
Chromium	77.9	3.70	mg/kg wet	88.50	88	67-133
Lead	52.4	18.5	mg/kg wet	77.80	67	69-131
Selenium	85.2	18.5	mg/kg wet	81.10	105	64-137
Silver	135	1.85	mg/kg wet	114.0	119	68-132

Reference

Arsenic	46.5	10.0	mg/kg wet	52.30	89	43-169
Barium	143	10.0	mg/kg wet	145.0	99	69-131
Cadmium	56.1	2.00	mg/kg wet	71.60	78	62-138



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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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Total Metals

Batch CJ50547 - 3050B

Chromium	80.4	4.00	mg/kg wet	88.50		91	67-133			
Lead	56.0	20.0	mg/kg wet	77.80		72	69-131			
Selenium	79.0	20.0	mg/kg wet	81.10		97	64-137			
Silver	120	2.00	mg/kg wet	114.0		106	68-132			

Reference

Arsenic	80.0	9.43	mg/kg wet	52.30		153	43-169			
Barium	148	9.43	mg/kg wet	145.0		102	69-131			
Cadmium	52.8	1.89	mg/kg wet	71.60		74	62-138			
Chromium	78.0	3.77	mg/kg wet	88.50		88	67-133			
Lead	52.5	18.9	mg/kg wet	77.80		67	69-131			
Selenium	77.4	18.9	mg/kg wet	81.10		95	64-137			
Silver	119	1.89	mg/kg wet	114.0		104	68-132			

Batch CJ50550 - 7471A

Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	9.24	3.41	mg/kg wet	9.700		95	80-120			
LCS Dup										
Mercury	9.69	3.67	mg/kg wet	9.700		100	80-120	5	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50739 - 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							



CERTIFICATE OF ANALYSIS

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

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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 CJ50739 - 5035

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
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



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 CJ50739 - 5035

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	0.0590		mg/kg wet	0.05000		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0425		mg/kg wet	0.05000		85	70-130			
Surrogate: Dibromofluoromethane	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: Toluene-d8	0.0450		mg/kg wet	0.05000		90	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,2-Trichloroethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
1,1-Dichloroethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dibromoethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloroethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,3,5-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,3-Dichlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130			
1-Chlorohexane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
2-Butanone	0.273	0.0500	mg/kg wet	0.2500		109	70-130			
2-Chlorotoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
2-Hexanone	0.293	0.0500	mg/kg wet	0.2500		117	70-130			
4-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130			
Acetone	0.314	0.0500	mg/kg wet	0.2500		126	70-130			
Benzene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	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 CJ50739 - 5035

Bromochloromethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Bromodichloromethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130			
Bromoform	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Bromomethane	0.0488	0.0100	mg/kg wet	0.05000		98	70-130			
Carbon Disulfide	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
Carbon Tetrachloride	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
Chloroform	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Chloromethane	0.0548	0.0100	mg/kg wet	0.05000		110	70-130			
cis-1,2-Dichloroethene	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
cis-1,3-Dichloropropene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Dibromochloromethane	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
Dibromomethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Dichlorodifluoromethane	0.0514	0.0100	mg/kg wet	0.05000		103	70-130			
Diethyl Ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Di-isopropyl ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Ethyl tertiary-butyl ether	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Ethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Isopropylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0625	0.0250	mg/kg wet	0.05000		125	70-130			
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
n-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Tetrachloroethene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrahydrofuran	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
Toluene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
trans-1,2-Dichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Vinyl Acetate	0.0868	0.0050	mg/kg wet	0.05000		174	70-130			B+
Vinyl Chloride	0.0573	0.0100	mg/kg wet	0.05000		115	70-130			
Xylene O	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0952	0.0100	mg/kg wet	0.1000		95	70-130			
Xylenes (Total)	0.142	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0597		mg/kg wet	0.05000		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.0490		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0505		mg/kg wet	0.05000		101	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 CJ50739 - 5035

<i>Surrogate: Toluene-d8</i>	<i>0.0494</i>		mg/kg wet	<i>0.05000</i>		<i>99</i>	<i>70-130</i>			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
1,1,1-Trichloroethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	7	25	
1,1,2,2-Tetrachloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,2-Trichloroethane	0.0608	0.0050	mg/kg wet	0.05000		122	70-130	6	25	
1,1-Dichloroethane	0.0604	0.0050	mg/kg wet	0.05000		121	70-130	8	25	
1,1-Dichloroethene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	9	25	
1,1-Dichloropropene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
1,2,3-Trichloropropane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2,4-Trichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
1,2,4-Trimethylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,2-Dibromo-3-Chloropropane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
1,2-Dibromoethane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,2-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2-Dichloroethane	0.0615	0.0050	mg/kg wet	0.05000		123	70-130	6	25	
1,2-Dichloropropane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	8	25	
1,3,5-Trimethylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
1,3-Dichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,3-Dichloropropane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
1,4-Dioxane	1.19	0.100	mg/kg wet	1.000		119	70-130	5	20	
1-Chlorohexane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
2,2-Dichloropropane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
2-Butanone	0.304	0.0500	mg/kg wet	0.2500		122	70-130	11	25	
2-Chlorotoluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
2-Hexanone	0.317	0.0500	mg/kg wet	0.2500		127	70-130	8	25	
4-Chlorotoluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
4-Isopropyltoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
4-Methyl-2-Pentanone	0.335	0.0500	mg/kg wet	0.2500		134	70-130	10	25	B+
Acetone	0.390	0.0500	mg/kg wet	0.2500		156	70-130	22	25	B+
Benzene	0.0599	0.0050	mg/kg wet	0.05000		120	70-130	7	25	
Bromobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	6	25	
Bromodichloromethane	0.0597	0.0050	mg/kg wet	0.05000		119	70-130	6	25	
Bromoform	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Bromomethane	0.0556	0.0100	mg/kg wet	0.05000		111	70-130	13	25	
Carbon Disulfide	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	8	25	
Carbon Tetrachloride	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	8	25	
Chlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Chloroethane	0.0585	0.0100	mg/kg wet	0.05000		117	70-130	10	25	
Chloroform	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Chloromethane	0.0594	0.0100	mg/kg wet	0.05000		119	70-130	8	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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 CJ50739 - 5035

cis-1,2-Dichloroethene	0.0619	0.0050	mg/kg wet	0.05000		124	70-130	8	25	
cis-1,3-Dichloropropene	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Dibromochloromethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	4	25	
Dibromomethane	0.0556	0.0050	mg/kg wet	0.05000		111	70-130	6	25	
Dichlorodifluoromethane	0.0545	0.0100	mg/kg wet	0.05000		109	70-130	6	25	
Diethyl Ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
Di-isopropyl ether	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
Ethyl tertiary-butyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	7	25	
Ethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Hexachlorobutadiene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Isopropylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Methyl tert-Butyl Ether	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	9	25	
Methylene Chloride	0.0657	0.0250	mg/kg wet	0.05000		131	70-130	5	25	B+
Naphthalene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
n-Propylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
sec-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Styrene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
tert-Butylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Tertiary-amyl methyl ether	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	9	25	
Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Tetrahydrofuran	0.0623	0.0050	mg/kg wet	0.05000		125	70-130	10	25	
Toluene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
trans-1,2-Dichloroethene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	8	25	
trans-1,3-Dichloropropene	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
Trichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
Trichlorofluoromethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Vinyl Acetate	0.0968	0.0050	mg/kg wet	0.05000		194	70-130	11	25	B+
Vinyl Chloride	0.0614	0.0100	mg/kg wet	0.05000		123	70-130	7	25	
Xylene O	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Xylene P,M	0.0973	0.0100	mg/kg wet	0.1000		97	70-130	2	25	
Xylenes (Total)	0.146	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0620		mg/kg wet	0.05000		124	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0523		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

Batch CJ50825 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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 CJ50825 - 5035

1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
1-Chlorohexane	ND	0.0050	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0500	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0500	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet							
Acetone	ND	0.0500	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0050	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	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 CJ50825 - 5035

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	0.0631		mg/kg wet	0.05000		126	70-130			
Surrogate: 4-Bromofluorobenzene	0.0410		mg/kg wet	0.05000		82	70-130			
Surrogate: Dibromofluoromethane	0.0500		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0455		mg/kg wet	0.05000		91	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,2,2-Tetrachloroethane	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,1,2-Trichloroethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130			
1,1-Dichloroethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130			
1,1-Dichloroethene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloropropene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,2,3-Trichlorobenzene	0.0436	0.0050	mg/kg wet	0.05000		87	70-130			
1,2,3-Trichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,4-Trichlorobenzene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
1,2,4-Trimethylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dibromoethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichlorobenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0592	0.0050	mg/kg wet	0.05000		118	70-130			
1,2-Dichloropropane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,3,5-Trimethylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichlorobenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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 CJ50825 - 5035

1,3-Dichloropropane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
1,4-Dioxane	0.962	0.100	mg/kg wet	1.000		96	70-130			
1-Chlorohexane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
2,2-Dichloropropane	0.0587	0.0050	mg/kg wet	0.05000		117	70-130			
2-Butanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130			
2-Chlorotoluene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
2-Hexanone	0.284	0.0500	mg/kg wet	0.2500		114	70-130			
4-Chlorotoluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
4-Isopropyltoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Acetone	0.314	0.0500	mg/kg wet	0.2500		126	70-130			
Benzene	0.0608	0.0050	mg/kg wet	0.05000		122	70-130			
Bromobenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
Bromochloromethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130			
Bromodichloromethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130			
Bromoform	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Bromomethane	0.0545	0.0100	mg/kg wet	0.05000		109	70-130			
Carbon Disulfide	0.0604	0.0050	mg/kg wet	0.05000		121	70-130			
Carbon Tetrachloride	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Chlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0608	0.0100	mg/kg wet	0.05000		122	70-130			
Chloroform	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Chloromethane	0.0603	0.0100	mg/kg wet	0.05000		121	70-130			
cis-1,2-Dichloroethene	0.0602	0.0050	mg/kg wet	0.05000		120	70-130			
cis-1,3-Dichloropropene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Dibromochloromethane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
Dibromomethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Dichlorodifluoromethane	0.0629	0.0100	mg/kg wet	0.05000		126	70-130			
Diethyl Ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Di-isopropyl ether	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
Ethyl tertiary-butyl ether	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
Ethylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Hexachlorobutadiene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Isopropylbenzene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Methyl tert-Butyl Ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Methylene Chloride	0.0663	0.0250	mg/kg wet	0.05000		133	70-130			B+
Naphthalene	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
n-Butylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
n-Propylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Styrene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
tert-Butylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Tertiary-amyl methyl ether	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
Tetrachloroethene	0.0447	0.0050	mg/kg wet	0.05000		89	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 CJ50825 - 5035

Tetrahydrofuran	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
Toluene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130			
trans-1,2-Dichloroethene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
trans-1,3-Dichloropropene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Trichlorofluoromethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
Vinyl Acetate	0.0877	0.0050	mg/kg wet	0.05000		175	70-130			B+
Vinyl Chloride	0.0626	0.0100	mg/kg wet	0.05000		125	70-130			
Xylene O	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.0986	0.0100	mg/kg wet	0.1000		99	70-130			
Xylenes (Total)	0.147	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0638		mg/kg wet	0.05000		128	70-130			
Surrogate: 4-Bromofluorobenzene	0.0504		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0539		mg/kg wet	0.05000		108	70-130			
Surrogate: Toluene-d8	0.0496		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	6	25	
1,1,1-Trichloroethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	0.04	25	
1,1,2,2-Tetrachloroethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
1,1,2-Trichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	3	25	
1,1-Dichloroethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130	5	25	
1,1-Dichloroethene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
1,1-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	0.8	25	
1,2,3-Trichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	10	25	
1,2,3-Trichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
1,2,4-Trichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	8	25	
1,2,4-Trimethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,2-Dibromoethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
1,2-Dichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,2-Dichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	3	25	
1,2-Dichloropropane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
1,3,5-Trimethylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
1,3-Dichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
1,3-Dichloropropane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	0.7	25	
1,4-Dichlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130	12	20	
1-Chlorohexane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
2,2-Dichloropropane	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	0.8	25	
2-Butanone	0.272	0.0500	mg/kg wet	0.2500		109	70-130	3	25	
2-Chlorotoluene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
2-Hexanone	0.286	0.0500	mg/kg wet	0.2500		114	70-130	0.6	25	
4-Chlorotoluene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.4	25	
4-Isopropyltoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
4-Methyl-2-Pentanone	0.312	0.0500	mg/kg wet	0.2500		125	70-130	4	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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Quality Control Data

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

Batch CJ50825 - 5035

Acetone	0.316	0.0500	mg/kg wet	0.2500		127	70-130	0.7	25	
Benzene	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	3	25	
Bromobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	5	25	
Bromodichloromethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	2	25	
Bromoform	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	10	25	
Bromomethane	0.0536	0.0100	mg/kg wet	0.05000		107	70-130	2	25	
Carbon Disulfide	0.0586	0.0050	mg/kg wet	0.05000		117	70-130	3	25	
Carbon Tetrachloride	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Chlorobenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Chloroethane	0.0513	0.0100	mg/kg wet	0.05000		103	70-130	17	25	
Chloroform	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Chloromethane	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	7	25	
cis-1,2-Dichloroethene	0.0610	0.0050	mg/kg wet	0.05000		122	70-130	1	25	
cis-1,3-Dichloropropene	0.0552	0.0050	mg/kg wet	0.05000		110	70-130	2	25	
Dibromochloromethane	0.0599	0.0050	mg/kg wet	0.05000		120	70-130	4	25	
Dibromomethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	2	25	
Dichlorodifluoromethane	0.0610	0.0100	mg/kg wet	0.05000		122	70-130	3	25	
Diethyl Ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	0.3	25	
Di-isopropyl ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Ethyl tertiary-butyl ether	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
Ethylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Hexachlorobutadiene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
Isopropylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Methyl tert-Butyl Ether	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
Methylene Chloride	0.0613	0.0250	mg/kg wet	0.05000		123	70-130	8	25	
Naphthalene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	10	25	
n-Butylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	0.9	25	
n-Propylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
sec-Butylbenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Styrene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
Tertiary-amyl methyl ether	0.0567	0.0050	mg/kg wet	0.05000		113	70-130	2	25	
Tetrachloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Tetrahydrofuran	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
Toluene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	0.2	25	
trans-1,2-Dichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	0.7	25	
trans-1,3-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
Trichloroethene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.8	25	
Trichlorofluoromethane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130	1	25	
Vinyl Acetate	0.0844	0.0050	mg/kg wet	0.05000		169	70-130	4	25	B+
Vinyl Chloride	0.0616	0.0100	mg/kg wet	0.05000		123	70-130	2	25	
Xylene O	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Xylene P,M	0.102	0.0100	mg/kg wet	0.1000		102	70-130	3	25	
Xylenes (Total)	0.152	0.0100	mg/kg wet							



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ50825 - 5035

Surrogate: 1,2-Dichloroethane-d4	0.0590		mg/kg wet	0.05000		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0486		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0513		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0484		mg/kg wet	0.05000		97	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ50614 - 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	4.11		mg/kg wet	5.000		82	40-140			
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LCS

Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		101	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		94	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		94	40-140			

Surrogate: O-Terphenyl	4.66		mg/kg wet	5.000		93	40-140			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	10	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140	13	25	



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8100M Total Petroleum Hydrocarbons

Batch CJ50614 - 3546

Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		73	40-140	13	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140	13	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		90	40-140	12	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140	13	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	10	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	11	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		88	40-140	14	25	
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		83	40-140	12	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140	17	25	
Total Petroleum Hydrocarbons	30.4	37.5	mg/kg wet	35.00		87	40-140	13	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	10	25	

Surrogate: O-Terphenyl 4.00 mg/kg wet 5.000 80 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ50615 - 3546

Blank

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



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8270D Semi-Volatile Organic Compounds

Batch CJ50615 - 3546

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



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8270D Semi-Volatile Organic Compounds

Batch CJ50615 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.61		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	4.22		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Fluorobiphenyl	2.67		mg/kg wet	3.333		80	30-130			
Surrogate: 2-Fluorophenol	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: Nitrobenzene-d5	3.00		mg/kg wet	3.333		90	30-130			
Surrogate: Phenol-d6	4.64		mg/kg wet	5.000		93	30-130			
Surrogate: p-Terphenyl-d14	2.91		mg/kg wet	3.333		87	30-130			

LCS

1,1-Biphenyl	2.72	0.333	mg/kg wet	3.333		82	40-140			
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
1,2-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,3-Dichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140			
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2,3,4,6-Tetrachlorophenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130			
2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130			
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dimethylphenol	2.90	0.333	mg/kg wet	3.333		87	30-130			
2,4-Dinitrophenol	2.74	1.67	mg/kg wet	3.333		82	30-130			
2,4-Dinitrotoluene	3.21	0.333	mg/kg wet	3.333		96	40-140			
2,6-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140			
2-Chlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.47	0.333	mg/kg wet	3.333		74	40-140			
2-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130			
2-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
3,3'-Dichlorobenzidine	2.03	0.667	mg/kg wet	3.333		61	40-140			
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130			
3-Nitroaniline	3.22	0.333	mg/kg wet	3.333		97	40-140			
4,6-Dinitro-2-Methylphenol	2.94	1.67	mg/kg wet	3.333		88	30-130			
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140			
4-Chloro-3-Methylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130			
4-Chloroaniline	2.34	0.667	mg/kg wet	3.333		70	40-140			
4-Chloro-phenyl-phenyl ether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Nitroaniline	3.48	0.333	mg/kg wet	3.333		104	40-140			
4-Nitrophenol	3.00	1.67	mg/kg wet	3.333		90	30-130			
Acenaphthene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Acenaphthylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Acetophenone	2.82	0.667	mg/kg wet	3.333		85	40-140			
Aniline	2.74	0.667	mg/kg wet	3.333		82	40-140			
Anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Azobenzene	3.22	0.333	mg/kg wet	3.333		97	40-140			



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8270D Semi-Volatile Organic Compounds

Batch CJ50615 - 3546

Benzo(a)anthracene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)pyrene	3.11	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.52	1.67	mg/kg wet	3.333		76	40-140			
Benzyl Alcohol	2.86	0.333	mg/kg wet	3.333		86	40-140			
bis(2-Chloroethoxy)methane	2.79	0.333	mg/kg wet	3.333		84	40-140			
bis(2-Chloroethyl)ether	3.12	0.333	mg/kg wet	3.333		93	40-140			
bis(2-chloroisopropyl)Ether	2.55	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Butylbenzylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140			
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140			
Chrysene	2.92	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.05	0.167	mg/kg wet	3.333		91	40-140			
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140			
Diethylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Dimethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Di-n-butylphthalate	3.12	0.333	mg/kg wet	3.333		94	40-140			
Di-n-octylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorobenzene	2.59	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorocyclopentadiene	2.36	1.67	mg/kg wet	3.333		71	40-140			
Hexachloroethane	2.46	0.333	mg/kg wet	3.333		74	40-140			
Indeno(1,2,3-cd)Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Isophorone	2.68	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140			
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.70	0.333	mg/kg wet	3.333		81	40-140			
N-nitrosodiphenylamine	3.07	0.333	mg/kg wet	3.333		92	40-140			
Pentachlorophenol	2.93	1.67	mg/kg wet	3.333		88	30-130			
Phenanthrene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Phenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
Pyrene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	1.45	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.12		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Fluorobiphenyl	2.69		mg/kg wet	3.333		81	30-130			
Surrogate: 2-Fluorophenol	4.33		mg/kg wet	5.000		87	30-130			
Surrogate: Nitrobenzene-d5	2.85		mg/kg wet	3.333		85	30-130			
Surrogate: Phenol-d6	4.46		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	2.71		mg/kg wet	3.333		81	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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 CJ50615 - 3546

LCS Dup

1,1-Biphenyl	2.71	0.333	mg/kg wet	3.333		81	40-140	0.5	30	
1,2,4-Trichlorobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
1,2-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.5	30	
1,3-Dichlorobenzene	2.50	0.333	mg/kg wet	3.333		75	40-140	0.8	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	0.3	30	
2,3,4,6-Tetrachlorophenol	2.44	1.67	mg/kg wet	3.333		73	30-130	1	30	
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		89	30-130	0.08	30	
2,4,6-Trichlorophenol	2.99	0.333	mg/kg wet	3.333		90	30-130	0.03	30	
2,4-Dichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	0.3	30	
2,4-Dimethylphenol	2.89	0.333	mg/kg wet	3.333		87	30-130	0.3	30	
2,4-Dinitrophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	4	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	1	30	
2,6-Dinitrotoluene	2.91	0.333	mg/kg wet	3.333		87	40-140	2	30	
2-Chloronaphthalene	2.45	0.333	mg/kg wet	3.333		74	40-140	1	30	
2-Chlorophenol	2.56	0.333	mg/kg wet	3.333		77	30-130	2	30	
2-Methylnaphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
2-Methylphenol	2.66	0.333	mg/kg wet	3.333		80	30-130	2	30	
2-Nitroaniline	2.65	0.333	mg/kg wet	3.333		79	40-140	1	30	
2-Nitrophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	0.5	30	
3,3'-Dichlorobenzidine	2.10	0.667	mg/kg wet	3.333		63	40-140	3	30	
3+4-Methylphenol	5.43	0.667	mg/kg wet	6.667		81	30-130	3	30	
3-Nitroaniline	3.24	0.333	mg/kg wet	3.333		97	40-140	0.8	30	
4,6-Dinitro-2-Methylphenol	2.98	1.67	mg/kg wet	3.333		89	30-130	1	30	
4-Bromophenyl-phenylether	2.98	0.333	mg/kg wet	3.333		89	40-140	3	30	
4-Chloro-3-Methylphenol	2.85	0.333	mg/kg wet	3.333		85	30-130	1	30	
4-Chloroaniline	2.39	0.667	mg/kg wet	3.333		72	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.83	0.333	mg/kg wet	3.333		85	40-140	1	30	
4-Nitroaniline	3.54	0.333	mg/kg wet	3.333		106	40-140	2	30	
4-Nitrophenol	3.02	1.67	mg/kg wet	3.333		90	30-130	0.4	30	
Acenaphthene	2.78	0.333	mg/kg wet	3.333		83	40-140	0.9	30	
Acenaphthylene	2.67	0.333	mg/kg wet	3.333		80	40-140	0.9	30	
Acetophenone	2.77	0.667	mg/kg wet	3.333		83	40-140	2	30	
Aniline	2.70	0.667	mg/kg wet	3.333		81	40-140	1	30	
Anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140	2	30	
Azobenzene	3.29	0.333	mg/kg wet	3.333		99	40-140	2	30	
Benzo(a)anthracene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Benzo(a)pyrene	3.08	0.167	mg/kg wet	3.333		92	40-140	0.9	30	
Benzo(b)fluoranthene	3.42	0.333	mg/kg wet	3.333		103	40-140	13	30	
Benzo(g,h,i)perylene	2.99	0.333	mg/kg wet	3.333		90	40-140	1	30	
Benzo(k)fluoranthene	2.81	0.333	mg/kg wet	3.333		84	40-140	9	30	
Benzoic Acid	2.27	1.67	mg/kg wet	3.333		68	40-140	10	30	
Benzyl Alcohol	2.77	0.333	mg/kg wet	3.333		83	40-140	3	30	
bis(2-Chloroethoxy)methane	2.80	0.333	mg/kg wet	3.333		84	40-140	0.5	30	
bis(2-Chloroethyl)ether	3.09	0.333	mg/kg wet	3.333		93	40-140	0.8	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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 CJ50615 - 3546

bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	0.6	30	
bis(2-Ethylhexyl)phthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	5	30	
Butylbenzylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	5	30	
Carbazole	3.19	0.333	mg/kg wet	3.333		96	40-140	0.2	30	
Chrysene	2.94	0.167	mg/kg wet	3.333		88	40-140	0.7	30	
Dibenzo(a,h)Anthracene	3.11	0.167	mg/kg wet	3.333		93	40-140	2	30	
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		81	40-140	0.8	30	
Diethylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	4	30	
Dimethylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140	1	30	
Di-n-butylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140	3	30	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	6	30	
Fluoranthene	2.95	0.333	mg/kg wet	3.333		88	40-140	0.5	30	
Fluorene	2.90	0.333	mg/kg wet	3.333		87	40-140	0.2	30	
Hexachlorobenzene	2.65	0.167	mg/kg wet	3.333		80	40-140	2	30	
Hexachlorobutadiene	2.39	0.333	mg/kg wet	3.333		72	40-140	1	30	
Hexachlorocyclopentadiene	2.45	1.67	mg/kg wet	3.333		73	40-140	4	30	
Hexachloroethane	2.48	0.333	mg/kg wet	3.333		74	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	3.06	0.333	mg/kg wet	3.333		92	40-140	2	30	
Isophorone	2.66	0.333	mg/kg wet	3.333		80	40-140	0.6	30	
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	0.2	30	
Nitrobenzene	2.72	0.333	mg/kg wet	3.333		82	40-140	0.7	30	
N-Nitrosodimethylamine	1.72	0.333	mg/kg wet	3.333		52	40-140	0	30	
N-Nitroso-Di-n-Propylamine	2.68	0.333	mg/kg wet	3.333		80	40-140	0.8	30	
N-nitrosodiphenylamine	3.14	0.333	mg/kg wet	3.333		94	40-140	2	30	
Pentachlorophenol	3.01	1.67	mg/kg wet	3.333		90	30-130	3	30	
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140	1	30	
Phenol	2.57	0.333	mg/kg wet	3.333		77	30-130	4	30	
Pyrene	2.92	0.333	mg/kg wet	3.333		88	40-140	2	30	
Pyridine	1.30	1.67	mg/kg wet	3.333		39	40-140	11	30	B-
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	4.11		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.13		mg/kg wet	5.000		83	30-130			
Surrogate: Nitrobenzene-d5	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.25		mg/kg wet	5.000		85	30-130			
Surrogate: p-Terphenyl-d14	2.89		mg/kg wet	3.333		87	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

Notes and Definitions

- Z-10 Soil pH measured in water at 20.4 °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).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- B- Blank Spike recovery is below lower control limit (B-).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510137

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: 15100137
 Date Project Due: 10/9/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|---|-------------------------------|---|---|
| 1. Air Bill Manifest Present?
Air No.: | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 5. Is a cooler present?
<u>Cooler Temp: 6.1</u>
<u>Iced With: Ice</u> | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 8. Does the COC match the sample? | <input type="checkbox"/> Yes | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | 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 @ 1455 JK 10/6/15

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: 10/6/15 1449
 Date/Time: 10/6/15 1450

CHAIN OF CUSTODY

ESS Lab # 1510137

Turn Time <u>3</u> Days Regulatory State <u>Rhode Island</u> 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	Reporting Limits RI DEM RDEC
Project # <u>74-15-0002.134</u> Project Name <u>Textron Providence</u>	Data Checker <input checked="" type="checkbox"/> Electronic Deliverables <input type="checkbox"/> Other (Please Specify →)
Address <u>500 Harrison Avenue, Suite 4R</u> Zip Code <u>02118</u> PO # _____	PH: Corrosivity 9045
Company Name <u>Charter Environmental</u> Contact Person <u>Paul J. Leofanti, Jr.</u> City <u>Boston</u> State <u>MA</u>	Email Address <u>pleofanti@charter.us</u> Sample ID <u>Lopes - Raynham 20% Org (13)</u>

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Container Type	AG-Amber Glass	B-BOD Bottle	C-Cubittainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	VOC	VOC Low Level	SVOC	RCRA 8	TPH			
1	10-6-15	13:50	Grab	Soil	1-100 mL	2-2.5 gal	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	1	1	1	1	1		
Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAce, NaOH, 9-NH4Cl, 10-Other*													1	1	1	2	1				
Container Type: AC-Air Cassette, AG-Amber Glass, B-BOD Bottle, C-Cubittainer, J-Jar, O-Other, P-Poly, S-Sterile, V-Vial													J	J	V	V	J	J	J	J	J
Container Volume: 1-100 mL, 2-2.5 gal, 3-250 mL, 4-300 mL, 5-500 mL, 6-1L, 7-VOA, 8-2 oz, 9-4 oz, 10-8 oz, 11-Other*													10	10	7	7	10	10	10	10	10
Number of Containers:													1	1	1	2	1				

Sampled by: G. Gilbert-Thielsch

Laboratory Use Only

Cooler Present: Yes Drop Off Pickup

Seals Intact: _____

Cooler Temperature: 6.1°K Technician Hours → _____

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

Received by: (Signature, Date & Time) <u>MPK 10/6/15 1405</u>	Requisitioned by: (Signature, Date & Time) <u>MPK 10/6/15 1440</u>
Received by: (Signature, Date & Time)	Requisitioned 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: 1510371

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

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 3:29 pm, Oct 19, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

SAMPLE RECEIPT

The following samples were received on October 14, 2015 for the analyses specified on the enclosed Chain of Custody Record.

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

Low Level VOA vials were frozen by ESS Laboratory on October 14, 2015 at 18:25.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510371-01	Lopes-Raynham 20% Org A	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510371-01 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (21% @ 50-200%), Chlorobenzene-d5 (31% @ 50-200%), Pentafluorobenzene (35% @ 50-200%)
- 1510371-01RE1 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (46% @ 50-200%)
- CJ51539-BS1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (162% @ 70-130%)
- CJ51539-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Acetone (132% @ 70-130%), Methylene Chloride (136% @ 70-130%), Vinyl Acetate (192% @ 70-130%)
- CJ51648-BS1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (170% @ 70-130%)
- CJ51648-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (177% @ 70-130%)

8270D Semi-Volatile Organic Compounds

- CYJ0168-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Benzoic Acid (103% @ 80-120%)
- CYJ0168-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Pyridine (25% @ 20%)
- CYJ0180-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (65% @ 80-120%)
- CYJ0180-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (28% @ 20%), Benzoic Acid (35% @ 20%), Di-n-octylphthalate (27% @ 20%), N-Nitrosodimethylamine (41% @ 20%), Pentachlorophenol (31% @ 20%), Pyrene (26% @ 20%), Pyridine (34% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.07 (2.59)		6010C		1	KJK	10/16/15 10:29	2.21	100	CJ51452
Barium	26.2 (2.59)		6010C		1	KJK	10/16/15 10:29	2.21	100	CJ51452
Cadmium	ND (0.52)		6010C		1	KJK	10/16/15 10:29	2.21	100	CJ51452
Chromium	7.84 (1.03)		6010C		1	KJK	10/16/15 10:29	2.21	100	CJ51452
Lead	25.5 (5.17)		6010C		1	KJK	10/16/15 21:46	2.21	100	CJ51452
Mercury	0.039 (0.036)		7471B		1	BJV	10/16/15 13:19	0.62	40	CJ51630
Selenium	ND (5.17)		6010C		1	KJK	10/16/15 10:29	2.21	100	CJ51452
Silver	ND (0.52)		6010C		1	KJK	10/16/15 10:29	2.21	100	CJ51452



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 4.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
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 (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,1,1-Trichloroethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,1,2,2-Tetrachloroethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,1,2-Trichloroethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,1-Dichloroethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,1-Dichloroethene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,1-Dichloropropene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2,3-Trichlorobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2,3-Trichloropropane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2,4-Trichlorobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2,4-Trimethylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2-Dibromo-3-Chloropropane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2-Dibromoethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2-Dichlorobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2-Dichloroethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,2-Dichloropropane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,3,5-Trimethylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,3-Dichlorobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,3-Dichloropropane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,4-Dichlorobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1,4-Dioxane	ND (0.127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
1-Chlorohexane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
2,2-Dichloropropane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
2-Butanone	ND (0.0635)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
2-Chlorotoluene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
2-Hexanone	ND (0.0635)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
4-Chlorotoluene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
4-Isopropyltoluene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
4-Methyl-2-Pentanone	ND (0.0635)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Acetone	ND (0.0635)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Benzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Bromobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 4.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
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 (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Bromodichloromethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Bromoform	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Bromomethane	ND (0.0127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Carbon Disulfide	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Carbon Tetrachloride	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Chlorobenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Chloroethane	ND (0.0127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Chloroform	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Chloromethane	ND (0.0127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
cis-1,2-Dichloroethene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
cis-1,3-Dichloropropene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Dibromochloromethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Dibromomethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Dichlorodifluoromethane	ND (0.0127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Diethyl Ether	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Di-isopropyl ether	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Ethyl tertiary-butyl ether	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Ethylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Hexachlorobutadiene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Isopropylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Methyl tert-Butyl Ether	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Methylene Chloride	ND (0.0317)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Naphthalene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
n-Butylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
n-Propylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
sec-Butylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Styrene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
tert-Butylbenzene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Tertiary-amyl methyl ether	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Tetrachloroethene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Tetrahydrofuran	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 4.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
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 (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
trans-1,2-Dichloroethene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
trans-1,3-Dichloropropene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Trichloroethene	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Trichlorofluoromethane	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Vinyl Acetate	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Vinyl Chloride	ND (0.0127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Xylene O	ND (0.0063)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Xylene P,M	ND (0.0127)		8260B Low		1	10/15/15 14:33	CYJ0187	CJ51539
Xylenes (Total)	ND (0.0127)		8260B Low		1	10/15/15 14:33		[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>77 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</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
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/15/15 11:50

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	199 (43.3)		8100M		1	10/15/15 16:22	CYJ0201	CJ51413
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		86 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
1,2,4-Trichlorobenzene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
1,2-Dichlorobenzene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
1,3-Dichlorobenzene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
1,4-Dichlorobenzene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,3,4,6-Tetrachlorophenol	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,4,5-Trichlorophenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,4,6-Trichlorophenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,4-Dichlorophenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,4-Dimethylphenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,4-Dinitrophenol	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,4-Dinitrotoluene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2,6-Dinitrotoluene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2-Chloronaphthalene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2-Chlorophenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2-Methylnaphthalene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2-Methylphenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2-Nitroaniline	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
2-Nitrophenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
3,3'-Dichlorobenzidine	ND (0.789)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
3+4-Methylphenol	ND (0.789)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
3-Nitroaniline	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4,6-Dinitro-2-Methylphenol	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4-Bromophenyl-phenylether	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4-Chloro-3-Methylphenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4-Chloroaniline	ND (0.789)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4-Chloro-phenyl-phenyl ether	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4-Nitroaniline	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
4-Nitrophenol	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Acenaphthene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Acenaphthylene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Acetophenone	ND (0.789)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.789)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Anthracene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Azobenzene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzo(a)anthracene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzo(a)pyrene	0.270 (0.197)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzo(b)fluoranthene	0.404 (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzo(g,h,i)perylene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzo(k)fluoranthene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzoic Acid	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Benzyl Alcohol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
bis(2-Chloroethoxy)methane	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
bis(2-Chloroethyl)ether	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
bis(2-chloroisopropyl)Ether	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
bis(2-Ethylhexyl)phthalate	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Butylbenzylphthalate	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Carbazole	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Chrysene	0.337 (0.197)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Dibenzo(a,h)Anthracene	ND (0.197)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Dibenzofuran	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Diethylphthalate	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Dimethylphthalate	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Di-n-butylphthalate	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Di-n-octylphthalate	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Fluoranthene	0.545 (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Fluorene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Hexachlorobenzene	ND (0.197)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Hexachlorobutadiene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Hexachlorocyclopentadiene	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Hexachloroethane	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Indeno(1,2,3-cd)Pyrene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Isophorone	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Naphthalene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
N-Nitrosodimethylamine	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
N-Nitroso-Di-n-Propylamine	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
N-nitrosodiphenylamine	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Pentachlorophenol	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Phenanthrene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Phenol	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Pyrene	ND (0.394)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414
Pyridine	ND (1.97)		8270D		1	10/15/15 14:51	CYJ0180	CJ51414

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>42 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>64 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>46 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>55 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>39 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>46 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>47 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>60 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.33 (N/A)		9045		1	JLK	10/15/15 9:45	S.U.	CJ51504
Corrosivity (pH) Sample Temp	Soil pH measured in water at 18.8 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01RE1
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 (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,1,1-Trichloroethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,1,2,2-Tetrachloroethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,1,2-Trichloroethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,1-Dichloroethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,1-Dichloroethene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,1-Dichloropropene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2,3-Trichlorobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2,3-Trichloropropane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2,4-Trichlorobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2,4-Trimethylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2-Dibromo-3-Chloropropane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2-Dibromoethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2-Dichlorobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2-Dichloroethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,2-Dichloropropane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,3,5-Trimethylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,3-Dichlorobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,3-Dichloropropane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,4-Dichlorobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1,4-Dioxane	ND (0.114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
1-Chlorohexane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
2,2-Dichloropropane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
2-Butanone	ND (0.0571)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
2-Chlorotoluene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
2-Hexanone	ND (0.0571)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
4-Chlorotoluene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
4-Isopropyltoluene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
4-Methyl-2-Pentanone	ND (0.0571)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Acetone	ND (0.0571)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Benzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Bromobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01RE1
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 (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Bromodichloromethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Bromoform	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Bromomethane	ND (0.0114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Carbon Disulfide	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Carbon Tetrachloride	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Chlorobenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Chloroethane	ND (0.0114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Chloroform	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Chloromethane	ND (0.0114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
cis-1,2-Dichloroethene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
cis-1,3-Dichloropropene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Dibromochloromethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Dibromomethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Dichlorodifluoromethane	ND (0.0114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Diethyl Ether	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Di-isopropyl ether	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Ethyl tertiary-butyl ether	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Ethylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Hexachlorobutadiene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Isopropylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Methyl tert-Butyl Ether	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Methylene Chloride	ND (0.0286)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Naphthalene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
n-Butylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
n-Propylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
sec-Butylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Styrene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
tert-Butylbenzene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Tertiary-amyl methyl ether	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Tetrachloroethene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Tetrahydrofuran	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org A
Date Sampled: 10/14/15 16:20
Percent Solids: 88
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510371
ESS Laboratory Sample ID: 1510371-01RE1
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 (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
trans-1,2-Dichloroethene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
trans-1,3-Dichloropropene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Trichloroethene	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Trichlorofluoromethane	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Vinyl Acetate	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Vinyl Chloride	ND (0.0114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Xylene O	ND (0.0057)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Xylene P,M	ND (0.0114)		8260B Low		1	10/16/15 13:34	CYJ0209	CJ51648
Xylenes (Total)	ND (0.0114)		8260B Low		1	10/16/15 13:34		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>111 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51452 - 3005A

Blank

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

LCS

Arsenic	114	9.80	mg/kg wet	139.0	82	80-120
Barium	183	9.80	mg/kg wet	203.0	90	80-120
Cadmium	77.1	1.96	mg/kg wet	96.00	80	80-120
Chromium	112	3.92	mg/kg wet	136.0	82	80-120
Lead	114	19.6	mg/kg wet	133.0	86	80-120
Selenium	140	19.6	mg/kg wet	177.0	79	77-123
Silver	33.6	1.96	mg/kg wet	40.20	83	80-120

LCS Dup

Arsenic	123	8.77	mg/kg wet	139.0	88	80-120	7	20
Barium	182	8.77	mg/kg wet	203.0	90	80-120	0.4	20
Cadmium	81.7	1.75	mg/kg wet	96.00	85	80-120	6	20
Chromium	119	3.51	mg/kg wet	136.0	88	80-120	7	20
Lead	124	17.5	mg/kg wet	133.0	93	80-120	8	20
Selenium	149	17.5	mg/kg wet	177.0	84	77-123	6	20
Silver	34.9	1.75	mg/kg wet	40.20	87	80-120	4	20

Batch CJ51630 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	14.5	1.80	mg/kg wet	12.90	112	80-120
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LCS Dup

Mercury	14.7	1.77	mg/kg wet	12.90	114	80-120	2	20
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Reference

Mercury	1.03	0.183	mg/kg wet	1.000	103	70-130
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51539 - 5035

Blank

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

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 CJ51539 - 5035

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

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 CJ51539 - 5035

Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0578		mg/kg wet	0.05000		116	70-130			
Surrogate: 4-Bromofluorobenzene	0.0468		mg/kg wet	0.05000		94	70-130			
Surrogate: Dibromofluoromethane	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0538		mg/kg wet	0.05000		108	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,1-Trichloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2,2-Tetrachloroethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,1,2-Trichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,1-Dichloroethane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromo-3-Chloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromoethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloroethane	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,3,5-Trimethylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

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 CJ51539 - 5035

1,3-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichloropropane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,4-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,4-Dioxane	1.05	0.100	mg/kg wet	1.000		105	70-130			
1-Chlorohexane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
2-Butanone	0.253	0.0500	mg/kg wet	0.2500		101	70-130			
2-Chlorotoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
2-Hexanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130			
4-Chlorotoluene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
4-Isopropyltoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.280	0.0500	mg/kg wet	0.2500		112	70-130			
Acetone	0.293	0.0500	mg/kg wet	0.2500		117	70-130			
Benzene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
Bromobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromochloromethane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Bromodichloromethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
Bromoform	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Bromomethane	0.0532	0.0100	mg/kg wet	0.05000		106	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Chlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Chloroethane	0.0489	0.0100	mg/kg wet	0.05000		98	70-130			
Chloroform	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Chloromethane	0.0539	0.0100	mg/kg wet	0.05000		108	70-130			
cis-1,2-Dichloroethene	0.0583	0.0050	mg/kg wet	0.05000		117	70-130			
cis-1,3-Dichloropropene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Dibromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
Dibromomethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Dichlorodifluoromethane	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Di-isopropyl ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Ethyl tertiary-butyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Hexachlorobutadiene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Isopropylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Methylene Chloride	0.0619	0.0250	mg/kg wet	0.05000		124	70-130			
Naphthalene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
n-Butylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
sec-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

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 CJ51539 - 5035

Tetrachloroethene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,2-Dichloroethene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,3-Dichloropropene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Trichlorofluoromethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
Vinyl Acetate	0.0808	0.0050	mg/kg wet	0.05000		162	70-130			B+
Vinyl Chloride	0.0590	0.0100	mg/kg wet	0.05000		118	70-130			
Xylene O	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130			
Xylenes (Total)	0.149	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0557		mg/kg wet	0.05000		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0482		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0499		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0489		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
1,1,1-Trichloroethane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	8	25	
1,1,2,2-Tetrachloroethane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	12	25	
1,1,2-Trichloroethane	0.0614	0.0050	mg/kg wet	0.05000		123	70-130	10	25	
1,1-Dichloroethane	0.0615	0.0050	mg/kg wet	0.05000		123	70-130	11	25	
1,1-Dichloroethene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	9	25	
1,1-Dichloropropene	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2,3-Trichloropropane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	12	25	
1,2,4-Trichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
1,2,4-Trimethylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,2-Dibromo-3-Chloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	10	25	
1,2-Dibromoethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
1,2-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,2-Dichloroethane	0.0625	0.0050	mg/kg wet	0.05000		125	70-130	11	25	
1,2-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
1,3,5-Trimethylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
1,3-Dichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
1,3-Dichloropropane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
1,4-Dichlorobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130	8	20	
1-Chlorohexane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
2,2-Dichloropropane	0.0620	0.0050	mg/kg wet	0.05000		124	70-130	9	25	
2-Butanone	0.290	0.0500	mg/kg wet	0.2500		116	70-130	14	25	
2-Chlorotoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
2-Hexanone	0.297	0.0500	mg/kg wet	0.2500		119	70-130	11	25	
4-Chlorotoluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
4-Isopropyltoluene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	6	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

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 CJ51539 - 5035

4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	13	25	
Acetone	0.329	0.0500	mg/kg wet	0.2500		132	70-130	11	25	B+
Benzene	0.0623	0.0050	mg/kg wet	0.05000		125	70-130	8	25	
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	4	25	
Bromodichloromethane	0.0611	0.0050	mg/kg wet	0.05000		122	70-130	9	25	
Bromoform	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	0.1	25	
Bromomethane	0.0564	0.0100	mg/kg wet	0.05000		113	70-130	6	25	
Carbon Disulfide	0.0619	0.0050	mg/kg wet	0.05000		124	70-130	10	25	
Carbon Tetrachloride	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
Chlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Chloroethane	0.0565	0.0100	mg/kg wet	0.05000		113	70-130	14	25	
Chloroform	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
Chloromethane	0.0620	0.0100	mg/kg wet	0.05000		124	70-130	14	25	
cis-1,2-Dichloroethene	0.0626	0.0050	mg/kg wet	0.05000		125	70-130	7	25	
cis-1,3-Dichloropropene	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	10	25	
Dibromochloromethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130	0.3	25	
Dibromomethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	9	25	
Dichlorodifluoromethane	0.0609	0.0100	mg/kg wet	0.05000		122	70-130	9	25	
Diethyl Ether	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	12	25	
Di-isopropyl ether	0.0552	0.0050	mg/kg wet	0.05000		110	70-130	14	25	
Ethyl tertiary-butyl ether	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	12	25	
Ethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	3	25	
Hexachlorobutadiene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	0.4	25	
Isopropylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Methyl tert-Butyl Ether	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	11	25	
Methylene Chloride	0.0679	0.0250	mg/kg wet	0.05000		136	70-130	9	25	B+
Naphthalene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
n-Butylbenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
n-Propylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
sec-Butylbenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
Styrene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.5	25	
tert-Butylbenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
Tertiary-amyl methyl ether	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	10	25	
Tetrachloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
Tetrahydrofuran	0.0592	0.0050	mg/kg wet	0.05000		118	70-130	14	25	
Toluene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	6	25	
trans-1,2-Dichloroethene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	9	25	
trans-1,3-Dichloropropene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	10	25	
Trichloroethene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
Trichlorofluoromethane	0.0600	0.0050	mg/kg wet	0.05000		120	70-130	9	25	
Vinyl Acetate	0.0959	0.0050	mg/kg wet	0.05000		192	70-130	17	25	B+
Vinyl Chloride	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	12	25	
Xylene O	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

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 CJ51539 - [CALC]

Xylenes (Total)	0.152	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0626		mg/kg wet	0.05000		125	70-130			
Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0528		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

Batch CJ51648 - 5035

Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51648 - 5035

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							
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							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0535</i>		mg/kg wet	<i>0.05000</i>		<i>107</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0487</i>		mg/kg wet	<i>0.05000</i>		<i>97</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0484</i>		mg/kg wet	<i>0.05000</i>		<i>97</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0528</i>		mg/kg wet	<i>0.05000</i>		<i>106</i>	<i>70-130</i>			

LCS

1,1,1,2-Tetrachloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,2-Trichloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51648 - 5035

1,1-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloropropene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trimethylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichloropropane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichlorobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichloropropane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dioxane	0.921	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130			
2-Chlorotoluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
4-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
4-Isopropyltoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
Acetone	0.285	0.0500	mg/kg wet	0.2500		114	70-130			
Benzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Bromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromodichloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromomethane	0.0510	0.0100	mg/kg wet	0.05000		102	70-130			
Carbon Disulfide	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Carbon Tetrachloride	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Chloroethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130			
Chloroform	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Chloromethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
cis-1,2-Dichloroethene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
cis-1,3-Dichloropropene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromochloromethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
Dibromomethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Diethyl Ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51648 - 5035

Ethyl tertiary-butyl ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0569	0.0250	mg/kg wet	0.05000		114	70-130			
Naphthalene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
n-Propylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Styrene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Toluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Trichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0852	0.0050	mg/kg wet	0.05000		170	70-130			B+
Vinyl Chloride	0.0446	0.0100	mg/kg wet	0.05000		89	70-130			
Xylene O	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0495		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,1-Trichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
1,1,2-Trichloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	3	25	
1,1-Dichloroethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
1,1-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
1,1-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
1,2,3-Trichlorobenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
1,2,3-Trichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
1,2,4-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,2-Dibromoethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
1,2-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	8	25	
1,2-Dichloroethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	4	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51648 - 5035

1,2-Dichloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,3,5-Trimethylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	8	25	
1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130	10	20	
1-Chlorohexane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
2,2-Dichloropropane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	6	25	
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130	3	25	
2-Chlorotoluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
2-Hexanone	0.279	0.0500	mg/kg wet	0.2500		111	70-130	3	25	
4-Chlorotoluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
4-Methyl-2-Pentanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130	3	25	
Acetone	0.296	0.0500	mg/kg wet	0.2500		119	70-130	4	25	
Benzene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
Bromobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	4	25	
Bromodichloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Bromoform	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Bromomethane	0.0519	0.0100	mg/kg wet	0.05000		104	70-130	2	25	
Carbon Disulfide	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	6	25	
Carbon Tetrachloride	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Chlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Chloroethane	0.0403	0.0100	mg/kg wet	0.05000		81	70-130	18	25	
Chloroform	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Chloromethane	0.0558	0.0100	mg/kg wet	0.05000		112	70-130	7	25	
cis-1,2-Dichloroethene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
cis-1,3-Dichloropropene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	5	25	
Dibromochloromethane	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	5	25	
Dibromomethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
Diethyl Ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
Di-isopropyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Ethyl tertiary-butyl ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	6	25	
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Hexachlorobutadiene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
Isopropylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
Methyl tert-Butyl Ether	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	5	25	
Methylene Chloride	0.0605	0.0250	mg/kg wet	0.05000		121	70-130	6	25	
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
n-Propylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
sec-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51648 - 5035

tert-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Tertiary-amyl methyl ether	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrahydrofuran	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	2	25	
Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
trans-1,2-Dichloroethene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
trans-1,3-Dichloropropene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Trichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Trichlorofluoromethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
Vinyl Acetate	0.0886	0.0050	mg/kg wet	0.05000		177	70-130	4	25	B+
Vinyl Chloride	0.0464	0.0100	mg/kg wet	0.05000		93	70-130	4	25	
Xylene O	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Xylene P,M	0.0986	0.0100	mg/kg wet	0.1000		99	70-130	5	25	
Xylenes (Total)	0.147	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0502</i>		mg/kg wet	<i>0.05000</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0492</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0494</i>		mg/kg wet	<i>0.05000</i>		<i>99</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0488</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			

8100M Total Petroleum Hydrocarbons

Batch CJ51413 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
<i>Surrogate: O-Terphenyl</i>	<i>4.59</i>		mg/kg wet	<i>5.000</i>		<i>92</i>	<i>40-140</i>			

LCS

Decane (C10)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		96	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51413 - 3546

Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Total Petroleum Hydrocarbons	30.2	37.5	mg/kg wet	35.00		86	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		91	40-140			

Surrogate: O-Terphenyl

4.80 mg/kg wet 5.000 96 40-140

LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500		89	40-140	0.5	25	
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140	2	25	
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		98	40-140	2	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140	1	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140	3	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140	2	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140	0.8	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		94	40-140	1	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		99	40-140	2	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140	2	25	
Total Petroleum Hydrocarbons	30.6	37.5	mg/kg wet	35.00		87	40-140	1	25	
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	

Surrogate: O-Terphenyl

4.84 mg/kg wet 5.000 97 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

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							
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							



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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

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	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.58		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Chlorophenol-d4	2.98		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	2.04		mg/kg wet	3.333		61	30-130			
Surrogate: 2-Fluorophenol	2.72		mg/kg wet	5.000		54	30-130			
Surrogate: Nitrobenzene-d5	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: Phenol-d6	2.99		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.29		mg/kg wet	3.333		69	30-130			

LCS

1,1-Biphenyl	2.18	0.333	mg/kg wet	3.333		66	40-140			
1,2,4-Trichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
1,4-Dichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.47	1.67	mg/kg wet	3.333		74	30-130			
2,4,5-Trichlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
2,4,6-Trichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dimethylphenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dinitrophenol	2.20	1.67	mg/kg wet	3.333		66	30-130			
2,4-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2,6-Dinitrotoluene	2.40	0.333	mg/kg wet	3.333		72	40-140			
2-Chloronaphthalene	2.00	0.333	mg/kg wet	3.333		60	40-140			
2-Chlorophenol	2.04	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140			
2-Methylphenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Nitroaniline	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.38	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.66	0.667	mg/kg wet	6.667		70	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510371

Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

4,6-Dinitro-2-Methylphenol	2.19	1.67	mg/kg wet	3.333		66	30-130			
4-Bromophenyl-phenylether	2.49	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.35	0.333	mg/kg wet	3.333		70	30-130			
4-Chloroaniline	1.94	0.667	mg/kg wet	3.333		58	40-140			
4-Chloro-phenyl-phenyl ether	2.34	0.333	mg/kg wet	3.333		70	40-140			
4-Nitroaniline	2.52	0.333	mg/kg wet	3.333		76	40-140			
4-Nitrophenol	2.35	1.67	mg/kg wet	3.333		71	30-130			
Acenaphthene	2.28	0.333	mg/kg wet	3.333		68	40-140			
Acenaphthylene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Acetophenone	2.35	0.667	mg/kg wet	3.333		70	40-140			
Aniline	1.68	0.667	mg/kg wet	3.333		50	40-140			
Anthracene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Azobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140			
Benzo(a)anthracene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)pyrene	2.48	0.167	mg/kg wet	3.333		74	40-140			
Benzo(b)fluoranthene	2.37	0.333	mg/kg wet	3.333		71	40-140			
Benzo(g,h,i)perylene	2.14	0.333	mg/kg wet	3.333		64	40-140			
Benzo(k)fluoranthene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Benzoic Acid	2.98	1.67	mg/kg wet	3.333		89	40-140			
Benzyl Alcohol	2.32	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140			
bis(2-chloroisopropyl)Ether	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	2.42	0.333	mg/kg wet	3.333		73	40-140			
Butylbenzylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140			
Carbazole	2.56	0.333	mg/kg wet	3.333		77	40-140			
Chrysene	2.57	0.167	mg/kg wet	3.333		77	40-140			
Dibenzo(a,h)Anthracene	2.25	0.167	mg/kg wet	3.333		67	40-140			
Dibenzofuran	2.20	0.333	mg/kg wet	3.333		66	40-140			
Diethylphthalate	2.49	0.333	mg/kg wet	3.333		75	40-140			
Dimethylphthalate	2.35	0.333	mg/kg wet	3.333		70	40-140			
Di-n-butylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	2.08	0.333	mg/kg wet	3.333		63	40-140			
Fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Fluorene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140			
Hexachlorobutadiene	2.20	0.333	mg/kg wet	3.333		66	40-140			
Hexachlorocyclopentadiene	1.42	1.67	mg/kg wet	3.333		43	40-140			
Hexachloroethane	2.02	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140			
Naphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Nitrobenzene	2.26	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			



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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

N-nitrosodiphenylamine	2.46	0.333	mg/kg wet	3.333		74	40-140			
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130			
Phenanthrene	2.47	0.333	mg/kg wet	3.333		74	40-140			
Phenol	2.09	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	2.22	0.333	mg/kg wet	3.333		67	40-140			
Pyridine	1.42	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	4.19		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Chlorophenol-d4	3.15		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.86		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.21		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.35		mg/kg wet	3.333		71	30-130			

LCS Dup

1,1-Biphenyl	2.52	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,2,4-Trichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	13	30	
1,2-Dichlorobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,3-Dichlorobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	13	30	
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	13	30	
2,3,4,6-Tetrachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	15	30	
2,4,5-Trichlorophenol	2.89	0.333	mg/kg wet	3.333		87	30-130	16	30	
2,4,6-Trichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	17	30	
2,4-Dichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	15	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	16	30	
2,4-Dinitrophenol	2.62	1.67	mg/kg wet	3.333		79	30-130	18	30	
2,4-Dinitrotoluene	3.12	0.333	mg/kg wet	3.333		94	40-140	15	30	
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140	18	30	
2-Chloronaphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140	15	30	
2-Chlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	14	30	
2-Methylnaphthalene	2.41	0.333	mg/kg wet	3.333		72	40-140	14	30	
2-Methylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130	14	30	
2-Nitroaniline	2.33	0.333	mg/kg wet	3.333		70	40-140	16	30	
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		86	30-130	15	30	
3,3'-Dichlorobenzidine	2.61	0.667	mg/kg wet	3.333		78	40-140	9	30	
3+4-Methylphenol	5.28	0.667	mg/kg wet	6.667		79	30-130	13	30	
3-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	14	30	
4,6-Dinitro-2-Methylphenol	2.64	1.67	mg/kg wet	3.333		79	30-130	18	30	
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140	15	30	
4-Chloro-3-Methylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130	13	30	
4-Chloroaniline	2.26	0.667	mg/kg wet	3.333		68	40-140	15	30	
4-Chloro-phenyl-phenyl ether	2.68	0.333	mg/kg wet	3.333		80	40-140	13	30	
4-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	13	30	
4-Nitrophenol	2.77	1.67	mg/kg wet	3.333		83	30-130	16	30	
Acenaphthene	2.64	0.333	mg/kg wet	3.333		79	40-140	15	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51414 - 3546

Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	16	30	
Acetophenone	2.71	0.667	mg/kg wet	3.333		81	40-140	14	30	
Aniline	1.94	0.667	mg/kg wet	3.333		58	40-140	15	30	
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	14	30	
Azobenzene	2.80	0.333	mg/kg wet	3.333		84	40-140	16	30	
Benzo(a)anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140	14	30	
Benzo(a)pyrene	2.86	0.167	mg/kg wet	3.333		86	40-140	14	30	
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140	8	30	
Benzo(g,h,i)perylene	2.56	0.333	mg/kg wet	3.333		77	40-140	18	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	17	30	
Benzoic Acid	3.43	1.67	mg/kg wet	3.333		103	40-140	14	30	
Benzyl Alcohol	2.43	0.333	mg/kg wet	3.333		73	40-140	4	30	
bis(2-Chloroethoxy)methane	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
bis(2-Chloroethyl)ether	2.41	0.333	mg/kg wet	3.333		72	40-140	15	30	
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Ethylhexyl)phthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	14	30	
Butylbenzylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140	16	30	
Carbazole	2.94	0.333	mg/kg wet	3.333		88	40-140	14	30	
Chrysene	2.98	0.167	mg/kg wet	3.333		89	40-140	15	30	
Dibenzo(a,h)Anthracene	2.65	0.167	mg/kg wet	3.333		79	40-140	16	30	
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140	14	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	15	30	
Dimethylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140	16	30	
Di-n-butylphthalate	3.25	0.333	mg/kg wet	3.333		98	40-140	14	30	
Di-n-octylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140	12	30	
Fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140	12	30	
Fluorene	2.70	0.333	mg/kg wet	3.333		81	40-140	14	30	
Hexachlorobenzene	2.80	0.167	mg/kg wet	3.333		84	40-140	16	30	
Hexachlorobutadiene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Hexachlorocyclopentadiene	1.71	1.67	mg/kg wet	3.333		51	40-140	19	30	
Hexachloroethane	2.31	0.333	mg/kg wet	3.333		69	40-140	14	30	
Indeno(1,2,3-cd)Pyrene	2.66	0.333	mg/kg wet	3.333		80	40-140	17	30	
Isophorone	2.63	0.333	mg/kg wet	3.333		79	40-140	15	30	
Naphthalene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Nitrobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140	15	30	
N-Nitrosodimethylamine	2.08	0.333	mg/kg wet	3.333		62	40-140	18	30	
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.85	0.333	mg/kg wet	3.333		86	40-140	15	30	
Pentachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130	15	30	
Phenanthrene	2.85	0.333	mg/kg wet	3.333		86	40-140	14	30	
Phenol	2.39	0.333	mg/kg wet	3.333		72	30-130	13	30	
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140	15	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.57		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	4.70		mg/kg wet	5.000		94	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Quality Control Data

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

Batch CJ51414 - 3546

<i>Surrogate: 2-Chlorophenol-d4</i>	3.52		mg/kg wet	5.000		70	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.56		mg/kg wet	3.333		77	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.19		mg/kg wet	5.000		64	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.63		mg/kg wet	3.333		79	30-130			
<i>Surrogate: Phenol-d6</i>	3.60		mg/kg wet	5.000		72	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.66		mg/kg wet	3.333		80	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510371

Notes and Definitions

- Z-10 Soil pH measured in water at 18.8 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- 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: 1510371

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: 15100371
 Date Project Due: 10/19/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| Cooler Temp: <u>14.7</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 @ 1825 JB 10/14/15

Who was called?: _____ By whom? _____

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

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

Date/Time: 10/14/15 1750
 Date/Time: 10/14/15 1813



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: 1510374

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

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 3:30 pm, Oct 19, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

SAMPLE RECEIPT

The following samples were received on October 14, 2015 for the analyses specified on the enclosed Chain of Custody Record.

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

Low Level VOA vials were frozen by ESS Laboratory on October 14, 2015 at 18:25.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510374-01	Lopes-Raynham 20% Org D	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: 1510374

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

- 1510374-01 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (37% @ 50-200%)
- 1510374-01RE1 **Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).**
1,4-Dichlorobenzene-D4 (25% @ 50-200%), Chlorobenzene-d5 (35% @ 50-200%), Pentafluorobenzene (40% @ 50-200%)
- 1510374-01RE1 **Surrogate recovery(ies) above upper control limit (S+).**
1,2-Dichloroethane-d4 (135% @ 70-130%)
- CJ51539-BS1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (162% @ 70-130%)
- CJ51539-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Acetone (132% @ 70-130%), Methylene Chloride (136% @ 70-130%), Vinyl Acetate (192% @ 70-130%)
- CJ51648-BS1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (170% @ 70-130%)
- CJ51648-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Vinyl Acetate (177% @ 70-130%)

8270D Semi-Volatile Organic Compounds

- CYJ0168-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Benzoic Acid (103% @ 80-120%)
- CYJ0168-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Pyridine (25% @ 20%)
- CYJ0180-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (74% @ 80-120%), Benzoic Acid (65% @ 80-120%)
- CYJ0180-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrophenol (26% @ 20%), 4,6-Dinitro-2-Methylphenol (28% @ 20%), Benzoic Acid (35% @ 20%), Di-n-octylphthalate (27% @ 20%), N-Nitrosodimethylamine (41% @ 20%), Pentachlorophenol (31% @ 20%), Pyrene (26% @ 20%), Pyridine (34% @ 20%)

No other observations noted.

End of Project Narrative.



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

DATA USABILITY LINKS

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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.06 (2.29)		6010C		1	KJK	10/16/15 10:41	2.24	100	CJ51452
Barium	22.2 (2.29)		6010C		1	KJK	10/16/15 10:41	2.24	100	CJ51452
Cadmium	ND (0.46)		6010C		1	KJK	10/16/15 10:41	2.24	100	CJ51452
Chromium	6.82 (0.91)		6010C		1	KJK	10/16/15 10:41	2.24	100	CJ51452
Lead	27.5 (4.57)		6010C		1	KJK	10/16/15 22:10	2.24	100	CJ51452
Mercury	0.036 (0.032)		7471B		1	BJV	10/16/15 13:29	0.63	40	CJ51630
Selenium	ND (4.57)		6010C		1	KJK	10/16/15 10:41	2.24	100	CJ51452
Silver	ND (0.46)		6010C		1	KJK	10/16/15 10:41	2.24	100	CJ51452



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes-Raynham 20% Org D
 Date Sampled: 10/14/15 16:35
 Percent Solids: 98
 Initial Volume: 5.3
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510374
 ESS Laboratory Sample ID: 1510374-01
 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	10/15/15 15:58	CYJ0187	CJ51539
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,1,2,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1,4-Dioxane	ND (0.0967)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
1-Chlorohexane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
2-Butanone	ND (0.0483)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
2-Chlorotoluene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
2-Hexanone	ND (0.0483)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
4-Chlorotoluene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
4-Methyl-2-Pentanone	ND (0.0483)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Acetone	ND (0.0483)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Benzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Bromobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
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	10/15/15 15:58	CYJ0187	CJ51539
Bromodichloromethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Bromoform	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Bromomethane	ND (0.0097)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Carbon Disulfide	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Chlorobenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Chloroethane	ND (0.0097)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Chloroform	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Chloromethane	ND (0.0097)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Dibromochloromethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Dibromomethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Dichlorodifluoromethane	ND (0.0097)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Diethyl Ether	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Di-isopropyl ether	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Ethylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Isopropylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Methylene Chloride	ND (0.0242)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Naphthalene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
n-Butylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
n-Propylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
sec-Butylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Styrene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
tert-Butylbenzene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Tetrachloroethene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Tetrahydrofuran	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
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	10/15/15 15:58	CYJ0187	CJ51539
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Trichloroethene	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Vinyl Acetate	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Vinyl Chloride	ND (0.0097)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Xylene O	ND (0.0048)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Xylene P,M	ND (0.0097)		8260B Low		1	10/15/15 15:58	CYJ0187	CJ51539
Xylenes (Total)	ND (0.0097)		8260B Low		1	10/15/15 15:58		[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>112 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 10/15/15 11:50

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	233 (39.2)		8100M		1	10/15/15 18:19	CYJ0201	CJ51413
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>88 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
1,2,4-Trichlorobenzene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
1,2-Dichlorobenzene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
1,3-Dichlorobenzene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
1,4-Dichlorobenzene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,3,4,6-Tetrachlorophenol	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,4,5-Trichlorophenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,4,6-Trichlorophenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,4-Dichlorophenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,4-Dimethylphenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,4-Dinitrophenol	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,4-Dinitrotoluene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2,6-Dinitrotoluene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2-Chloronaphthalene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2-Chlorophenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2-Methylnaphthalene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2-Methylphenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2-Nitroaniline	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
2-Nitrophenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
3,3'-Dichlorobenzidine	ND (0.722)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
3+4-Methylphenol	ND (0.722)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
3-Nitroaniline	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4,6-Dinitro-2-Methylphenol	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4-Bromophenyl-phenylether	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4-Chloro-3-Methylphenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4-Chloroaniline	ND (0.722)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4-Chloro-phenyl-phenyl ether	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4-Nitroaniline	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
4-Nitrophenol	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Acenaphthene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Acenaphthylene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Acetophenone	ND (0.722)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 10/15/15 11:50

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.722)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Anthracene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Azobenzene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzo(a)anthracene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzo(a)pyrene	0.276 (0.181)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzo(b)fluoranthene	0.390 (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzo(g,h,i)perylene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzo(k)fluoranthene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzoic Acid	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Benzyl Alcohol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
bis(2-Chloroethoxy)methane	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
bis(2-Chloroethyl)ether	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
bis(2-chloroisopropyl)Ether	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
bis(2-Ethylhexyl)phthalate	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Butylbenzylphthalate	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Carbazole	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Chrysene	0.340 (0.181)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Dibenzo(a,h)Anthracene	ND (0.181)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Dibenzofuran	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Diethylphthalate	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Dimethylphthalate	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Di-n-butylphthalate	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Di-n-octylphthalate	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Fluoranthene	0.586 (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Fluorene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Hexachlorobenzene	ND (0.181)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Hexachlorobutadiene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Hexachlorocyclopentadiene	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Hexachloroethane	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Indeno(1,2,3-cd)Pyrene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Isophorone	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Naphthalene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes-Raynham 20% Org D
 Date Sampled: 10/14/15 16:35
 Percent Solids: 98
 Initial Volume: 14.2
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510374
 ESS Laboratory Sample ID: 1510374-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: VSC
 Prepared: 10/15/15 11:50

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
N-Nitrosodimethylamine	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
N-Nitroso-Di-n-Propylamine	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
N-nitrosodiphenylamine	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Pentachlorophenol	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Phenanthrene	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Phenol	ND (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Pyrene	0.372 (0.360)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414
Pyridine	ND (1.81)		8270D		1	10/15/15 16:39	CYJ0180	CJ51414

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	51 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	65 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	52 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	59 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	45 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	53 %		30-130
<i>Surrogate: Phenol-d6</i>	50 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	54 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.29 (N/A)		9045		1	JLK	10/15/15 9:45	S.U.	CJ51504
Corrosivity (pH) Sample Temp	Soil pH measured in water at 19 °C.								



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01RE1
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	10/16/15 14:59	CYJ0209	CJ51648
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1,4-Dioxane	ND (0.0932)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
1-Chlorohexane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
2-Butanone	ND (0.0466)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
2-Chlorotoluene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
2-Hexanone	ND (0.0466)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
4-Chlorotoluene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
4-Methyl-2-Pentanone	ND (0.0466)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Acetone	ND (0.0466)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Benzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Bromobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01RE1
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	10/16/15 14:59	CYJ0209	CJ51648
Bromodichloromethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Bromoform	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Bromomethane	ND (0.0093)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Carbon Disulfide	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Chlorobenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Chloroethane	ND (0.0093)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Chloroform	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Chloromethane	ND (0.0093)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Dibromochloromethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Dibromomethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Dichlorodifluoromethane	ND (0.0093)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Diethyl Ether	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Di-isopropyl ether	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Ethylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Isopropylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Methylene Chloride	ND (0.0233)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Naphthalene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
n-Butylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
n-Propylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
sec-Butylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Styrene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
tert-Butylbenzene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Tetrachloroethene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Tetrahydrofuran	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes-Raynham 20% Org D
Date Sampled: 10/14/15 16:35
Percent Solids: 98
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510374
ESS Laboratory Sample ID: 1510374-01RE1
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	10/16/15 14:59	CYJ0209	CJ51648
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Trichloroethene	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Vinyl Acetate	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Vinyl Chloride	ND (0.0093)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Xylene O	ND (0.0047)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Xylene P,M	ND (0.0093)		8260B Low		1	10/16/15 14:59	CYJ0209	CJ51648
Xylenes (Total)	ND (0.0093)		8260B Low		1	10/16/15 14:59		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>135 %</i>	<i>S+</i>	<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>79 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>126 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51452 - 3005A

Blank

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

LCS

Arsenic	114	9.80	mg/kg wet	139.0	82	80-120
Barium	183	9.80	mg/kg wet	203.0	90	80-120
Cadmium	77.1	1.96	mg/kg wet	96.00	80	80-120
Chromium	112	3.92	mg/kg wet	136.0	82	80-120
Lead	114	19.6	mg/kg wet	133.0	86	80-120
Selenium	140	19.6	mg/kg wet	177.0	79	77-123
Silver	33.6	1.96	mg/kg wet	40.20	83	80-120

LCS Dup

Arsenic	123	8.77	mg/kg wet	139.0	88	80-120	7	20
Barium	182	8.77	mg/kg wet	203.0	90	80-120	0.4	20
Cadmium	81.7	1.75	mg/kg wet	96.00	85	80-120	6	20
Chromium	119	3.51	mg/kg wet	136.0	88	80-120	7	20
Lead	124	17.5	mg/kg wet	133.0	93	80-120	8	20
Selenium	149	17.5	mg/kg wet	177.0	84	77-123	6	20
Silver	34.9	1.75	mg/kg wet	40.20	87	80-120	4	20

Batch CJ51630 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	14.5	1.80	mg/kg wet	12.90	112	80-120
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LCS Dup

Mercury	14.7	1.77	mg/kg wet	12.90	114	80-120	2	20
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Reference

Mercury	1.03	0.183	mg/kg wet	1.000	103	70-130
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51539 - 5035

Blank

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

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 CJ51539 - 5035

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

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 CJ51539 - 5035

Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0578		mg/kg wet	0.05000		116	70-130			
Surrogate: 4-Bromofluorobenzene	0.0468		mg/kg wet	0.05000		94	70-130			
Surrogate: Dibromofluoromethane	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0538		mg/kg wet	0.05000		108	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,1-Trichloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2,2-Tetrachloroethane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,1,2-Trichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,1-Dichloroethane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromo-3-Chloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromoethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloroethane	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,3,5-Trimethylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

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 CJ51539 - 5035

1,3-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichloropropane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,4-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,4-Dioxane	1.05	0.100	mg/kg wet	1.000		105	70-130			
1-Chlorohexane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
2-Butanone	0.253	0.0500	mg/kg wet	0.2500		101	70-130			
2-Chlorotoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
2-Hexanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130			
4-Chlorotoluene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
4-Isopropyltoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.280	0.0500	mg/kg wet	0.2500		112	70-130			
Acetone	0.293	0.0500	mg/kg wet	0.2500		117	70-130			
Benzene	0.0573	0.0050	mg/kg wet	0.05000		115	70-130			
Bromobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromochloromethane	0.0567	0.0050	mg/kg wet	0.05000		113	70-130			
Bromodichloromethane	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
Bromoform	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Bromomethane	0.0532	0.0100	mg/kg wet	0.05000		106	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Chlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Chloroethane	0.0489	0.0100	mg/kg wet	0.05000		98	70-130			
Chloroform	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Chloromethane	0.0539	0.0100	mg/kg wet	0.05000		108	70-130			
cis-1,2-Dichloroethene	0.0583	0.0050	mg/kg wet	0.05000		117	70-130			
cis-1,3-Dichloropropene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Dibromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130			
Dibromomethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Dichlorodifluoromethane	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Di-isopropyl ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Ethyl tertiary-butyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
Ethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Hexachlorobutadiene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Isopropylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Methyl tert-Butyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Methylene Chloride	0.0619	0.0250	mg/kg wet	0.05000		124	70-130			
Naphthalene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
n-Butylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
sec-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
tert-Butylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

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 CJ51539 - 5035

Tetrachloroethene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,2-Dichloroethene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,3-Dichloropropene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Trichlorofluoromethane	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
Vinyl Acetate	0.0808	0.0050	mg/kg wet	0.05000		162	70-130			B+
Vinyl Chloride	0.0590	0.0100	mg/kg wet	0.05000		118	70-130			
Xylene O	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130			
Xylenes (Total)	0.149	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0557		mg/kg wet	0.05000		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0482		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0499		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0489		mg/kg wet	0.05000		98	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
1,1,1-Trichloroethane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	8	25	
1,1,2,2-Tetrachloroethane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	12	25	
1,1,2-Trichloroethane	0.0614	0.0050	mg/kg wet	0.05000		123	70-130	10	25	
1,1-Dichloroethane	0.0615	0.0050	mg/kg wet	0.05000		123	70-130	11	25	
1,1-Dichloroethene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	9	25	
1,1-Dichloropropene	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2,3-Trichloropropane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	12	25	
1,2,4-Trichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
1,2,4-Trimethylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,2-Dibromo-3-Chloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	10	25	
1,2-Dibromoethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
1,2-Dichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,2-Dichloroethane	0.0625	0.0050	mg/kg wet	0.05000		125	70-130	11	25	
1,2-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
1,3,5-Trimethylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
1,3-Dichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
1,3-Dichloropropane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	7	25	
1,4-Dichlorobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130	8	20	
1-Chlorohexane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
2,2-Dichloropropane	0.0620	0.0050	mg/kg wet	0.05000		124	70-130	9	25	
2-Butanone	0.290	0.0500	mg/kg wet	0.2500		116	70-130	14	25	
2-Chlorotoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
2-Hexanone	0.297	0.0500	mg/kg wet	0.2500		119	70-130	11	25	
4-Chlorotoluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
4-Isopropyltoluene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	6	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

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 CJ51539 - 5035

4-Methyl-2-Pentanone	0.318	0.0500	mg/kg wet	0.2500		127	70-130	13	25	
Acetone	0.329	0.0500	mg/kg wet	0.2500		132	70-130	11	25	B+
Benzene	0.0623	0.0050	mg/kg wet	0.05000		125	70-130	8	25	
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Bromochloromethane	0.0591	0.0050	mg/kg wet	0.05000		118	70-130	4	25	
Bromodichloromethane	0.0611	0.0050	mg/kg wet	0.05000		122	70-130	9	25	
Bromoform	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	0.1	25	
Bromomethane	0.0564	0.0100	mg/kg wet	0.05000		113	70-130	6	25	
Carbon Disulfide	0.0619	0.0050	mg/kg wet	0.05000		124	70-130	10	25	
Carbon Tetrachloride	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
Chlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Chloroethane	0.0565	0.0100	mg/kg wet	0.05000		113	70-130	14	25	
Chloroform	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	10	25	
Chloromethane	0.0620	0.0100	mg/kg wet	0.05000		124	70-130	14	25	
cis-1,2-Dichloroethene	0.0626	0.0050	mg/kg wet	0.05000		125	70-130	7	25	
cis-1,3-Dichloropropene	0.0589	0.0050	mg/kg wet	0.05000		118	70-130	10	25	
Dibromochloromethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130	0.3	25	
Dibromomethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	9	25	
Dichlorodifluoromethane	0.0609	0.0100	mg/kg wet	0.05000		122	70-130	9	25	
Diethyl Ether	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	12	25	
Di-isopropyl ether	0.0552	0.0050	mg/kg wet	0.05000		110	70-130	14	25	
Ethyl tertiary-butyl ether	0.0575	0.0050	mg/kg wet	0.05000		115	70-130	12	25	
Ethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	3	25	
Hexachlorobutadiene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	0.4	25	
Isopropylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Methyl tert-Butyl Ether	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	11	25	
Methylene Chloride	0.0679	0.0250	mg/kg wet	0.05000		136	70-130	9	25	B+
Naphthalene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
n-Butylbenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
n-Propylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
sec-Butylbenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
Styrene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.5	25	
tert-Butylbenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
Tertiary-amyl methyl ether	0.0603	0.0050	mg/kg wet	0.05000		121	70-130	10	25	
Tetrachloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
Tetrahydrofuran	0.0592	0.0050	mg/kg wet	0.05000		118	70-130	14	25	
Toluene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	6	25	
trans-1,2-Dichloroethene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	9	25	
trans-1,3-Dichloropropene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	10	25	
Trichloroethene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
Trichlorofluoromethane	0.0600	0.0050	mg/kg wet	0.05000		120	70-130	9	25	
Vinyl Acetate	0.0959	0.0050	mg/kg wet	0.05000		192	70-130	17	25	B+
Vinyl Chloride	0.0523	0.0100	mg/kg wet	0.05000		105	70-130	12	25	
Xylene O	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	1	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510374

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 CJ51539 - [CALC]

Xylenes (Total)	0.152	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0626		mg/kg wet	0.05000		125	70-130			
Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0528		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

Batch CJ51648 - 5035

Blank

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



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 5035

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							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0535		mg/kg wet	0.05000		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0484		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0528		mg/kg wet	0.05000		106	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,2-Trichloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			



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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ51648 - 5035

1,1-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloropropene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trichlorobenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trimethylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dibromo-3-Chloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
1,2-Dichloroethane	0.0558	0.0050	mg/kg wet	0.05000		112	70-130			
1,2-Dichloropropane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichlorobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
1,3-Dichloropropane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dioxane	0.921	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2,2-Dichloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
2-Butanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130			
2-Chlorotoluene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
4-Chlorotoluene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
4-Isopropyltoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
Acetone	0.285	0.0500	mg/kg wet	0.2500		114	70-130			
Benzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Bromochloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromodichloromethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Bromomethane	0.0510	0.0100	mg/kg wet	0.05000		102	70-130			
Carbon Disulfide	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Carbon Tetrachloride	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Chlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Chloroethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130			
Chloroform	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Chloromethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
cis-1,2-Dichloroethene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
cis-1,3-Dichloropropene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dibromochloromethane	0.0571	0.0050	mg/kg wet	0.05000		114	70-130			
Dibromomethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Diethyl Ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51648 - 5035

Ethyl tertiary-butyl ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Ethylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Hexachlorobutadiene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Isopropylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Methyl tert-Butyl Ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Methylene Chloride	0.0569	0.0250	mg/kg wet	0.05000		114	70-130			
Naphthalene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
n-Butylbenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
n-Propylbenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
Styrene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
tert-Butylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Tertiary-amyl methyl ether	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Tetrachloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Toluene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
trans-1,2-Dichloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Trichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0852	0.0050	mg/kg wet	0.05000		170	70-130			B+
Vinyl Chloride	0.0446	0.0100	mg/kg wet	0.05000		89	70-130			
Xylene O	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130			
Xylenes (Total)	0.140	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0494		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0495		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	6	25	
1,1,1-Trichloroethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
1,1,2-Trichloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	3	25	
1,1-Dichloroethane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
1,1-Dichloroethene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
1,1-Dichloropropene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
1,2,3-Trichlorobenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	9	25	
1,2,3-Trichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	7	25	
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
1,2,4-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,2-Dibromoethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
1,2-Dichlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	8	25	
1,2-Dichloroethane	0.0578	0.0050	mg/kg wet	0.05000		116	70-130	4	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51648 - 5035

1,2-Dichloropropane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,3,5-Trimethylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	8	25	
1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
1,3-Dichloropropane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
1,4-Dioxane	1.02	0.100	mg/kg wet	1.000		102	70-130	10	20	
1-Chlorohexane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
2,2-Dichloropropane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130	6	25	
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130	3	25	
2-Chlorotoluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
2-Hexanone	0.279	0.0500	mg/kg wet	0.2500		111	70-130	3	25	
4-Chlorotoluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
4-Methyl-2-Pentanone	0.281	0.0500	mg/kg wet	0.2500		112	70-130	3	25	
Acetone	0.296	0.0500	mg/kg wet	0.2500		119	70-130	4	25	
Benzene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	5	25	
Bromobenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	4	25	
Bromodichloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130	7	25	
Bromoform	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Bromomethane	0.0519	0.0100	mg/kg wet	0.05000		104	70-130	2	25	
Carbon Disulfide	0.0570	0.0050	mg/kg wet	0.05000		114	70-130	6	25	
Carbon Tetrachloride	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	8	25	
Chlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Chloroethane	0.0403	0.0100	mg/kg wet	0.05000		81	70-130	18	25	
Chloroform	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Chloromethane	0.0558	0.0100	mg/kg wet	0.05000		112	70-130	7	25	
cis-1,2-Dichloroethene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	6	25	
cis-1,3-Dichloropropene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130	5	25	
Dibromochloromethane	0.0601	0.0050	mg/kg wet	0.05000		120	70-130	5	25	
Dibromomethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
Diethyl Ether	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
Di-isopropyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Ethyl tertiary-butyl ether	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	6	25	
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
Hexachlorobutadiene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	10	25	
Isopropylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
Methyl tert-Butyl Ether	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	5	25	
Methylene Chloride	0.0605	0.0250	mg/kg wet	0.05000		121	70-130	6	25	
Naphthalene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
n-Propylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
sec-Butylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51648 - 5035

tert-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	8	25	
Tertiary-amyl methyl ether	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrahydrofuran	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	2	25	
Toluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
trans-1,2-Dichloroethene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
trans-1,3-Dichloropropene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Trichloroethene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
Trichlorofluoromethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
Vinyl Acetate	0.0886	0.0050	mg/kg wet	0.05000		177	70-130	4	25	B+
Vinyl Chloride	0.0464	0.0100	mg/kg wet	0.05000		93	70-130	4	25	
Xylene O	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Xylene P,M	0.0986	0.0100	mg/kg wet	0.1000		99	70-130	5	25	
Xylenes (Total)	0.147	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0502</i>		mg/kg wet	<i>0.05000</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0492</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0494</i>		mg/kg wet	<i>0.05000</i>		<i>99</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0488</i>		mg/kg wet	<i>0.05000</i>		<i>98</i>	<i>70-130</i>			

8100M Total Petroleum Hydrocarbons

Batch CJ51413 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
<i>Surrogate: O-Terphenyl</i>	<i>4.59</i>		mg/kg wet	<i>5.000</i>		<i>92</i>	<i>40-140</i>			

LCS

Decane (C10)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		96	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
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ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51413 - 3546

Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Total Petroleum Hydrocarbons	30.2	37.5	mg/kg wet	35.00		86	40-140			
Triacotane (C30)	2.3	0.2	mg/kg wet	2.500		91	40-140			

Surrogate: O-Terphenyl

4.80 mg/kg wet 5.000 96 40-140

LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500		89	40-140	0.5	25	
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140	2	25	
Dodecane (C12)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		98	40-140	2	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140	1	25	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140	3	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140	2	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140	0.8	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		94	40-140	1	25	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		99	40-140	2	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140	2	25	
Total Petroleum Hydrocarbons	30.6	37.5	mg/kg wet	35.00		87	40-140	1	25	
Triacotane (C30)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	

Surrogate: O-Terphenyl

4.84 mg/kg wet 5.000 97 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							



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8270D Semi-Volatile Organic Compounds

Batch CJ51414 - 3546

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							
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							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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

Batch CJ51414 - 3546

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	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	3.58		mg/kg wet	5.000		72	30-130			
Surrogate: 2-Chlorophenol-d4	2.98		mg/kg wet	5.000		60	30-130			
Surrogate: 2-Fluorobiphenyl	2.04		mg/kg wet	3.333		61	30-130			
Surrogate: 2-Fluorophenol	2.72		mg/kg wet	5.000		54	30-130			
Surrogate: Nitrobenzene-d5	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: Phenol-d6	2.99		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.29		mg/kg wet	3.333		69	30-130			

LCS

1,1-Biphenyl	2.18	0.333	mg/kg wet	3.333		66	40-140			
1,2,4-Trichlorobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
1,2-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140			
1,4-Dichlorobenzene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.47	1.67	mg/kg wet	3.333		74	30-130			
2,4,5-Trichlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
2,4,6-Trichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dimethylphenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dinitrophenol	2.20	1.67	mg/kg wet	3.333		66	30-130			
2,4-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140			
2,6-Dinitrotoluene	2.40	0.333	mg/kg wet	3.333		72	40-140			
2-Chloronaphthalene	2.00	0.333	mg/kg wet	3.333		60	40-140			
2-Chlorophenol	2.04	0.333	mg/kg wet	3.333		61	30-130			
2-Methylnaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140			
2-Methylphenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Nitroaniline	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.38	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	4.66	0.667	mg/kg wet	6.667		70	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51414 - 3546

4,6-Dinitro-2-Methylphenol	2.19	1.67	mg/kg wet	3.333		66	30-130			
4-Bromophenyl-phenylether	2.49	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.35	0.333	mg/kg wet	3.333		70	30-130			
4-Chloroaniline	1.94	0.667	mg/kg wet	3.333		58	40-140			
4-Chloro-phenyl-phenyl ether	2.34	0.333	mg/kg wet	3.333		70	40-140			
4-Nitroaniline	2.52	0.333	mg/kg wet	3.333		76	40-140			
4-Nitrophenol	2.35	1.67	mg/kg wet	3.333		71	30-130			
Acenaphthene	2.28	0.333	mg/kg wet	3.333		68	40-140			
Acenaphthylene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Acetophenone	2.35	0.667	mg/kg wet	3.333		70	40-140			
Aniline	1.68	0.667	mg/kg wet	3.333		50	40-140			
Anthracene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Azobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140			
Benzo(a)anthracene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Benzo(a)pyrene	2.48	0.167	mg/kg wet	3.333		74	40-140			
Benzo(b)fluoranthene	2.37	0.333	mg/kg wet	3.333		71	40-140			
Benzo(g,h,i)perylene	2.14	0.333	mg/kg wet	3.333		64	40-140			
Benzo(k)fluoranthene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Benzoic Acid	2.98	1.67	mg/kg wet	3.333		89	40-140			
Benzyl Alcohol	2.32	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Chloroethoxy)methane	2.28	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	2.08	0.333	mg/kg wet	3.333		62	40-140			
bis(2-chloroisopropyl)Ether	2.25	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	2.42	0.333	mg/kg wet	3.333		73	40-140			
Butylbenzylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140			
Carbazole	2.56	0.333	mg/kg wet	3.333		77	40-140			
Chrysene	2.57	0.167	mg/kg wet	3.333		77	40-140			
Dibenzo(a,h)Anthracene	2.25	0.167	mg/kg wet	3.333		67	40-140			
Dibenzofuran	2.20	0.333	mg/kg wet	3.333		66	40-140			
Diethylphthalate	2.49	0.333	mg/kg wet	3.333		75	40-140			
Dimethylphthalate	2.35	0.333	mg/kg wet	3.333		70	40-140			
Di-n-butylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	2.08	0.333	mg/kg wet	3.333		63	40-140			
Fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Fluorene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140			
Hexachlorobutadiene	2.20	0.333	mg/kg wet	3.333		66	40-140			
Hexachlorocyclopentadiene	1.42	1.67	mg/kg wet	3.333		43	40-140			
Hexachloroethane	2.02	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	2.24	0.333	mg/kg wet	3.333		67	40-140			
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140			
Naphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Nitrobenzene	2.26	0.333	mg/kg wet	3.333		68	40-140			
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51414 - 3546

N-nitrosodiphenylamine	2.46	0.333	mg/kg wet	3.333		74	40-140			
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130			
Phenanthrene	2.47	0.333	mg/kg wet	3.333		74	40-140			
Phenol	2.09	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	2.22	0.333	mg/kg wet	3.333		67	40-140			
Pyridine	1.42	1.67	mg/kg wet	3.333		43	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.24		mg/kg wet	3.333		67	30-130			
Surrogate: 2,4,6-Tribromophenol	4.19		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Chlorophenol-d4	3.15		mg/kg wet	5.000		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.86		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.21		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.35		mg/kg wet	3.333		71	30-130			

LCS Dup

1,1-Biphenyl	2.52	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,2,4-Trichlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	13	30	
1,2-Dichlorobenzene	2.54	0.333	mg/kg wet	3.333		76	40-140	14	30	
1,3-Dichlorobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	13	30	
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	13	30	
2,3,4,6-Tetrachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	15	30	
2,4,5-Trichlorophenol	2.89	0.333	mg/kg wet	3.333		87	30-130	16	30	
2,4,6-Trichlorophenol	2.80	0.333	mg/kg wet	3.333		84	30-130	17	30	
2,4-Dichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	15	30	
2,4-Dimethylphenol	2.69	0.333	mg/kg wet	3.333		81	30-130	16	30	
2,4-Dinitrophenol	2.62	1.67	mg/kg wet	3.333		79	30-130	18	30	
2,4-Dinitrotoluene	3.12	0.333	mg/kg wet	3.333		94	40-140	15	30	
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140	18	30	
2-Chloronaphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140	15	30	
2-Chlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	14	30	
2-Methylnaphthalene	2.41	0.333	mg/kg wet	3.333		72	40-140	14	30	
2-Methylphenol	2.67	0.333	mg/kg wet	3.333		80	30-130	14	30	
2-Nitroaniline	2.33	0.333	mg/kg wet	3.333		70	40-140	16	30	
2-Nitrophenol	2.85	0.333	mg/kg wet	3.333		86	30-130	15	30	
3,3'-Dichlorobenzidine	2.61	0.667	mg/kg wet	3.333		78	40-140	9	30	
3+4-Methylphenol	5.28	0.667	mg/kg wet	6.667		79	30-130	13	30	
3-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	14	30	
4,6-Dinitro-2-Methylphenol	2.64	1.67	mg/kg wet	3.333		79	30-130	18	30	
4-Bromophenyl-phenylether	2.89	0.333	mg/kg wet	3.333		87	40-140	15	30	
4-Chloro-3-Methylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130	13	30	
4-Chloroaniline	2.26	0.667	mg/kg wet	3.333		68	40-140	15	30	
4-Chloro-phenyl-phenyl ether	2.68	0.333	mg/kg wet	3.333		80	40-140	13	30	
4-Nitroaniline	2.86	0.333	mg/kg wet	3.333		86	40-140	13	30	
4-Nitrophenol	2.77	1.67	mg/kg wet	3.333		83	30-130	16	30	
Acenaphthene	2.64	0.333	mg/kg wet	3.333		79	40-140	15	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51414 - 3546

Acenaphthylene	2.61	0.333	mg/kg wet	3.333		78	40-140	16	30	
Acetophenone	2.71	0.667	mg/kg wet	3.333		81	40-140	14	30	
Aniline	1.94	0.667	mg/kg wet	3.333		58	40-140	15	30	
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140	14	30	
Azobenzene	2.80	0.333	mg/kg wet	3.333		84	40-140	16	30	
Benzo(a)anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140	14	30	
Benzo(a)pyrene	2.86	0.167	mg/kg wet	3.333		86	40-140	14	30	
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140	8	30	
Benzo(g,h,i)perylene	2.56	0.333	mg/kg wet	3.333		77	40-140	18	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	17	30	
Benzoic Acid	3.43	1.67	mg/kg wet	3.333		103	40-140	14	30	
Benzyl Alcohol	2.43	0.333	mg/kg wet	3.333		73	40-140	4	30	
bis(2-Chloroethoxy)methane	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
bis(2-Chloroethyl)ether	2.41	0.333	mg/kg wet	3.333		72	40-140	15	30	
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Ethylhexyl)phthalate	2.80	0.333	mg/kg wet	3.333		84	40-140	14	30	
Butylbenzylphthalate	2.77	0.333	mg/kg wet	3.333		83	40-140	16	30	
Carbazole	2.94	0.333	mg/kg wet	3.333		88	40-140	14	30	
Chrysene	2.98	0.167	mg/kg wet	3.333		89	40-140	15	30	
Dibenzo(a,h)Anthracene	2.65	0.167	mg/kg wet	3.333		79	40-140	16	30	
Dibenzofuran	2.53	0.333	mg/kg wet	3.333		76	40-140	14	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	15	30	
Dimethylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140	16	30	
Di-n-butylphthalate	3.25	0.333	mg/kg wet	3.333		98	40-140	14	30	
Di-n-octylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140	12	30	
Fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140	12	30	
Fluorene	2.70	0.333	mg/kg wet	3.333		81	40-140	14	30	
Hexachlorobenzene	2.80	0.167	mg/kg wet	3.333		84	40-140	16	30	
Hexachlorobutadiene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Hexachlorocyclopentadiene	1.71	1.67	mg/kg wet	3.333		51	40-140	19	30	
Hexachloroethane	2.31	0.333	mg/kg wet	3.333		69	40-140	14	30	
Indeno(1,2,3-cd)Pyrene	2.66	0.333	mg/kg wet	3.333		80	40-140	17	30	
Isophorone	2.63	0.333	mg/kg wet	3.333		79	40-140	15	30	
Naphthalene	2.52	0.333	mg/kg wet	3.333		76	40-140	13	30	
Nitrobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140	15	30	
N-Nitrosodimethylamine	2.08	0.333	mg/kg wet	3.333		62	40-140	18	30	
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.85	0.333	mg/kg wet	3.333		86	40-140	15	30	
Pentachlorophenol	3.30	1.67	mg/kg wet	3.333		99	30-130	15	30	
Phenanthrene	2.85	0.333	mg/kg wet	3.333		86	40-140	14	30	
Phenol	2.39	0.333	mg/kg wet	3.333		72	30-130	13	30	
Pyrene	2.59	0.333	mg/kg wet	3.333		78	40-140	15	30	
Pyridine	1.57	1.67	mg/kg wet	3.333		47	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.57		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	4.70		mg/kg wet	5.000		94	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Quality Control Data

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

Batch CJ51414 - 3546

<i>Surrogate: 2-Chlorophenol-d4</i>	3.52		mg/kg wet	5.000		70	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.56		mg/kg wet	3.333		77	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.19		mg/kg wet	5.000		64	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.63		mg/kg wet	3.333		79	30-130			
<i>Surrogate: Phenol-d6</i>	3.60		mg/kg wet	5.000		72	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.66		mg/kg wet	3.333		80	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510374

Notes and Definitions

- Z-10 Soil pH measured in water at 19 °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).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- 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: 1510374

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: 15100374
 Date Project Due: 10/19/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <input type="text" value="Cooler Temp: 14.7"/> | | 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 @ ^{JL 10/14/15} 10/14/15 JL

Who was called?: _____ By whom? _____

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

Completed By: [Signature] Date/Time: 10/14/15 1817
 Reviewed By: [Signature] Date/Time: 10/14/15 1825



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: 1510590

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 5:02 pm, Oct 28, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

SAMPLE RECEIPT

The following samples were received on October 21, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on October 21, 2015 at 17:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510590-01	Lopes - Raynham 20% Org X	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: 1510590

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1510590-01 [Surrogate recovery\(ies\) above upper control limit \(S+\).](#)

1,2-Dichloroethane-d4 (133% @ 70-130%)

CJ52244-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (187% @ 70-130%)

CJ52244-BS1 [Blank Spike recovery is below lower control limit \(B-\).](#)

1,2,3-Trichlorobenzene (69% @ 70-130%), Hexachlorobutadiene (68% @ 70-130%), Naphthalene (64% @ 70-130%)

CJ52244-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (186% @ 70-130%)

CJ52244-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

1,2,4-Trichlorobenzene (67% @ 70-130%), Hexachlorobutadiene (67% @ 70-130%), Naphthalene (66% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0308-CCV2 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Tetradecane (C14) (21% @ 20%), Total Petroleum Hydrocarbons (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CJ52239-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

N-Nitrosodimethylamine (39% @ 40-140%)

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: 1510590

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.67 (2.29)		6010C		1	JP	10/26/15 16:01	2.21	100	CJ52213
Barium	19.8 (2.29)		6010C		1	JP	10/26/15 16:01	2.21	100	CJ52213
Cadmium	ND (0.46)		6010C		1	JP	10/26/15 16:01	2.21	100	CJ52213
Chromium	6.72 (0.92)		6010C		1	JP	10/26/15 16:01	2.21	100	CJ52213
Lead	23.1 (4.58)		6010C		1	JP	10/26/15 16:01	2.21	100	CJ52213
Mercury	0.037 (0.033)		7471B		1	PJP	10/22/15 15:32	0.61	40	CJ52215
Selenium	ND (22.9)		6010C		5	JP	10/26/15 15:40	2.21	100	CJ52213
Silver	ND (0.46)		6010C		1	JP	10/26/15 16:01	2.21	100	CJ52213



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
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	10/22/15 13:59	CYJ0291	CJ52244
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,1,2,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1,4-Dioxane	ND (0.0920)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
1-Chlorohexane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
2-Butanone	ND (0.0460)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
2-Chlorotoluene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
2-Hexanone	ND (0.0460)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
4-Chlorotoluene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
4-Methyl-2-Pentanone	ND (0.0460)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Acetone	ND (0.0460)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Benzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Bromobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
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	10/22/15 13:59	CYJ0291	CJ52244
Bromodichloromethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Bromoform	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Bromomethane	ND (0.0092)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Carbon Disulfide	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Chlorobenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Chloroethane	ND (0.0092)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Chloroform	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Chloromethane	ND (0.0092)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Dibromochloromethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Dibromomethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Dichlorodifluoromethane	ND (0.0092)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Diethyl Ether	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Di-isopropyl ether	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Ethylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Isopropylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Methylene Chloride	ND (0.0230)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Naphthalene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
n-Butylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
n-Propylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
sec-Butylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Styrene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
tert-Butylbenzene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Tetrachloroethene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Tetrahydrofuran	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes - Raynham 20% Org X
 Date Sampled: 10/21/15 13:30
 Percent Solids: 99
 Initial Volume: 5.5
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510590
 ESS Laboratory Sample ID: 1510590-01
 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	10/22/15 13:59	CYJ0291	CJ52244
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Trichloroethene	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Vinyl Acetate	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Vinyl Chloride	ND (0.0092)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Xylene O	ND (0.0046)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Xylene P,M	ND (0.0092)		8260B Low		1	10/22/15 13:59	CYJ0291	CJ52244
Xylenes (Total)	ND (0.0092)		8260B Low		1	10/22/15 13:59		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	133 %	S+	70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	91 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	114 %		70-130
<i>Surrogate: Toluene-d8</i>	107 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 10/22/15 12:43

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	201 (39.3)		8100M		1	10/22/15 20:22	CYJ0308	CJ52237
		<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: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

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 (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
1,2,4-Trichlorobenzene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
1,2-Dichlorobenzene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
1,3-Dichlorobenzene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
1,4-Dichlorobenzene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,3,4,6-Tetrachlorophenol	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,4,5-Trichlorophenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,4,6-Trichlorophenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,4-Dichlorophenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,4-Dimethylphenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,4-Dinitrophenol	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,4-Dinitrotoluene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2,6-Dinitrotoluene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2-Chloronaphthalene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2-Chlorophenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2-Methylnaphthalene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2-Methylphenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2-Nitroaniline	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
2-Nitrophenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
3,3'-Dichlorobenzidine	ND (0.689)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
3+4-Methylphenol	ND (0.689)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
3-Nitroaniline	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4,6-Dinitro-2-Methylphenol	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4-Bromophenyl-phenylether	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4-Chloro-3-Methylphenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4-Chloroaniline	ND (0.689)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4-Chloro-phenyl-phenyl ether	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4-Nitroaniline	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
4-Nitrophenol	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Acenaphthene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Acenaphthylene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Acetophenone	ND (0.689)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

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 (0.689)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Anthracene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Azobenzene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzo(a)anthracene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzo(a)pyrene	0.291 (0.172)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzo(b)fluoranthene	0.440 (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzo(g,h,i)perylene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzo(k)fluoranthene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzoic Acid	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Benzyl Alcohol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
bis(2-Chloroethoxy)methane	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
bis(2-Chloroethyl)ether	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
bis(2-chloroisopropyl)Ether	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
bis(2-Ethylhexyl)phthalate	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Butylbenzylphthalate	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Carbazole	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Chrysene	0.354 (0.172)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Dibenzo(a,h)Anthracene	ND (0.172)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Dibenzofuran	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Diethylphthalate	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Dimethylphthalate	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Di-n-butylphthalate	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Di-n-octylphthalate	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Fluoranthene	0.533 (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Fluorene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Hexachlorobenzene	ND (0.172)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Hexachlorobutadiene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Hexachlorocyclopentadiene	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Hexachloroethane	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Indeno(1,2,3-cd)Pyrene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Isophorone	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Naphthalene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

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 (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
N-Nitrosodimethylamine	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
N-Nitroso-Di-n-Propylamine	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
N-nitrosodiphenylamine	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Pentachlorophenol	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Phenanthrene	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Phenol	ND (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Pyrene	0.402 (0.344)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239
Pyridine	ND (1.72)		8270D		1	10/23/15 17:04	CYJ0297	CJ52239

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>41 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>47 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>54 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>40 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>46 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>48 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>64 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org X
Date Sampled: 10/21/15 13:30
Percent Solids: 99

ESS Laboratory Work Order: 1510590
ESS Laboratory Sample ID: 1510590-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.22 (N/A)		9045		1	EEM	10/21/15 18:10	S.U.	CJ52104
Corrosivity (pH) Sample Temp	Soil pH measured in water at 21.1 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52213 - 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	128	9.43	mg/kg wet	139.0	92	80-120
Barium	183	9.43	mg/kg wet	203.0	90	80-120
Cadmium	78.8	1.89	mg/kg wet	96.00	82	80-120
Chromium	126	3.77	mg/kg wet	136.0	93	80-120
Lead	123	18.9	mg/kg wet	133.0	93	80-120
Silver	36.5	1.89	mg/kg wet	40.20	91	80-120

LCS

Selenium	68.4	20.0	mg/kg wet	81.10	84	80-120
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LCS Dup

Arsenic	139	8.93	mg/kg wet	139.0	100	80-120	9	20
Barium	199	8.93	mg/kg wet	203.0	98	80-120	9	20
Cadmium	84.8	1.79	mg/kg wet	96.00	88	80-120	7	20
Chromium	140	3.57	mg/kg wet	136.0	103	80-120	10	20
Lead	136	17.9	mg/kg wet	133.0	102	80-120	9	20
Silver	39.5	1.79	mg/kg wet	40.20	98	80-120	8	20

LCS Dup

Selenium	68.0	19.2	mg/kg wet	81.10	84	80-120	0.6	20
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Batch CJ52215 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	12.9	1.98	mg/kg wet	12.90	100	80-120
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LCS Dup

Mercury	13.6	1.94	mg/kg wet	12.90	105	80-120	5	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - 5035

Blank

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52244 - 5035

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52244 - 5035

Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0573		mg/kg wet	0.05000		115	70-130			
Surrogate: 4-Bromofluorobenzene	0.0479		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0526		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0521		mg/kg wet	0.05000		104	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,1-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
1,1-Dichloroethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
1,1-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0344	0.0050	mg/kg wet	0.05000		69	70-130			B-
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trichlorobenzene	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
1,2,4-Trimethylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromo-3-Chloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloroethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130			
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3,5-Trimethylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52244 - 5035

1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130			
2-Chlorotoluene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Hexanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
4-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
4-Isopropyltoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
Acetone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Benzene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Bromochloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromomethane	0.0507	0.0100	mg/kg wet	0.05000		101	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Chlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Chloroethane	0.0501	0.0100	mg/kg wet	0.05000		100	70-130			
Chloroform	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Chloromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
cis-1,3-Dichloropropene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromochloromethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130			
Dibromomethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Ethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0342	0.0050	mg/kg wet	0.05000		68	70-130			B-
Isopropylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0600	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0322	0.0050	mg/kg wet	0.05000		64	70-130			B-
n-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
n-Propylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
sec-Butylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Styrene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
tert-Butylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Tertiary-amyl methyl ether	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52244 - 5035

Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Toluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,3-Dichloropropene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Trichlorofluoromethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Acetate	0.0934	0.0050	mg/kg wet	0.05000		187	70-130			B+
Vinyl Chloride	0.0479	0.0100	mg/kg wet	0.05000		96	70-130			
Xylene O	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0972	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0497		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0500		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
1,1,1-Trichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	0.7	25	
1,1,2-Trichloroethane	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
1,1-Dichloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	0.2	25	
1,1-Dichloroethene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.6	25	
1,1-Dichloropropene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
1,2,3-Trichlorobenzene	0.0369	0.0050	mg/kg wet	0.05000		74	70-130	7	25	
1,2,3-Trichloropropane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	4	25	
1,2,4-Trichlorobenzene	0.0334	0.0050	mg/kg wet	0.05000		67	70-130	13	25	B-
1,2,4-Trimethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.8	25	
1,2-Dibromo-3-Chloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	7	25	
1,2-Dibromoethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	0.4	25	
1,2-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.1	25	
1,2-Dichloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	4	25	
1,2-Dichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
1,3,5-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
1,3-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.8	25	
1,3-Dichloropropane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
1,4-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
1,4-Dioxane	1.12	0.100	mg/kg wet	1.000		112	70-130	3	20	
1-Chlorohexane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
2,2-Dichloropropane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	0.4	25	
2-Butanone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	0.4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	10	25	
2-Hexanone	0.284	0.0500	mg/kg wet	0.2500		114	70-130	3	25	
4-Chlorotoluene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
4-Isopropyltoluene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	2	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510590

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - 5035

4-Methyl-2-Pentanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130	0.2	25	
Acetone	0.311	0.0500	mg/kg wet	0.2500		124	70-130	3	25	
Benzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	1	25	
Bromobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
Bromodichloromethane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Bromoform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	0.8	25	
Bromomethane	0.0496	0.0100	mg/kg wet	0.05000		99	70-130	2	25	
Carbon Disulfide	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	1	25	
Carbon Tetrachloride	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	1	25	
Chlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.3	25	
Chloroethane	0.0467	0.0100	mg/kg wet	0.05000		93	70-130	7	25	
Chloroform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Chloromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130	3	25	
cis-1,2-Dichloroethene	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	1	25	
cis-1,3-Dichloropropene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	25	
Dibromochloromethane	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	0.6	25	
Dibromomethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	3	25	
Diethyl Ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.7	25	
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Ethyl tertiary-butyl ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
Ethylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	0.4	25	
Hexachlorobutadiene	0.0334	0.0050	mg/kg wet	0.05000		67	70-130	2	25	B-
Isopropylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Methyl tert-Butyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
Methylene Chloride	0.0581	0.0250	mg/kg wet	0.05000		116	70-130	3	25	
Naphthalene	0.0329	0.0050	mg/kg wet	0.05000		66	70-130	2	25	B-
n-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	0.9	25	
n-Propylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
sec-Butylbenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Styrene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.2	25	
tert-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Tertiary-amyl methyl ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
Tetrachloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	0.2	25	
Tetrahydrofuran	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	8	25	
Toluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
trans-1,2-Dichloroethene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
trans-1,3-Dichloropropene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Trichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Trichlorofluoromethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	1	25	
Vinyl Acetate	0.0930	0.0050	mg/kg wet	0.05000		186	70-130	0.4	25	B+
Vinyl Chloride	0.0473	0.0100	mg/kg wet	0.05000		95	70-130	1	25	
Xylene O	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Xylene P,M	0.0971	0.0100	mg/kg wet	0.1000		97	70-130	0.1	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - [CALC]

Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ52237 - 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)	1.7	0.2	mg/kg wet	2.500		68	40-140			
Docosane (C22)	2.7	0.2	mg/kg wet	2.500		110	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Hexacosane (C26)	2.8	0.2	mg/kg wet	2.500		112	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonadecane (C19)	3.2	0.2	mg/kg wet	2.500		126	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		109	40-140			
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Total Petroleum Hydrocarbons	37.5	37.5	mg/kg wet	35.00		107	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		109	40-140			

Surrogate: O-Terphenyl	4.32		mg/kg wet	5.000		86	40-140			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	0.9	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		113	40-140	2	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CJ52237 - 3546

Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		98	40-140	3	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140	2	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		106	40-140	5	25	
Nonadecane (C19)	3.2	0.2	mg/kg wet	2.500		129	40-140	2	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		70	30-140	0.7	25	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		108	40-140	3	25	
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		106	40-140	2	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		99	40-140	5	25	
Total Petroleum Hydrocarbons	37.6	37.5	mg/kg wet	35.00		108	40-140	0.3	25	
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	

Surrogate: O-Terphenyl 4.35 mg/kg wet 5.000 87 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

Blank

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



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8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52239 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.92		mg/kg wet	3.333		88	30-130			
Surrogate: 2,4,6-Tribromophenol	4.34		mg/kg wet	5.000		87	30-130			
Surrogate: 2-Chlorophenol-d4	4.23		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.00		mg/kg wet	5.000		80	30-130			
Surrogate: Nitrobenzene-d5	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			

LCS

1,1-Biphenyl	2.62	0.333	mg/kg wet	3.333		78	40-140			
1,2,4-Trichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,2-Dichlorobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
1,3-Dichlorobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140			
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
2,3,4,6-Tetrachlorophenol	2.53	1.67	mg/kg wet	3.333		76	30-130			
2,4,5-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dichlorophenol	2.95	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dimethylphenol	2.80	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	3.10	0.333	mg/kg wet	3.333		93	40-140			
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140			
2-Chlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2-Methylnaphthalene	2.60	0.333	mg/kg wet	3.333		78	40-140			
2-Methylphenol	2.60	0.333	mg/kg wet	3.333		78	30-130			
2-Nitroaniline	2.12	0.333	mg/kg wet	3.333		64	40-140			
2-Nitrophenol	2.81	0.333	mg/kg wet	3.333		84	30-130			
3,3'-Dichlorobenzidine	2.37	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	6.62	0.667	mg/kg wet	6.667		99	30-130			
3-Nitroaniline	2.54	0.333	mg/kg wet	3.333		76	40-140			
4,6-Dinitro-2-Methylphenol	3.41	1.67	mg/kg wet	3.333		102	30-130			
4-Bromophenyl-phenylether	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130			
4-Chloroaniline	2.27	0.667	mg/kg wet	3.333		68	40-140			
4-Chloro-phenyl-phenyl ether	2.98	0.333	mg/kg wet	3.333		89	40-140			
4-Nitroaniline	2.60	0.333	mg/kg wet	3.333		78	40-140			
4-Nitrophenol	2.20	1.67	mg/kg wet	3.333		66	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	2.49	0.667	mg/kg wet	3.333		75	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52239 - 3546

Benzo(a)anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Benzo(a)pyrene	3.10	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.42	1.67	mg/kg wet	3.333		73	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Chloroethoxy)methane	2.61	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Chloroethyl)ether	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-chloroisopropyl)Ether	2.52	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140			
Carbazole	2.90	0.333	mg/kg wet	3.333		87	40-140			
Chrysene	2.95	0.167	mg/kg wet	3.333		88	40-140			
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		94	40-140			
Dibenzofuran	2.70	0.333	mg/kg wet	3.333		81	40-140			
Diethylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Dimethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.27	0.333	mg/kg wet	3.333		98	40-140			
Fluoranthene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Fluorene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Hexachlorobenzene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Hexachlorobutadiene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorocyclopentadiene	2.59	1.67	mg/kg wet	3.333		78	40-140			
Hexachloroethane	2.36	0.333	mg/kg wet	3.333		71	40-140			
Indeno(1,2,3-cd)Pyrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Nitrobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
N-Nitrosodimethylamine	1.68	0.333	mg/kg wet	3.333		50	40-140			
N-Nitroso-Di-n-Propylamine	2.52	0.333	mg/kg wet	3.333		76	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		83	40-140			
Pentachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
Phenanthrene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Phenol	2.72	0.333	mg/kg wet	3.333		81	30-130			
Pyrene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Pyridine	1.71	1.67	mg/kg wet	3.333		51	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.68		mg/kg wet	3.333		80	30-130			
Surrogate: 2,4,6-Tribromophenol	4.78		mg/kg wet	5.000		96	30-130			
Surrogate: 2-Chlorophenol-d4	4.04		mg/kg wet	5.000		81	30-130			
Surrogate: 2-Fluorobiphenyl	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	3.72		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			
Surrogate: Phenol-d6	3.86		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.15		mg/kg wet	3.333		95	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52239 - 3546

LCS Dup

1,1-Biphenyl	2.14	0.333	mg/kg wet	3.333		64	40-140	20	30	
1,2,4-Trichlorobenzene	2.11	0.333	mg/kg wet	3.333		63	40-140	26	30	
1,2-Dichlorobenzene	1.96	0.333	mg/kg wet	3.333		59	40-140	23	30	
1,3-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	23	30	
1,4-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	24	30	
2,3,4,6-Tetrachlorophenol	2.18	1.67	mg/kg wet	3.333		65	30-130	15	30	
2,4,5-Trichlorophenol	2.45	0.333	mg/kg wet	3.333		74	30-130	18	30	
2,4,6-Trichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	22	30	
2,4-Dichlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	24	30	
2,4-Dimethylphenol	2.18	0.333	mg/kg wet	3.333		66	30-130	25	30	
2,4-Dinitrophenol	2.24	1.67	mg/kg wet	3.333		67	30-130	9	30	
2,4-Dinitrotoluene	2.61	0.333	mg/kg wet	3.333		78	40-140	17	30	
2,6-Dinitrotoluene	2.34	0.333	mg/kg wet	3.333		70	40-140	21	30	
2-Chloronaphthalene	1.97	0.333	mg/kg wet	3.333		59	40-140	21	30	
2-Chlorophenol	2.07	0.333	mg/kg wet	3.333		62	30-130	20	30	
2-Methylnaphthalene	2.04	0.333	mg/kg wet	3.333		61	40-140	24	30	
2-Methylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130	23	30	
2-Nitroaniline	1.76	0.333	mg/kg wet	3.333		53	40-140	18	30	
2-Nitrophenol	2.13	0.333	mg/kg wet	3.333		64	30-130	28	30	
3,3'-Dichlorobenzidine	2.15	0.667	mg/kg wet	3.333		65	40-140	10	30	
3+4-Methylphenol	5.34	0.667	mg/kg wet	6.667		80	30-130	21	30	
3-Nitroaniline	2.13	0.333	mg/kg wet	3.333		64	40-140	17	30	
4,6-Dinitro-2-Methylphenol	2.91	1.67	mg/kg wet	3.333		87	30-130	16	30	
4-Bromophenyl-phenylether	2.47	0.333	mg/kg wet	3.333		74	40-140	17	30	
4-Chloro-3-Methylphenol	2.28	0.333	mg/kg wet	3.333		68	30-130	23	30	
4-Chloroaniline	1.72	0.667	mg/kg wet	3.333		52	40-140	27	30	
4-Chloro-phenyl-phenyl ether	2.49	0.333	mg/kg wet	3.333		75	40-140	18	30	
4-Nitroaniline	2.24	0.333	mg/kg wet	3.333		67	40-140	15	30	
4-Nitrophenol	1.89	1.67	mg/kg wet	3.333		57	30-130	15	30	
Acenaphthene	2.30	0.333	mg/kg wet	3.333		69	40-140	19	30	
Acenaphthylene	2.30	0.333	mg/kg wet	3.333		69	40-140	20	30	
Acetophenone	2.00	0.667	mg/kg wet	3.333		60	40-140	22	30	
Aniline	1.50	0.667	mg/kg wet	3.333		45	40-140	21	30	
Anthracene	2.50	0.333	mg/kg wet	3.333		75	40-140	17	30	
Azobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	20	30	
Benzo(a)anthracene	2.62	0.333	mg/kg wet	3.333		79	40-140	13	30	
Benzo(a)pyrene	2.74	0.167	mg/kg wet	3.333		82	40-140	12	30	
Benzo(b)fluoranthene	2.60	0.333	mg/kg wet	3.333		78	40-140	15	30	
Benzo(g,h,i)perylene	2.42	0.333	mg/kg wet	3.333		73	40-140	11	30	
Benzo(k)fluoranthene	2.50	0.333	mg/kg wet	3.333		75	40-140	14	30	
Benzoic Acid	2.02	1.67	mg/kg wet	3.333		61	40-140	18	30	
Benzyl Alcohol	2.09	0.333	mg/kg wet	3.333		63	40-140	25	30	
bis(2-Chloroethoxy)methane	2.03	0.333	mg/kg wet	3.333		61	40-140	25	30	
bis(2-Chloroethyl)ether	1.76	0.333	mg/kg wet	3.333		53	40-140	25	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

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 CJ52239 - 3546

bis(2-chloroisopropyl)Ether	1.96	0.333	mg/kg wet	3.333		59	40-140	25	30	
bis(2-Ethylhexyl)phthalate	2.66	0.333	mg/kg wet	3.333		80	40-140	13	30	
Butylbenzylphthalate	2.45	0.333	mg/kg wet	3.333		73	40-140	13	30	
Carbazole	2.49	0.333	mg/kg wet	3.333		75	40-140	15	30	
Chrysene	2.55	0.167	mg/kg wet	3.333		77	40-140	14	30	
Dibenzo(a,h)Anthracene	2.73	0.167	mg/kg wet	3.333		82	40-140	14	30	
Dibenzofuran	2.23	0.333	mg/kg wet	3.333		67	40-140	19	30	
Diethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	17	30	
Dimethylphthalate	2.36	0.333	mg/kg wet	3.333		71	40-140	17	30	
Di-n-butylphthalate	2.50	0.333	mg/kg wet	3.333		75	40-140	13	30	
Di-n-octylphthalate	2.81	0.333	mg/kg wet	3.333		84	40-140	15	30	
Fluoranthene	2.71	0.333	mg/kg wet	3.333		81	40-140	14	30	
Fluorene	2.45	0.333	mg/kg wet	3.333		73	40-140	19	30	
Hexachlorobenzene	2.48	0.167	mg/kg wet	3.333		74	40-140	17	30	
Hexachlorobutadiene	2.22	0.333	mg/kg wet	3.333		67	40-140	27	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	23	30	
Hexachloroethane	1.88	0.333	mg/kg wet	3.333		56	40-140	23	30	
Indeno(1,2,3-cd)Pyrene	2.27	0.333	mg/kg wet	3.333		68	40-140	15	30	
Isophorone	2.10	0.333	mg/kg wet	3.333		63	40-140	24	30	
Naphthalene	2.02	0.333	mg/kg wet	3.333		61	40-140	26	30	
Nitrobenzene	1.89	0.333	mg/kg wet	3.333		57	40-140	27	30	
N-Nitrosodimethylamine	1.31	0.333	mg/kg wet	3.333		39	40-140	25	30	B-
N-Nitroso-Di-n-Propylamine	2.10	0.333	mg/kg wet	3.333		63	40-140	18	30	
N-nitrosodiphenylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	19	30	
Pentachlorophenol	2.20	1.67	mg/kg wet	3.333		66	30-130	13	30	
Phenanthrene	2.31	0.333	mg/kg wet	3.333		69	40-140	18	30	
Phenol	2.17	0.333	mg/kg wet	3.333		65	30-130	22	30	
Pyrene	2.54	0.333	mg/kg wet	3.333		76	40-140	15	30	
Pyridine	1.32	1.67	mg/kg wet	3.333		40	40-140	25	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.06		mg/kg wet	3.333		62	30-130			
Surrogate: 2,4,6-Tribromophenol	3.95		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.07		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.28		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.83		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.10		mg/kg wet	3.333		63	30-130			
Surrogate: Phenol-d6	3.01		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.54		mg/kg wet	3.333		76	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510590

Notes and Definitions

- Z-10 Soil pH measured in water at 21.1 °C.
- U Analyte included in the analysis, but not detected
- S+ Surrogate recovery(ies) above upper control limit (S+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above 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.
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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: 15100590
 Date Project Due: 10/26/15
 Days For Project: 3 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

* No

10. Are the samples properly preserved?

Yes

Air No.:

11. Proper sample containers used?

Yes

2. Were Custody Seals Present?

No

12. Any air bubbles in the VOA vials?

N/A

3. Were Custody Seals Intact?

N/A

13. Holding times exceeded?

No

4. Is Radiation count < 100 CPM?

Yes

14. Sufficient sample volumes?

Yes

5. Is a cooler present?

Yes

15. Any Subcontracting needed?

No

Cooler Temp: 3.8

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 @ 1715 JL 10/21/15

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: 10/21/15 1457

Reviewed By: [Signature]

Date/Time: 10/21/15 1657



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: 1510591

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 10:02 am, Oct 28, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

SAMPLE RECEIPT

The following samples were received on October 21, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on October 21, 2015 at 17:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510591-01	Lopes - Raynham 20% Org Y	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: 1510591

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ52244-BS1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (187% @ 70-130%)

CJ52244-BS1 **Blank Spike recovery is below lower control limit (B-).**

1,2,3-Trichlorobenzene (69% @ 70-130%), Hexachlorobutadiene (68% @ 70-130%), Naphthalene (64% @ 70-130%)

CJ52244-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (186% @ 70-130%)

CJ52244-BSD1 **Blank Spike recovery is below lower control limit (B-).**

1,2,4-Trichlorobenzene (67% @ 70-130%), Hexachlorobutadiene (67% @ 70-130%), Naphthalene (66% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0308-CCV2 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

Tetradecane (C14) (21% @ 20%), Total Petroleum Hydrocarbons (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CJ52239-BSD1 **Blank Spike recovery is below lower control limit (B-).**

N-Nitrosodimethylamine (39% @ 40-140%)

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: 1510591

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	4.10 (2.29)		6010C		1	JP	10/26/15 16:05	2.21	100	CJ52213
Barium	20.8 (2.29)		6010C		1	JP	10/26/15 16:05	2.21	100	CJ52213
Cadmium	ND (0.46)		6010C		1	JP	10/26/15 16:05	2.21	100	CJ52213
Chromium	7.34 (0.92)		6010C		1	JP	10/26/15 16:05	2.21	100	CJ52213
Lead	23.3 (4.58)		6010C		1	JP	10/26/15 16:05	2.21	100	CJ52213
Mercury	0.035 (0.032)		7471B		1	PJP	10/22/15 15:34	0.63	40	CJ52215
Selenium	ND (22.9)		6010C		5	JP	10/26/15 15:45	2.21	100	CJ52213
Silver	ND (0.46)		6010C		1	JP	10/26/15 16:05	2.21	100	CJ52213



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99
Initial Volume: 4.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
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 (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,1,1-Trichloroethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,1,2,2-Tetrachloroethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,1,2-Trichloroethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,1-Dichloroethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,1-Dichloroethene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,1-Dichloropropene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2,3-Trichlorobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2,3-Trichloropropane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2,4-Trichlorobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2,4-Trimethylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2-Dibromo-3-Chloropropane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2-Dibromoethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2-Dichlorobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2-Dichloroethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,2-Dichloropropane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,3,5-Trimethylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,3-Dichlorobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,3-Dichloropropane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,4-Dichlorobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1,4-Dioxane	ND (0.105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
1-Chlorohexane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
2,2-Dichloropropane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
2-Butanone	ND (0.0527)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
2-Chlorotoluene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
2-Hexanone	ND (0.0527)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
4-Chlorotoluene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
4-Isopropyltoluene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
4-Methyl-2-Pentanone	ND (0.0527)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Acetone	ND (0.0527)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Benzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Bromobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99
Initial Volume: 4.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
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 (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Bromodichloromethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Bromoform	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Bromomethane	ND (0.0105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Carbon Disulfide	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Carbon Tetrachloride	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Chlorobenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Chloroethane	ND (0.0105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Chloroform	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Chloromethane	ND (0.0105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
cis-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
cis-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Dibromochloromethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Dibromomethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Dichlorodifluoromethane	ND (0.0105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Diethyl Ether	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Di-isopropyl ether	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Ethyl tertiary-butyl ether	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Ethylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Hexachlorobutadiene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Isopropylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Methyl tert-Butyl Ether	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Methylene Chloride	ND (0.0263)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Naphthalene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
n-Butylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
n-Propylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
sec-Butylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Styrene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
tert-Butylbenzene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Tertiary-amyl methyl ether	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Tetrachloroethene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Tetrahydrofuran	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99
Initial Volume: 4.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
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 (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
trans-1,2-Dichloroethene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
trans-1,3-Dichloropropene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Trichloroethene	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Trichlorofluoromethane	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Vinyl Acetate	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Vinyl Chloride	ND (0.0105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Xylene O	ND (0.0053)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Xylene P,M	ND (0.0105)		8260B Low		1	10/22/15 19:40	CYJ0291	CJ52244
Xylenes (Total)	ND (0.0105)		8260B Low		1	10/22/15 19:40		[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>88 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 10/22/15 12:43

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	170 (39.3)		8100M		1	10/22/15 21:01	CYJ0308	CJ52237
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		71 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
1,2,4-Trichlorobenzene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
1,2-Dichlorobenzene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
1,3-Dichlorobenzene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
1,4-Dichlorobenzene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,3,4,6-Tetrachlorophenol	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,4,5-Trichlorophenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,4,6-Trichlorophenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,4-Dichlorophenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,4-Dimethylphenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,4-Dinitrophenol	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,4-Dinitrotoluene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2,6-Dinitrotoluene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2-Chloronaphthalene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2-Chlorophenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2-Methylnaphthalene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2-Methylphenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2-Nitroaniline	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
2-Nitrophenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
3,3'-Dichlorobenzidine	ND (0.698)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
3+4-Methylphenol	ND (0.698)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
3-Nitroaniline	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4,6-Dinitro-2-Methylphenol	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4-Bromophenyl-phenylether	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4-Chloro-3-Methylphenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4-Chloroaniline	ND (0.698)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4-Chloro-phenyl-phenyl ether	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4-Nitroaniline	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
4-Nitrophenol	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Acenaphthene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Acenaphthylene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Acetophenone	ND (0.698)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.698)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Anthracene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Azobenzene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzo(a)anthracene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzo(a)pyrene	0.326 (0.175)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzo(b)fluoranthene	0.403 (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzo(g,h,i)perylene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzo(k)fluoranthene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzoic Acid	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Benzyl Alcohol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
bis(2-Chloroethoxy)methane	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
bis(2-Chloroethyl)ether	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
bis(2-chloroisopropyl)Ether	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
bis(2-Ethylhexyl)phthalate	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Butylbenzylphthalate	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Carbazole	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Chrysene	0.394 (0.175)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Dibenzo(a,h)Anthracene	ND (0.175)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Dibenzofuran	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Diethylphthalate	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Dimethylphthalate	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Di-n-butylphthalate	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Di-n-octylphthalate	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Fluoranthene	0.643 (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Fluorene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Hexachlorobenzene	ND (0.175)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Hexachlorobutadiene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Hexachlorocyclopentadiene	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Hexachloroethane	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Indeno(1,2,3-cd)Pyrene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Isophorone	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Naphthalene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes - Raynham 20% Org Y
 Date Sampled: 10/21/15 13:40
 Percent Solids: 99
 Initial Volume: 14.5
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510591
 ESS Laboratory Sample ID: 1510591-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 10/22/15 13:21

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
N-Nitrosodimethylamine	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
N-Nitroso-Di-n-Propylamine	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
N-nitrosodiphenylamine	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Pentachlorophenol	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Phenanthrene	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Phenol	ND (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Pyrene	0.469 (0.349)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239
Pyridine	ND (1.75)		8270D		1	10/23/15 17:38	CYJ0297	CJ52239

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	39 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	56 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	43 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	49 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	37 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	43 %		30-130
<i>Surrogate: Phenol-d6</i>	44 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	54 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20% Org Y
Date Sampled: 10/21/15 13:40
Percent Solids: 99

ESS Laboratory Work Order: 1510591
ESS Laboratory Sample ID: 1510591-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.22 (N/A)		9045		1	EEM	10/21/15 18:10	S.U.	CJ52104
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: 1510591

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 CJ52213 - 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	128	9.43	mg/kg wet	139.0	92	80-120
Barium	183	9.43	mg/kg wet	203.0	90	80-120
Cadmium	78.8	1.89	mg/kg wet	96.00	82	80-120
Chromium	126	3.77	mg/kg wet	136.0	93	80-120
Lead	123	18.9	mg/kg wet	133.0	93	80-120
Silver	36.5	1.89	mg/kg wet	40.20	91	80-120

LCS

Selenium	68.4	20.0	mg/kg wet	81.10	84	80-120
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LCS Dup

Arsenic	139	8.93	mg/kg wet	139.0	100	80-120	9	20
Barium	199	8.93	mg/kg wet	203.0	98	80-120	9	20
Cadmium	84.8	1.79	mg/kg wet	96.00	88	80-120	7	20
Chromium	140	3.57	mg/kg wet	136.0	103	80-120	10	20
Lead	136	17.9	mg/kg wet	133.0	102	80-120	9	20
Silver	39.5	1.79	mg/kg wet	40.20	98	80-120	8	20

LCS Dup

Selenium	68.0	19.2	mg/kg wet	81.10	84	80-120	0.6	20
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Batch CJ52215 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	12.9	1.98	mg/kg wet	12.90	100	80-120
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LCS Dup

Mercury	13.6	1.94	mg/kg wet	12.90	105	80-120	5	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - 5035

Blank

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52244 - 5035

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52244 - 5035

Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0573		mg/kg wet	0.05000		115	70-130			
Surrogate: 4-Bromofluorobenzene	0.0479		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0526		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0521		mg/kg wet	0.05000		104	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,1-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
1,1-Dichloroethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
1,1-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0344	0.0050	mg/kg wet	0.05000		69	70-130			B-
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trichlorobenzene	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
1,2,4-Trimethylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromo-3-Chloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloroethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130			
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3,5-Trimethylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52244 - 5035

1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130			
2-Chlorotoluene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Hexanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
4-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
4-Isopropyltoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
Acetone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Benzene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Bromochloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromomethane	0.0507	0.0100	mg/kg wet	0.05000		101	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Chlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Chloroethane	0.0501	0.0100	mg/kg wet	0.05000		100	70-130			
Chloroform	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Chloromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
cis-1,3-Dichloropropene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromochloromethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130			
Dibromomethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Ethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0342	0.0050	mg/kg wet	0.05000		68	70-130			B-
Isopropylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0600	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0322	0.0050	mg/kg wet	0.05000		64	70-130			B-
n-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
n-Propylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
sec-Butylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Styrene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
tert-Butylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Tertiary-amyl methyl ether	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52244 - 5035

Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Toluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,3-Dichloropropene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Trichlorofluoromethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Acetate	0.0934	0.0050	mg/kg wet	0.05000		187	70-130			B+
Vinyl Chloride	0.0479	0.0100	mg/kg wet	0.05000		96	70-130			
Xylene O	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0972	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0497		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0500		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
1,1,1-Trichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	0.7	25	
1,1,2-Trichloroethane	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
1,1-Dichloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	0.2	25	
1,1-Dichloroethene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.6	25	
1,1-Dichloropropene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
1,2,3-Trichlorobenzene	0.0369	0.0050	mg/kg wet	0.05000		74	70-130	7	25	
1,2,3-Trichloropropane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	4	25	
1,2,4-Trichlorobenzene	0.0334	0.0050	mg/kg wet	0.05000		67	70-130	13	25	B-
1,2,4-Trimethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.8	25	
1,2-Dibromo-3-Chloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	7	25	
1,2-Dibromoethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	0.4	25	
1,2-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.1	25	
1,2-Dichloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	4	25	
1,2-Dichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
1,3,5-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
1,3-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.8	25	
1,3-Dichloropropane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
1,4-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
1,4-Dioxane	1.12	0.100	mg/kg wet	1.000		112	70-130	3	20	
1-Chlorohexane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
2,2-Dichloropropane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	0.4	25	
2-Butanone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	0.4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	10	25	
2-Hexanone	0.284	0.0500	mg/kg wet	0.2500		114	70-130	3	25	
4-Chlorotoluene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
4-Isopropyltoluene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	2	25	



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ESS Laboratory Work Order: 1510591

Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - 5035

4-Methyl-2-Pentanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130	0.2	25	
Acetone	0.311	0.0500	mg/kg wet	0.2500		124	70-130	3	25	
Benzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	1	25	
Bromobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
Bromodichloromethane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Bromoform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	0.8	25	
Bromomethane	0.0496	0.0100	mg/kg wet	0.05000		99	70-130	2	25	
Carbon Disulfide	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	1	25	
Carbon Tetrachloride	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	1	25	
Chlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.3	25	
Chloroethane	0.0467	0.0100	mg/kg wet	0.05000		93	70-130	7	25	
Chloroform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Chloromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130	3	25	
cis-1,2-Dichloroethene	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	1	25	
cis-1,3-Dichloropropene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	25	
Dibromochloromethane	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	0.6	25	
Dibromomethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	3	25	
Diethyl Ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.7	25	
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Ethyl tertiary-butyl ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
Ethylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	0.4	25	
Hexachlorobutadiene	0.0334	0.0050	mg/kg wet	0.05000		67	70-130	2	25	B-
Isopropylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Methyl tert-Butyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
Methylene Chloride	0.0581	0.0250	mg/kg wet	0.05000		116	70-130	3	25	
Naphthalene	0.0329	0.0050	mg/kg wet	0.05000		66	70-130	2	25	B-
n-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	0.9	25	
n-Propylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
sec-Butylbenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Styrene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.2	25	
tert-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Tertiary-amyl methyl ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
Tetrachloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	0.2	25	
Tetrahydrofuran	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	8	25	
Toluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
trans-1,2-Dichloroethene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
trans-1,3-Dichloropropene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Trichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Trichlorofluoromethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	1	25	
Vinyl Acetate	0.0930	0.0050	mg/kg wet	0.05000		186	70-130	0.4	25	B+
Vinyl Chloride	0.0473	0.0100	mg/kg wet	0.05000		95	70-130	1	25	
Xylene O	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Xylene P,M	0.0971	0.0100	mg/kg wet	0.1000		97	70-130	0.1	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - [CALC]

Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ52237 - 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)	1.7	0.2	mg/kg wet	2.500		68	40-140			
Docosane (C22)	2.7	0.2	mg/kg wet	2.500		110	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Hexacosane (C26)	2.8	0.2	mg/kg wet	2.500		112	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonadecane (C19)	3.2	0.2	mg/kg wet	2.500		126	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		109	40-140			
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Total Petroleum Hydrocarbons	37.5	37.5	mg/kg wet	35.00		107	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		109	40-140			

Surrogate: O-Terphenyl	4.32		mg/kg wet	5.000		86	40-140			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	0.9	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		113	40-140	2	25	



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Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CJ52237 - 3546

Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		98	40-140	3	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140	2	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		106	40-140	5	25	
Nonadecane (C19)	3.2	0.2	mg/kg wet	2.500		129	40-140	2	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		70	30-140	0.7	25	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		108	40-140	3	25	
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		106	40-140	2	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		99	40-140	5	25	
Total Petroleum Hydrocarbons	37.6	37.5	mg/kg wet	35.00		108	40-140	0.3	25	
Triacotane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	

Surrogate: O-Terphenyl 4.35 mg/kg wet 5.000 87 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

Blank

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



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8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

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



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.92		mg/kg wet	3.333		88	30-130			
Surrogate: 2,4,6-Tribromophenol	4.34		mg/kg wet	5.000		87	30-130			
Surrogate: 2-Chlorophenol-d4	4.23		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.00		mg/kg wet	5.000		80	30-130			
Surrogate: Nitrobenzene-d5	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			

LCS

1,1-Biphenyl	2.62	0.333	mg/kg wet	3.333		78	40-140			
1,2,4-Trichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,2-Dichlorobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
1,3-Dichlorobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140			
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
2,3,4,6-Tetrachlorophenol	2.53	1.67	mg/kg wet	3.333		76	30-130			
2,4,5-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dichlorophenol	2.95	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dimethylphenol	2.80	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	3.10	0.333	mg/kg wet	3.333		93	40-140			
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140			
2-Chlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2-Methylnaphthalene	2.60	0.333	mg/kg wet	3.333		78	40-140			
2-Methylphenol	2.60	0.333	mg/kg wet	3.333		78	30-130			
2-Nitroaniline	2.12	0.333	mg/kg wet	3.333		64	40-140			
2-Nitrophenol	2.81	0.333	mg/kg wet	3.333		84	30-130			
3,3'-Dichlorobenzidine	2.37	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	6.62	0.667	mg/kg wet	6.667		99	30-130			
3-Nitroaniline	2.54	0.333	mg/kg wet	3.333		76	40-140			
4,6-Dinitro-2-Methylphenol	3.41	1.67	mg/kg wet	3.333		102	30-130			
4-Bromophenyl-phenylether	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130			
4-Chloroaniline	2.27	0.667	mg/kg wet	3.333		68	40-140			
4-Chloro-phenyl-phenyl ether	2.98	0.333	mg/kg wet	3.333		89	40-140			
4-Nitroaniline	2.60	0.333	mg/kg wet	3.333		78	40-140			
4-Nitrophenol	2.20	1.67	mg/kg wet	3.333		66	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	2.49	0.667	mg/kg wet	3.333		75	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52239 - 3546

Benzo(a)anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Benzo(a)pyrene	3.10	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.42	1.67	mg/kg wet	3.333		73	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Chloroethoxy)methane	2.61	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Chloroethyl)ether	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-chloroisopropyl)Ether	2.52	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140			
Carbazole	2.90	0.333	mg/kg wet	3.333		87	40-140			
Chrysene	2.95	0.167	mg/kg wet	3.333		88	40-140			
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		94	40-140			
Dibenzofuran	2.70	0.333	mg/kg wet	3.333		81	40-140			
Diethylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Dimethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.27	0.333	mg/kg wet	3.333		98	40-140			
Fluoranthene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Fluorene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Hexachlorobenzene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Hexachlorobutadiene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorocyclopentadiene	2.59	1.67	mg/kg wet	3.333		78	40-140			
Hexachloroethane	2.36	0.333	mg/kg wet	3.333		71	40-140			
Indeno(1,2,3-cd)Pyrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Nitrobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
N-Nitrosodimethylamine	1.68	0.333	mg/kg wet	3.333		50	40-140			
N-Nitroso-Di-n-Propylamine	2.52	0.333	mg/kg wet	3.333		76	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		83	40-140			
Pentachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
Phenanthrene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Phenol	2.72	0.333	mg/kg wet	3.333		81	30-130			
Pyrene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Pyridine	1.71	1.67	mg/kg wet	3.333		51	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.68		mg/kg wet	3.333		80	30-130			
Surrogate: 2,4,6-Tribromophenol	4.78		mg/kg wet	5.000		96	30-130			
Surrogate: 2-Chlorophenol-d4	4.04		mg/kg wet	5.000		81	30-130			
Surrogate: 2-Fluorobiphenyl	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	3.72		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			
Surrogate: Phenol-d6	3.86		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.15		mg/kg wet	3.333		95	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52239 - 3546

LCS Dup

1,1-Biphenyl	2.14	0.333	mg/kg wet	3.333		64	40-140	20	30	
1,2,4-Trichlorobenzene	2.11	0.333	mg/kg wet	3.333		63	40-140	26	30	
1,2-Dichlorobenzene	1.96	0.333	mg/kg wet	3.333		59	40-140	23	30	
1,3-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	23	30	
1,4-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	24	30	
2,3,4,6-Tetrachlorophenol	2.18	1.67	mg/kg wet	3.333		65	30-130	15	30	
2,4,5-Trichlorophenol	2.45	0.333	mg/kg wet	3.333		74	30-130	18	30	
2,4,6-Trichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	22	30	
2,4-Dichlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	24	30	
2,4-Dimethylphenol	2.18	0.333	mg/kg wet	3.333		66	30-130	25	30	
2,4-Dinitrophenol	2.24	1.67	mg/kg wet	3.333		67	30-130	9	30	
2,4-Dinitrotoluene	2.61	0.333	mg/kg wet	3.333		78	40-140	17	30	
2,6-Dinitrotoluene	2.34	0.333	mg/kg wet	3.333		70	40-140	21	30	
2-Chloronaphthalene	1.97	0.333	mg/kg wet	3.333		59	40-140	21	30	
2-Chlorophenol	2.07	0.333	mg/kg wet	3.333		62	30-130	20	30	
2-Methylnaphthalene	2.04	0.333	mg/kg wet	3.333		61	40-140	24	30	
2-Methylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130	23	30	
2-Nitroaniline	1.76	0.333	mg/kg wet	3.333		53	40-140	18	30	
2-Nitrophenol	2.13	0.333	mg/kg wet	3.333		64	30-130	28	30	
3,3'-Dichlorobenzidine	2.15	0.667	mg/kg wet	3.333		65	40-140	10	30	
3+4-Methylphenol	5.34	0.667	mg/kg wet	6.667		80	30-130	21	30	
3-Nitroaniline	2.13	0.333	mg/kg wet	3.333		64	40-140	17	30	
4,6-Dinitro-2-Methylphenol	2.91	1.67	mg/kg wet	3.333		87	30-130	16	30	
4-Bromophenyl-phenylether	2.47	0.333	mg/kg wet	3.333		74	40-140	17	30	
4-Chloro-3-Methylphenol	2.28	0.333	mg/kg wet	3.333		68	30-130	23	30	
4-Chloroaniline	1.72	0.667	mg/kg wet	3.333		52	40-140	27	30	
4-Chloro-phenyl-phenyl ether	2.49	0.333	mg/kg wet	3.333		75	40-140	18	30	
4-Nitroaniline	2.24	0.333	mg/kg wet	3.333		67	40-140	15	30	
4-Nitrophenol	1.89	1.67	mg/kg wet	3.333		57	30-130	15	30	
Acenaphthene	2.30	0.333	mg/kg wet	3.333		69	40-140	19	30	
Acenaphthylene	2.30	0.333	mg/kg wet	3.333		69	40-140	20	30	
Acetophenone	2.00	0.667	mg/kg wet	3.333		60	40-140	22	30	
Aniline	1.50	0.667	mg/kg wet	3.333		45	40-140	21	30	
Anthracene	2.50	0.333	mg/kg wet	3.333		75	40-140	17	30	
Azobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	20	30	
Benzo(a)anthracene	2.62	0.333	mg/kg wet	3.333		79	40-140	13	30	
Benzo(a)pyrene	2.74	0.167	mg/kg wet	3.333		82	40-140	12	30	
Benzo(b)fluoranthene	2.60	0.333	mg/kg wet	3.333		78	40-140	15	30	
Benzo(g,h,i)perylene	2.42	0.333	mg/kg wet	3.333		73	40-140	11	30	
Benzo(k)fluoranthene	2.50	0.333	mg/kg wet	3.333		75	40-140	14	30	
Benzoic Acid	2.02	1.67	mg/kg wet	3.333		61	40-140	18	30	
Benzyl Alcohol	2.09	0.333	mg/kg wet	3.333		63	40-140	25	30	
bis(2-Chloroethoxy)methane	2.03	0.333	mg/kg wet	3.333		61	40-140	25	30	
bis(2-Chloroethyl)ether	1.76	0.333	mg/kg wet	3.333		53	40-140	25	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

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 CJ52239 - 3546

bis(2-chloroisopropyl)Ether	1.96	0.333	mg/kg wet	3.333		59	40-140	25	30	
bis(2-Ethylhexyl)phthalate	2.66	0.333	mg/kg wet	3.333		80	40-140	13	30	
Butylbenzylphthalate	2.45	0.333	mg/kg wet	3.333		73	40-140	13	30	
Carbazole	2.49	0.333	mg/kg wet	3.333		75	40-140	15	30	
Chrysene	2.55	0.167	mg/kg wet	3.333		77	40-140	14	30	
Dibenzo(a,h)Anthracene	2.73	0.167	mg/kg wet	3.333		82	40-140	14	30	
Dibenzofuran	2.23	0.333	mg/kg wet	3.333		67	40-140	19	30	
Diethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	17	30	
Dimethylphthalate	2.36	0.333	mg/kg wet	3.333		71	40-140	17	30	
Di-n-butylphthalate	2.50	0.333	mg/kg wet	3.333		75	40-140	13	30	
Di-n-octylphthalate	2.81	0.333	mg/kg wet	3.333		84	40-140	15	30	
Fluoranthene	2.71	0.333	mg/kg wet	3.333		81	40-140	14	30	
Fluorene	2.45	0.333	mg/kg wet	3.333		73	40-140	19	30	
Hexachlorobenzene	2.48	0.167	mg/kg wet	3.333		74	40-140	17	30	
Hexachlorobutadiene	2.22	0.333	mg/kg wet	3.333		67	40-140	27	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	23	30	
Hexachloroethane	1.88	0.333	mg/kg wet	3.333		56	40-140	23	30	
Indeno(1,2,3-cd)Pyrene	2.27	0.333	mg/kg wet	3.333		68	40-140	15	30	
Isophorone	2.10	0.333	mg/kg wet	3.333		63	40-140	24	30	
Naphthalene	2.02	0.333	mg/kg wet	3.333		61	40-140	26	30	
Nitrobenzene	1.89	0.333	mg/kg wet	3.333		57	40-140	27	30	
N-Nitrosodimethylamine	1.31	0.333	mg/kg wet	3.333		39	40-140	25	30	B-
N-Nitroso-Di-n-Propylamine	2.10	0.333	mg/kg wet	3.333		63	40-140	18	30	
N-nitrosodiphenylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	19	30	
Pentachlorophenol	2.20	1.67	mg/kg wet	3.333		66	30-130	13	30	
Phenanthrene	2.31	0.333	mg/kg wet	3.333		69	40-140	18	30	
Phenol	2.17	0.333	mg/kg wet	3.333		65	30-130	22	30	
Pyrene	2.54	0.333	mg/kg wet	3.333		76	40-140	15	30	
Pyridine	1.32	1.67	mg/kg wet	3.333		40	40-140	25	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.06		mg/kg wet	3.333		62	30-130			
Surrogate: 2,4,6-Tribromophenol	3.95		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.07		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.28		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.83		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.10		mg/kg wet	3.333		63	30-130			
Surrogate: Phenol-d6	3.01		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.54		mg/kg wet	3.333		76	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510591

Notes and Definitions

- Z-10 Soil pH measured in water at 20.9 °C.
- U Analyte included in the analysis, but not detected
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above 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: 1510591

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: 15100591
 Date Project Due: 10/26/15
 Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|---|------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> *No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <input type="text" value="Cooler Temp: 3.8"/> | | 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 @ 1715 JE 10/21/15

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: 10/21/15 1500
 Reviewed By: [Signature] Date/Time: 10/21/15 1651



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: 1510592

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 10:03 am, Oct 28, 2015

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

SAMPLE RECEIPT

The following samples were received on October 21, 2015 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on October 21, 2015 at 17:15.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510592-01	Lopes - Raynham 20%Org Z	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: 1510592

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CJ52244-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (187% @ 70-130%)

CJ52244-BS1 [Blank Spike recovery is below lower control limit \(B-\).](#)

1,2,3-Trichlorobenzene (69% @ 70-130%), Hexachlorobutadiene (68% @ 70-130%), Naphthalene (64% @ 70-130%)

CJ52244-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Vinyl Acetate (186% @ 70-130%)

CJ52244-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

1,2,4-Trichlorobenzene (67% @ 70-130%), Hexachlorobutadiene (67% @ 70-130%), Naphthalene (66% @ 70-130%)

8100M Total Petroleum Hydrocarbons

CYJ0308-CCV2 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Tetradecane (C14) (21% @ 20%), Total Petroleum Hydrocarbons (22% @ 20%)

8270D Semi-Volatile Organic Compounds

1510592-01 [Surrogate recovery\(ies\) below lower control limit \(S-\).](#)

2-Fluorophenol (29% @ 30-130%)

CJ52239-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

N-Nitrosodimethylamine (39% @ 40-140%)

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: 1510592

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

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

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

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



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	4.36 (2.20)		6010C		1	JP	10/26/15 16:09	2.3	100	CJ52213
Barium	21.5 (2.20)		6010C		1	JP	10/26/15 16:09	2.3	100	CJ52213
Cadmium	ND (0.44)		6010C		1	JP	10/26/15 16:09	2.3	100	CJ52213
Chromium	7.41 (0.88)		6010C		1	JP	10/26/15 16:09	2.3	100	CJ52213
Lead	24.8 (4.41)		6010C		1	JP	10/26/15 16:09	2.3	100	CJ52213
Mercury	0.043 (0.030)		7471B		1	PJP	10/22/15 15:36	0.67	40	CJ52215
Selenium	ND (22.0)		6010C		5	JP	10/26/15 15:49	2.3	100	CJ52213
Silver	ND (0.44)		6010C		1	JP	10/26/15 16:09	2.3	100	CJ52213



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,1,2,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1,4-Dioxane	ND (0.101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
1-Chlorohexane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
2-Butanone	ND (0.0507)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
2-Chlorotoluene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
2-Hexanone	ND (0.0507)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
4-Chlorotoluene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
4-Methyl-2-Pentanone	ND (0.0507)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Acetone	ND (0.0507)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Benzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Bromobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Bromodichloromethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Bromoform	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Bromomethane	ND (0.0101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Carbon Disulfide	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Chlorobenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Chloroethane	ND (0.0101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Chloroform	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Chloromethane	ND (0.0101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Dibromochloromethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Dibromomethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Dichlorodifluoromethane	ND (0.0101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Diethyl Ether	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Di-isopropyl ether	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Ethylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Isopropylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Methylene Chloride	ND (0.0254)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Naphthalene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
n-Butylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
n-Propylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
sec-Butylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Styrene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
tert-Butylbenzene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Tetrachloroethene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Tetrahydrofuran	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes - Raynham 20%Org Z
 Date Sampled: 10/21/15 13:50
 Percent Solids: 99
 Initial Volume: 5
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1510592
 ESS Laboratory Sample ID: 1510592-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Trichloroethene	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Vinyl Acetate	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Vinyl Chloride	ND (0.0101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Xylene O	ND (0.0051)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Xylene P,M	ND (0.0101)		8260B Low		1	10/22/15 14:56	CYJ0291	CJ52244
Xylenes (Total)	ND (0.0101)		8260B Low		1	10/22/15 14:56		[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>88 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>116 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 10/22/15 12:43

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	232 (39.4)		8100M		1	10/22/15 21:40	CYJ0308	CJ52237
		<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: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

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 (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
1,2,4-Trichlorobenzene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
1,2-Dichlorobenzene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
1,3-Dichlorobenzene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
1,4-Dichlorobenzene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,3,4,6-Tetrachlorophenol	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,4,5-Trichlorophenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,4,6-Trichlorophenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,4-Dichlorophenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,4-Dimethylphenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,4-Dinitrophenol	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,4-Dinitrotoluene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2,6-Dinitrotoluene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2-Chloronaphthalene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2-Chlorophenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2-Methylnaphthalene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2-Methylphenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2-Nitroaniline	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
2-Nitrophenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
3,3'-Dichlorobenzidine	ND (0.676)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
3+4-Methylphenol	ND (0.676)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
3-Nitroaniline	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4,6-Dinitro-2-Methylphenol	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4-Bromophenyl-phenylether	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4-Chloro-3-Methylphenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4-Chloroaniline	ND (0.676)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4-Chloro-phenyl-phenyl ether	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4-Nitroaniline	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
4-Nitrophenol	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Acenaphthene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Acenaphthylene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Acetophenone	ND (0.676)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 10/22/15 13:21

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 (0.676)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Anthracene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Azobenzene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzo(a)anthracene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzo(a)pyrene	0.221 (0.169)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzo(b)fluoranthene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzo(g,h,i)perylene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzo(k)fluoranthene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzoic Acid	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Benzyl Alcohol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
bis(2-Chloroethoxy)methane	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
bis(2-Chloroethyl)ether	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
bis(2-chloroisopropyl)Ether	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
bis(2-Ethylhexyl)phthalate	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Butylbenzylphthalate	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Carbazole	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Chrysene	0.265 (0.169)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Dibenzo(a,h)Anthracene	ND (0.169)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Dibenzofuran	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Diethylphthalate	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Dimethylphthalate	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Di-n-butylphthalate	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Di-n-octylphthalate	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Fluoranthene	0.474 (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Fluorene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Hexachlorobenzene	ND (0.169)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Hexachlorobutadiene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Hexachlorocyclopentadiene	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Hexachloroethane	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Indeno(1,2,3-cd)Pyrene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Isophorone	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Naphthalene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
 Client Project ID: Textron Providence
 Client Sample ID: Lopes - Raynham 20%Org Z
 Date Sampled: 10/21/15 13:50
 Percent Solids: 99
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1510592
 ESS Laboratory Sample ID: 1510592-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 10/22/15 13:21

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 (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
N-Nitrosodimethylamine	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
N-Nitroso-Di-n-Propylamine	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
N-nitrosodiphenylamine	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Pentachlorophenol	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Phenanthrene	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Phenol	ND (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Pyrene	0.340 (0.338)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239
Pyridine	ND (1.69)		8270D		1	10/23/15 18:13	CYJ0297	CJ52239

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	31 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	51 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	35 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	41 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	29 %	S-	30-130
<i>Surrogate: Nitrobenzene-d5</i>	37 %		30-130
<i>Surrogate: Phenol-d6</i>	36 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	49 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Environmental, Inc.
Client Project ID: Textron Providence
Client Sample ID: Lopes - Raynham 20%Org Z
Date Sampled: 10/21/15 13:50
Percent Solids: 99

ESS Laboratory Work Order: 1510592
ESS Laboratory Sample ID: 1510592-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	7.19 (N/A)		9045		1	EEM	10/21/15 18:10	S.U.	CJ52104
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.4 °C.								



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52213 - 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	128	9.43	mg/kg wet	139.0	92	80-120
Barium	183	9.43	mg/kg wet	203.0	90	80-120
Cadmium	78.8	1.89	mg/kg wet	96.00	82	80-120
Chromium	126	3.77	mg/kg wet	136.0	93	80-120
Lead	123	18.9	mg/kg wet	133.0	93	80-120
Silver	36.5	1.89	mg/kg wet	40.20	91	80-120

LCS

Selenium	68.4	20.0	mg/kg wet	81.10	84	80-120
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LCS Dup

Arsenic	139	8.93	mg/kg wet	139.0	100	80-120	9	20
Barium	199	8.93	mg/kg wet	203.0	98	80-120	9	20
Cadmium	84.8	1.79	mg/kg wet	96.00	88	80-120	7	20
Chromium	140	3.57	mg/kg wet	136.0	103	80-120	10	20
Lead	136	17.9	mg/kg wet	133.0	102	80-120	9	20
Silver	39.5	1.79	mg/kg wet	40.20	98	80-120	8	20

LCS Dup

Selenium	68.0	19.2	mg/kg wet	81.10	84	80-120	0.6	20
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Batch CJ52215 - 7471A

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	12.9	1.98	mg/kg wet	12.90	100	80-120
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LCS Dup

Mercury	13.6	1.94	mg/kg wet	12.90	105	80-120	5	20
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5035/8260B Volatile Organic Compounds / Low Level

Batch CJ52244 - 5035

Blank

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52244 - 5035

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52244 - 5035

Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0573		mg/kg wet	0.05000		115	70-130			
Surrogate: 4-Bromofluorobenzene	0.0479		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0526		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0521		mg/kg wet	0.05000		104	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,1-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
1,1-Dichloroethane	0.0564	0.0050	mg/kg wet	0.05000		113	70-130			
1,1-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloropropene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0344	0.0050	mg/kg wet	0.05000		69	70-130			B-
1,2,3-Trichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trichlorobenzene	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
1,2,4-Trimethylbenzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dibromo-3-Chloropropane	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dibromoethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dichloroethane	0.0589	0.0050	mg/kg wet	0.05000		118	70-130			
1,2-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,3,5-Trimethylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52244 - 5035

1,3-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
2-Butanone	0.262	0.0500	mg/kg wet	0.2500		105	70-130			
2-Chlorotoluene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
2-Hexanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130			
4-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
4-Isopropyltoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
Acetone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Benzene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Bromochloromethane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
Bromodichloromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
Bromoform	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromomethane	0.0507	0.0100	mg/kg wet	0.05000		101	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Chlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Chloroethane	0.0501	0.0100	mg/kg wet	0.05000		100	70-130			
Chloroform	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Chloromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130			
cis-1,2-Dichloroethene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
cis-1,3-Dichloropropene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
Dibromochloromethane	0.0593	0.0050	mg/kg wet	0.05000		119	70-130			
Dibromomethane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Diethyl Ether	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Ethylbenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0342	0.0050	mg/kg wet	0.05000		68	70-130			B-
Isopropylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0600	0.0250	mg/kg wet	0.05000		120	70-130			
Naphthalene	0.0322	0.0050	mg/kg wet	0.05000		64	70-130			B-
n-Butylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
n-Propylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
sec-Butylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Styrene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
tert-Butylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Tertiary-amyl methyl ether	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52244 - 5035

Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Tetrahydrofuran	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Toluene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
trans-1,3-Dichloropropene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Trichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Trichlorofluoromethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
Vinyl Acetate	0.0934	0.0050	mg/kg wet	0.05000		187	70-130			B+
Vinyl Chloride	0.0479	0.0100	mg/kg wet	0.05000		96	70-130			
Xylene O	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Xylene P,M	0.0972	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0497		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0500		mg/kg wet	0.05000		100	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
1,1,1-Trichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	0.7	25	
1,1,2-Trichloroethane	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
1,1-Dichloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	0.2	25	
1,1-Dichloroethene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.6	25	
1,1-Dichloropropene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
1,2,3-Trichlorobenzene	0.0369	0.0050	mg/kg wet	0.05000		74	70-130	7	25	
1,2,3-Trichloropropane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	4	25	
1,2,4-Trichlorobenzene	0.0334	0.0050	mg/kg wet	0.05000		67	70-130	13	25	B-
1,2,4-Trimethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	0.8	25	
1,2-Dibromo-3-Chloropropane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	7	25	
1,2-Dibromoethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	0.4	25	
1,2-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	0.1	25	
1,2-Dichloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130	4	25	
1,2-Dichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
1,3,5-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
1,3-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.8	25	
1,3-Dichloropropane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
1,4-Dichlorobenzene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	2	25	
1,4-Dioxane	1.12	0.100	mg/kg wet	1.000		112	70-130	3	20	
1-Chlorohexane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
2,2-Dichloropropane	0.0576	0.0050	mg/kg wet	0.05000		115	70-130	0.4	25	
2-Butanone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	0.4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	10	25	
2-Hexanone	0.284	0.0500	mg/kg wet	0.2500		114	70-130	3	25	
4-Chlorotoluene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
4-Isopropyltoluene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52244 - 5035

4-Methyl-2-Pentanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130	0.2	25	
Acetone	0.311	0.0500	mg/kg wet	0.2500		124	70-130	3	25	
Benzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	1	25	
Bromobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.7	25	
Bromochloromethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
Bromodichloromethane	0.0562	0.0050	mg/kg wet	0.05000		112	70-130	2	25	
Bromoform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	0.8	25	
Bromomethane	0.0496	0.0100	mg/kg wet	0.05000		99	70-130	2	25	
Carbon Disulfide	0.0557	0.0050	mg/kg wet	0.05000		111	70-130	1	25	
Carbon Tetrachloride	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	1	25	
Chlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	0.3	25	
Chloroethane	0.0467	0.0100	mg/kg wet	0.05000		93	70-130	7	25	
Chloroform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Chloromethane	0.0537	0.0100	mg/kg wet	0.05000		107	70-130	3	25	
cis-1,2-Dichloroethene	0.0583	0.0050	mg/kg wet	0.05000		117	70-130	1	25	
cis-1,3-Dichloropropene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	1	25	
Dibromochloromethane	0.0590	0.0050	mg/kg wet	0.05000		118	70-130	0.6	25	
Dibromomethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Dichlorodifluoromethane	0.0540	0.0100	mg/kg wet	0.05000		108	70-130	3	25	
Diethyl Ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	0.7	25	
Di-isopropyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
Ethyl tertiary-butyl ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
Ethylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	0.4	25	
Hexachlorobutadiene	0.0334	0.0050	mg/kg wet	0.05000		67	70-130	2	25	B-
Isopropylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Methyl tert-Butyl Ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
Methylene Chloride	0.0581	0.0250	mg/kg wet	0.05000		116	70-130	3	25	
Naphthalene	0.0329	0.0050	mg/kg wet	0.05000		66	70-130	2	25	B-
n-Butylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	0.9	25	
n-Propylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	1	25	
sec-Butylbenzene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Styrene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.2	25	
tert-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Tertiary-amyl methyl ether	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
Tetrachloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	0.2	25	
Tetrahydrofuran	0.0573	0.0050	mg/kg wet	0.05000		115	70-130	8	25	
Toluene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
trans-1,2-Dichloroethene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
trans-1,3-Dichloropropene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Trichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Trichlorofluoromethane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	1	25	
Vinyl Acetate	0.0930	0.0050	mg/kg wet	0.05000		186	70-130	0.4	25	B+
Vinyl Chloride	0.0473	0.0100	mg/kg wet	0.05000		95	70-130	1	25	
Xylene O	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	0.2	25	
Xylene P,M	0.0971	0.0100	mg/kg wet	0.1000		97	70-130	0.1	25	



CERTIFICATE OF ANALYSIS

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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510592

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 CJ52244 - [CALC]

Xylenes (Total)	0.145	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: 4-Bromofluorobenzene	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0501		mg/kg wet	0.05000		100	70-130			

8100M Total Petroleum Hydrocarbons

Batch CJ52237 - 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)	1.7	0.2	mg/kg wet	2.500		68	40-140			
Docosane (C22)	2.7	0.2	mg/kg wet	2.500		110	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Hexacosane (C26)	2.8	0.2	mg/kg wet	2.500		112	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonadecane (C19)	3.2	0.2	mg/kg wet	2.500		126	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		109	40-140			
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		94	40-140			
Total Petroleum Hydrocarbons	37.5	37.5	mg/kg wet	35.00		107	40-140			
Triacontane (C30)	2.7	0.2	mg/kg wet	2.500		109	40-140			

Surrogate: O-Terphenyl	4.32		mg/kg wet	5.000		86	40-140			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	0.9	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		113	40-140	2	25	



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8100M Total Petroleum Hydrocarbons

Batch CJ52237 - 3546

Dodecane (C12)	2.5	0.2	mg/kg wet	2.500		98	40-140	3	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140	2	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		106	40-140	5	25	
Nonadecane (C19)	3.2	0.2	mg/kg wet	2.500		129	40-140	2	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		70	30-140	0.7	25	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		108	40-140	3	25	
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		106	40-140	2	25	
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		99	40-140	5	25	
Total Petroleum Hydrocarbons	37.6	37.5	mg/kg wet	35.00		108	40-140	0.3	25	
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	

Surrogate: O-Terphenyl 4.35 mg/kg wet 5.000 87 40-140

8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

Blank

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



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8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

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



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CJ52239 - 3546

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.92		mg/kg wet	3.333		88	30-130			
Surrogate: 2,4,6-Tribromophenol	4.34		mg/kg wet	5.000		87	30-130			
Surrogate: 2-Chlorophenol-d4	4.23		mg/kg wet	5.000		85	30-130			
Surrogate: 2-Fluorobiphenyl	2.85		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	4.00		mg/kg wet	5.000		80	30-130			
Surrogate: Nitrobenzene-d5	2.86		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			

LCS

1,1-Biphenyl	2.62	0.333	mg/kg wet	3.333		78	40-140			
1,2,4-Trichlorobenzene	2.73	0.333	mg/kg wet	3.333		82	40-140			
1,2-Dichlorobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
1,3-Dichlorobenzene	2.45	0.333	mg/kg wet	3.333		74	40-140			
1,4-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140			
2,3,4,6-Tetrachlorophenol	2.53	1.67	mg/kg wet	3.333		76	30-130			
2,4,5-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dichlorophenol	2.95	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dimethylphenol	2.80	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	3.10	0.333	mg/kg wet	3.333		93	40-140			
2,6-Dinitrotoluene	2.88	0.333	mg/kg wet	3.333		86	40-140			
2-Chloronaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140			
2-Chlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
2-Methylnaphthalene	2.60	0.333	mg/kg wet	3.333		78	40-140			
2-Methylphenol	2.60	0.333	mg/kg wet	3.333		78	30-130			
2-Nitroaniline	2.12	0.333	mg/kg wet	3.333		64	40-140			
2-Nitrophenol	2.81	0.333	mg/kg wet	3.333		84	30-130			
3,3'-Dichlorobenzidine	2.37	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	6.62	0.667	mg/kg wet	6.667		99	30-130			
3-Nitroaniline	2.54	0.333	mg/kg wet	3.333		76	40-140			
4,6-Dinitro-2-Methylphenol	3.41	1.67	mg/kg wet	3.333		102	30-130			
4-Bromophenyl-phenylether	2.94	0.333	mg/kg wet	3.333		88	40-140			
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130			
4-Chloroaniline	2.27	0.667	mg/kg wet	3.333		68	40-140			
4-Chloro-phenyl-phenyl ether	2.98	0.333	mg/kg wet	3.333		89	40-140			
4-Nitroaniline	2.60	0.333	mg/kg wet	3.333		78	40-140			
4-Nitrophenol	2.20	1.67	mg/kg wet	3.333		66	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	2.49	0.667	mg/kg wet	3.333		75	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.63	0.333	mg/kg wet	3.333		79	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52239 - 3546

Benzo(a)anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Benzo(a)pyrene	3.10	0.167	mg/kg wet	3.333		93	40-140			
Benzo(b)fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Benzo(k)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.42	1.67	mg/kg wet	3.333		73	40-140			
Benzyl Alcohol	2.68	0.333	mg/kg wet	3.333		81	40-140			
bis(2-Chloroethoxy)methane	2.61	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Chloroethyl)ether	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-chloroisopropyl)Ether	2.52	0.333	mg/kg wet	3.333		76	40-140			
bis(2-Ethylhexyl)phthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140			
Carbazole	2.90	0.333	mg/kg wet	3.333		87	40-140			
Chrysene	2.95	0.167	mg/kg wet	3.333		88	40-140			
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		94	40-140			
Dibenzofuran	2.70	0.333	mg/kg wet	3.333		81	40-140			
Diethylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Dimethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.27	0.333	mg/kg wet	3.333		98	40-140			
Fluoranthene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Fluorene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Hexachlorobenzene	2.96	0.167	mg/kg wet	3.333		89	40-140			
Hexachlorobutadiene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Hexachlorocyclopentadiene	2.59	1.67	mg/kg wet	3.333		78	40-140			
Hexachloroethane	2.36	0.333	mg/kg wet	3.333		71	40-140			
Indeno(1,2,3-cd)Pyrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.62	0.333	mg/kg wet	3.333		78	40-140			
Nitrobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140			
N-Nitrosodimethylamine	1.68	0.333	mg/kg wet	3.333		50	40-140			
N-Nitroso-Di-n-Propylamine	2.52	0.333	mg/kg wet	3.333		76	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		83	40-140			
Pentachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130			
Phenanthrene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Phenol	2.72	0.333	mg/kg wet	3.333		81	30-130			
Pyrene	2.95	0.333	mg/kg wet	3.333		88	40-140			
Pyridine	1.71	1.67	mg/kg wet	3.333		51	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.68		mg/kg wet	3.333		80	30-130			
Surrogate: 2,4,6-Tribromophenol	4.78		mg/kg wet	5.000		96	30-130			
Surrogate: 2-Chlorophenol-d4	4.04		mg/kg wet	5.000		81	30-130			
Surrogate: 2-Fluorobiphenyl	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: 2-Fluorophenol	3.72		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			
Surrogate: Phenol-d6	3.86		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.15		mg/kg wet	3.333		95	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52239 - 3546

LCS Dup

1,1-Biphenyl	2.14	0.333	mg/kg wet	3.333		64	40-140	20	30	
1,2,4-Trichlorobenzene	2.11	0.333	mg/kg wet	3.333		63	40-140	26	30	
1,2-Dichlorobenzene	1.96	0.333	mg/kg wet	3.333		59	40-140	23	30	
1,3-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	23	30	
1,4-Dichlorobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	24	30	
2,3,4,6-Tetrachlorophenol	2.18	1.67	mg/kg wet	3.333		65	30-130	15	30	
2,4,5-Trichlorophenol	2.45	0.333	mg/kg wet	3.333		74	30-130	18	30	
2,4,6-Trichlorophenol	2.36	0.333	mg/kg wet	3.333		71	30-130	22	30	
2,4-Dichlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	24	30	
2,4-Dimethylphenol	2.18	0.333	mg/kg wet	3.333		66	30-130	25	30	
2,4-Dinitrophenol	2.24	1.67	mg/kg wet	3.333		67	30-130	9	30	
2,4-Dinitrotoluene	2.61	0.333	mg/kg wet	3.333		78	40-140	17	30	
2,6-Dinitrotoluene	2.34	0.333	mg/kg wet	3.333		70	40-140	21	30	
2-Chloronaphthalene	1.97	0.333	mg/kg wet	3.333		59	40-140	21	30	
2-Chlorophenol	2.07	0.333	mg/kg wet	3.333		62	30-130	20	30	
2-Methylnaphthalene	2.04	0.333	mg/kg wet	3.333		61	40-140	24	30	
2-Methylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130	23	30	
2-Nitroaniline	1.76	0.333	mg/kg wet	3.333		53	40-140	18	30	
2-Nitrophenol	2.13	0.333	mg/kg wet	3.333		64	30-130	28	30	
3,3'-Dichlorobenzidine	2.15	0.667	mg/kg wet	3.333		65	40-140	10	30	
3+4-Methylphenol	5.34	0.667	mg/kg wet	6.667		80	30-130	21	30	
3-Nitroaniline	2.13	0.333	mg/kg wet	3.333		64	40-140	17	30	
4,6-Dinitro-2-Methylphenol	2.91	1.67	mg/kg wet	3.333		87	30-130	16	30	
4-Bromophenyl-phenylether	2.47	0.333	mg/kg wet	3.333		74	40-140	17	30	
4-Chloro-3-Methylphenol	2.28	0.333	mg/kg wet	3.333		68	30-130	23	30	
4-Chloroaniline	1.72	0.667	mg/kg wet	3.333		52	40-140	27	30	
4-Chloro-phenyl-phenyl ether	2.49	0.333	mg/kg wet	3.333		75	40-140	18	30	
4-Nitroaniline	2.24	0.333	mg/kg wet	3.333		67	40-140	15	30	
4-Nitrophenol	1.89	1.67	mg/kg wet	3.333		57	30-130	15	30	
Acenaphthene	2.30	0.333	mg/kg wet	3.333		69	40-140	19	30	
Acenaphthylene	2.30	0.333	mg/kg wet	3.333		69	40-140	20	30	
Acetophenone	2.00	0.667	mg/kg wet	3.333		60	40-140	22	30	
Aniline	1.50	0.667	mg/kg wet	3.333		45	40-140	21	30	
Anthracene	2.50	0.333	mg/kg wet	3.333		75	40-140	17	30	
Azobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	20	30	
Benzo(a)anthracene	2.62	0.333	mg/kg wet	3.333		79	40-140	13	30	
Benzo(a)pyrene	2.74	0.167	mg/kg wet	3.333		82	40-140	12	30	
Benzo(b)fluoranthene	2.60	0.333	mg/kg wet	3.333		78	40-140	15	30	
Benzo(g,h,i)perylene	2.42	0.333	mg/kg wet	3.333		73	40-140	11	30	
Benzo(k)fluoranthene	2.50	0.333	mg/kg wet	3.333		75	40-140	14	30	
Benzoic Acid	2.02	1.67	mg/kg wet	3.333		61	40-140	18	30	
Benzyl Alcohol	2.09	0.333	mg/kg wet	3.333		63	40-140	25	30	
bis(2-Chloroethoxy)methane	2.03	0.333	mg/kg wet	3.333		61	40-140	25	30	
bis(2-Chloroethyl)ether	1.76	0.333	mg/kg wet	3.333		53	40-140	25	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

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 CJ52239 - 3546

bis(2-chloroisopropyl)Ether	1.96	0.333	mg/kg wet	3.333		59	40-140	25	30	
bis(2-Ethylhexyl)phthalate	2.66	0.333	mg/kg wet	3.333		80	40-140	13	30	
Butylbenzylphthalate	2.45	0.333	mg/kg wet	3.333		73	40-140	13	30	
Carbazole	2.49	0.333	mg/kg wet	3.333		75	40-140	15	30	
Chrysene	2.55	0.167	mg/kg wet	3.333		77	40-140	14	30	
Dibenzo(a,h)Anthracene	2.73	0.167	mg/kg wet	3.333		82	40-140	14	30	
Dibenzofuran	2.23	0.333	mg/kg wet	3.333		67	40-140	19	30	
Diethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	17	30	
Dimethylphthalate	2.36	0.333	mg/kg wet	3.333		71	40-140	17	30	
Di-n-butylphthalate	2.50	0.333	mg/kg wet	3.333		75	40-140	13	30	
Di-n-octylphthalate	2.81	0.333	mg/kg wet	3.333		84	40-140	15	30	
Fluoranthene	2.71	0.333	mg/kg wet	3.333		81	40-140	14	30	
Fluorene	2.45	0.333	mg/kg wet	3.333		73	40-140	19	30	
Hexachlorobenzene	2.48	0.167	mg/kg wet	3.333		74	40-140	17	30	
Hexachlorobutadiene	2.22	0.333	mg/kg wet	3.333		67	40-140	27	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	23	30	
Hexachloroethane	1.88	0.333	mg/kg wet	3.333		56	40-140	23	30	
Indeno(1,2,3-cd)Pyrene	2.27	0.333	mg/kg wet	3.333		68	40-140	15	30	
Isophorone	2.10	0.333	mg/kg wet	3.333		63	40-140	24	30	
Naphthalene	2.02	0.333	mg/kg wet	3.333		61	40-140	26	30	
Nitrobenzene	1.89	0.333	mg/kg wet	3.333		57	40-140	27	30	
N-Nitrosodimethylamine	1.31	0.333	mg/kg wet	3.333		39	40-140	25	30	B-
N-Nitroso-Di-n-Propylamine	2.10	0.333	mg/kg wet	3.333		63	40-140	18	30	
N-nitrosodiphenylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	19	30	
Pentachlorophenol	2.20	1.67	mg/kg wet	3.333		66	30-130	13	30	
Phenanthrene	2.31	0.333	mg/kg wet	3.333		69	40-140	18	30	
Phenol	2.17	0.333	mg/kg wet	3.333		65	30-130	22	30	
Pyrene	2.54	0.333	mg/kg wet	3.333		76	40-140	15	30	
Pyridine	1.32	1.67	mg/kg wet	3.333		40	40-140	25	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.06		mg/kg wet	3.333		62	30-130			
Surrogate: 2,4,6-Tribromophenol	3.95		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Chlorophenol-d4	3.07		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	2.28		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	2.83		mg/kg wet	5.000		57	30-130			
Surrogate: Nitrobenzene-d5	2.10		mg/kg wet	3.333		63	30-130			
Surrogate: Phenol-d6	3.01		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.54		mg/kg wet	3.333		76	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510592

Notes and Definitions

- Z-10 Soil pH measured in water at 20.4 °C.
- U Analyte included in the analysis, but not detected
- S- Surrogate recovery(ies) below lower control limit (S-).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above 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.
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ESS Laboratory Work Order: 1510592

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: 15100592
Date Project Due: 10/26/15
Days For Project: 3 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| Cooler Temp: <u>3.8</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 @ 1715 JE 10/21/15

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: 10/21/15 1504
Date/Time: 10/21/15 1651

