



*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: 1510742**

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

Laurel Stoddard  
Laboratory Director

**REVIEWED**  
*By ESS Laboratory at 5:03 pm, Nov 02, 2015*

**Analytical Summary**

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

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



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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510742

**SAMPLE RECEIPT**

The following samples were received on October 26, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on October 26, 2015 at 17:50.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510742-01	Material S and S Loam E	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



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Client Name: Charter Environmental, Inc.  
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ESS Laboratory Work Order: 1510742

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

CJ52924-BS1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (178% @ 70-130%)

CJ52924-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (159% @ 70-130%)

CYJ0402-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

1,2,3-Trichloropropane (36% @ 30%), 1,4-Dioxane (33% @ 30%), Acetone (32% @ 30%), Vinyl Acetate (118% @ 30%)

**8270D Semi-Volatile Organic Compounds**

CYJ0398-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (116% @ 80-120%)

CYJ0416-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (90% @ 80-120%), Benzoic Acid (83% @ 80-120%)

CYJ0416-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

Di-n-octylphthalate (27% @ 20%)

CYJ0416-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

Pentachlorophenol (29% @ 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.



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Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
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	6.11 (2.49)		6010C		1	KJK	10/30/15 0:35	2.14	100	CJ52747
Barium	32.2 (2.49)		6010C		1	KJK	10/30/15 0:35	2.14	100	CJ52747
Cadmium	ND (0.50)		6010C		1	KJK	10/30/15 0:35	2.14	100	CJ52747
Chromium	6.79 (1.00)		6010C		1	KJK	10/30/15 0:35	2.14	100	CJ52747
Lead	20.0 (4.99)		6010C		1	KJK	10/30/15 0:35	2.14	100	CJ52747
Mercury	0.069 (0.034)		7471B		1	PJP	10/28/15 13:43	0.63	40	CJ52751
Selenium	ND (24.9)		6010C		5	KJK	10/30/15 18:15	2.14	100	CJ52747
Silver	ND (0.50)		6010C		1	KJK	10/30/15 0:35	2.14	100	CJ52747



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Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 5.2  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
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	10/29/15 15:23	CYJ0402	CJ52924
1,1,1-Trichloroethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,1,2,2-Tetrachloroethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,1,2-Trichloroethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,1-Dichloroethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,1-Dichloroethene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,1-Dichloropropene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2,3-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2,3-Trichloropropane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2,4-Trichlorobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2,4-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2-Dibromo-3-Chloropropane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2-Dibromoethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2-Dichloroethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,3,5-Trimethylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,3-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,3-Dichloropropane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,4-Dichlorobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1,4-Dioxane	ND (0.103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
1-Chlorohexane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
2,2-Dichloropropane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
2-Butanone	ND (0.0513)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
2-Chlorotoluene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
2-Hexanone	ND (0.0513)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
4-Chlorotoluene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
4-Isopropyltoluene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
4-Methyl-2-Pentanone	ND (0.0513)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Acetone	ND (0.0513)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Benzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Bromobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924



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Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 5.2  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
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	10/29/15 15:23	CYJ0402	CJ52924
Bromodichloromethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Bromoform	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Bromomethane	ND (0.0103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Carbon Disulfide	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Carbon Tetrachloride	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Chlorobenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Chloroethane	ND (0.0103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Chloroform	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Chloromethane	ND (0.0103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
cis-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
cis-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Dibromochloromethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Dibromomethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Diethyl Ether	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Di-isopropyl ether	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Ethyl tertiary-butyl ether	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Ethylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Hexachlorobutadiene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Isopropylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Methyl tert-Butyl Ether	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Methylene Chloride	ND (0.0257)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Naphthalene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
n-Butylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
n-Propylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
sec-Butylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Styrene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
tert-Butylbenzene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Tertiary-amyl methyl ether	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Tetrachloroethene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Tetrahydrofuran	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924



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Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 5.2  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
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	10/29/15 15:23	CYJ0402	CJ52924
trans-1,2-Dichloroethene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
trans-1,3-Dichloropropene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Trichloroethene	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Trichlorofluoromethane	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Vinyl Acetate	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Vinyl Chloride	ND (0.0103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Xylene O	ND (0.0051)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Xylene P,M	ND (0.0103)		8260B Low		1	10/29/15 15:23	CYJ0402	CJ52924
Xylenes (Total)	ND (0.0103)		8260B Low		1	10/29/15 15:23		[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>95 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>109 %</i>		<i>70-130</i>





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Client Name: Charter Environmental, Inc.  
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Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 20.4  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 10/27/15 12:35

**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	130 (39.2)		8100M		1	10/28/15 15:31	CYJ0361	CJ52723
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		92 %		40-140				



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Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
1,2,4-Trichlorobenzene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
1,2-Dichlorobenzene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
1,3-Dichlorobenzene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
1,4-Dichlorobenzene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,3,4,6-Tetrachlorophenol	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,4,5-Trichlorophenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,4,6-Trichlorophenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,4-Dichlorophenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,4-Dimethylphenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,4-Dinitrophenol	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,4-Dinitrotoluene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2,6-Dinitrotoluene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2-Chloronaphthalene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2-Chlorophenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2-Methylnaphthalene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2-Methylphenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2-Nitroaniline	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
2-Nitrophenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
3,3'-Dichlorobenzidine	ND (0.752)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
3+4-Methylphenol	ND (0.752)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
3-Nitroaniline	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4,6-Dinitro-2-Methylphenol	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4-Bromophenyl-phenylether	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4-Chloro-3-Methylphenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4-Chloroaniline	ND (0.752)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4-Chloro-phenyl-phenyl ether	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4-Nitroaniline	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
4-Nitrophenol	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Acenaphthene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Acenaphthylene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Acetophenone	ND (0.752)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.752)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Anthracene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Azobenzene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzo(a)anthracene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzo(a)pyrene	ND (0.188)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzo(b)fluoranthene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzo(g,h,i)perylene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzo(k)fluoranthene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzoic Acid	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Benzyl Alcohol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
bis(2-Chloroethoxy)methane	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
bis(2-Chloroethyl)ether	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
bis(2-chloroisopropyl)Ether	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
bis(2-Ethylhexyl)phthalate	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Butylbenzylphthalate	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Carbazole	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Chrysene	ND (0.188)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Dibenzo(a,h)Anthracene	ND (0.188)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Dibenzofuran	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Diethylphthalate	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Dimethylphthalate	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Di-n-butylphthalate	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Di-n-octylphthalate	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Fluoranthene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Fluorene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Hexachlorobenzene	ND (0.188)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Hexachlorobutadiene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Hexachlorocyclopentadiene	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Hexachloroethane	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Indeno(1,2,3-cd)Pyrene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Isophorone	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Naphthalene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
N-Nitrosodimethylamine	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
N-Nitroso-Di-n-Propylamine	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
N-nitrosodiphenylamine	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Pentachlorophenol	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Phenanthrene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Phenol	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Pyrene	ND (0.375)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820
Pyridine	ND (1.88)		8270D		1	10/29/15 1:33	CYJ0398	CJ52820

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	55 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	70 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	56 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	63 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	52 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	58 %		30-130
<i>Surrogate: Phenol-d6</i>	58 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	78 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam E  
Date Sampled: 10/26/15 14:30  
Percent Solids: 94

ESS Laboratory Work Order: 1510742  
ESS Laboratory Sample ID: 1510742-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	5.18 (N/A)		9045		1	JLK	10/26/15 19:25	S.U.	CJ52639
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.6 °C.								



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52747 - 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	40.2	9.43	mg/kg wet	52.30	77	43-169
Barium	121	9.43	mg/kg wet	145.0	84	80-120
Cadmium	48.1	1.89	mg/kg wet	71.60	67	62-138
Chromium	71.5	3.77	mg/kg wet	88.50	81	80-120
Selenium	60.0	18.9	mg/kg wet	81.10	74	64-137
Silver	93.8	1.89	mg/kg wet	114.0	82	80-120

**LCS**

Lead	107	18.5	mg/kg wet	133.0	81	80-120
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**LCS Dup**

Arsenic	42.6	9.80	mg/kg wet	52.30	81	43-169	6	20
Barium	134	9.80	mg/kg wet	145.0	92	80-120	10	20
Cadmium	49.4	1.96	mg/kg wet	71.60	69	62-138	3	20
Chromium	72.6	3.92	mg/kg wet	88.50	82	80-120	1	20
Selenium	53.4	19.6	mg/kg wet	81.10	66	64-137	12	20
Silver	101	1.96	mg/kg wet	114.0	89	80-120	7	20

**LCS Dup**

Lead	116	19.6	mg/kg wet	133.0	87	80-120	8	20
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**Batch CJ52751 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	9.90	1.71	mg/kg wet	9.700	102	80-120
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**LCS Dup**

Mercury	9.62	1.98	mg/kg wet	9.700	99	80-120	3	20
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**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CJ52924 - 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: 1510742

**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 CJ52924 - 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: 1510742

**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 CJ52924 - 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	0.0585		mg/kg wet	0.05000		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0529		mg/kg wet	0.05000		106	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1-Dichloropropene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,4-Trichlorobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trimethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dibromoethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52924 - 5035**

1,3-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dichlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
2-Butanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
2-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Hexanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
4-Chlorotoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
4-Methyl-2-Pentanone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130			
Benzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Bromoform	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0478	0.0100	mg/kg wet	0.05000		96	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
Chloroform	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0535	0.0100	mg/kg wet	0.05000		107	70-130			
cis-1,2-Dichloroethene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
cis-1,3-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Dibromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Dibromomethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0494	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Hexachlorobutadiene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Isopropylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Methyl tert-Butyl Ether	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Methylene Chloride	0.0610	0.0250	mg/kg wet	0.05000		122	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
sec-Butylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
tert-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1510742

**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 CJ52924 - 5035**

Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0585	0.0050	mg/kg wet	0.05000		117	70-130			
Toluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0891	0.0050	mg/kg wet	0.05000		178	70-130			B+
Vinyl Chloride	0.0449	0.0100	mg/kg wet	0.05000		90	70-130			
Xylene O	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Xylene P,M	0.0901	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0482		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0478		mg/kg wet	0.05000		96	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
1,1,1-Trichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
1,1-Dichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,1-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	6	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.8	25	
1,2,3-Trichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	14	25	
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,4-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.6	25	
1,2-Dichlorobenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	9	25	
1,2-Dichloropropane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,3,5-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	15	25	
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	5	25	
1,3-Dichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
1,4-Dioxane	1.01	0.100	mg/kg wet	1.000		101	70-130	15	20	
1-Chlorohexane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
2,2-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	5	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		94	70-130	15	25	
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
2-Hexanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130	8	25	
4-Chlorotoluene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.09	25	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52924 - 5035**

4-Methyl-2-Pentanone	0.247	0.0500	mg/kg wet	0.2500		99	70-130	19	25	
Acetone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	20	25	
Benzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Bromobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Bromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	9	25	
Bromodichloromethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromoform	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
Bromomethane	0.0454	0.0100	mg/kg wet	0.05000		91	70-130	5	25	
Carbon Disulfide	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Carbon Tetrachloride	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Chlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Chloroethane	0.0421	0.0100	mg/kg wet	0.05000		84	70-130	12	25	
Chloroform	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
Chloromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130	7	25	
cis-1,2-Dichloroethene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
cis-1,3-Dichloropropene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Dibromochloromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
Dibromomethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
Dichlorodifluoromethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Diethyl Ether	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
Di-isopropyl ether	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
Ethyl tertiary-butyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.1	25	
Hexachlorobutadiene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	1	25	
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Methyl tert-Butyl Ether	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	11	25	
Methylene Chloride	0.0572	0.0250	mg/kg wet	0.05000		114	70-130	6	25	
Naphthalene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
n-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
n-Propylbenzene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	11	25	
sec-Butylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
tert-Butylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Tertiary-amyl methyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrahydrofuran	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	19	25	
Toluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	6	25	
trans-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
trans-1,3-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	10	25	
Trichloroethene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Vinyl Acetate	0.0794	0.0050	mg/kg wet	0.05000		159	70-130	12	25	B+
Vinyl Chloride	0.0419	0.0100	mg/kg wet	0.05000		84	70-130	7	25	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.8	25	
Xylene P,M	0.0887	0.0100	mg/kg wet	0.1000		89	70-130	2	25	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52924 - [CALC]**

Xylenes (Total)	0.134	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0506		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0515		mg/kg wet	0.05000		103	70-130			

8100M Total Petroleum Hydrocarbons

**Batch CJ52723 - 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	4.66		mg/kg wet	5.000		93	40-140			
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**LCS**

Decane (C10)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		82	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		113	40-140			
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Tetradecane (C14)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Total Petroleum Hydrocarbons	42.0	37.5	mg/kg wet	35.00		120	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		101	40-140			

Surrogate: O-Terphenyl	4.91		mg/kg wet	5.000		98	40-140			
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**LCS Dup**

Decane (C10)	2.3	0.2	mg/kg wet	2.500		91	40-140	4	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		111	40-140	4	25	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52723 - 3546**

Dodecane (C12)	2.6	0.2	mg/kg wet	2.500		104	40-140	2	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		110	40-140	4	25	
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		113	40-140	3	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		78	30-140	4	25	
Octacosane (C28)	2.6	0.2	mg/kg wet	2.500		102	40-140	5	25	
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		103	40-140	4	25	
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		109	40-140	2	25	
Total Petroleum Hydrocarbons	40.2	37.5	mg/kg wet	35.00		115	40-140	4	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140	5	25	

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

**8270D Semi-Volatile Organic Compounds**

**Batch CJ52820 - 3546**

**Blank**

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



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52820 - 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: 1510742

**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 CJ52820 - 3546**

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.59		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Chlorophenol-d4	3.92		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.60		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	3.93		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	3.17		mg/kg wet	3.333		95	30-130			

**LCS**

1,1-Biphenyl	2.29	0.333	mg/kg wet	3.333		69	40-140			
1,2,4-Trichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.17	1.67	mg/kg wet	3.333		65	30-130			
2,4,5-Trichlorophenol	2.65	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.43	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dinitrophenol	2.18	1.67	mg/kg wet	3.333		65	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.62	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.11	0.333	mg/kg wet	3.333		63	40-140			
2-Chlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Methylnaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Methylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2-Nitroaniline	2.03	0.333	mg/kg wet	3.333		61	40-140			
2-Nitrophenol	2.40	0.333	mg/kg wet	3.333		72	30-130			
3,3'-Dichlorobenzidine	2.45	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.94	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			
4,6-Dinitro-2-Methylphenol	3.24	1.67	mg/kg wet	3.333		97	30-130			
4-Bromophenyl-phenylether	2.58	0.333	mg/kg wet	3.333		77	40-140			
4-Chloro-3-Methylphenol	2.44	0.333	mg/kg wet	3.333		73	30-130			
4-Chloroaniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
4-Chloro-phenyl-phenyl ether	2.53	0.333	mg/kg wet	3.333		76	40-140			
4-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
4-Nitrophenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
Acenaphthene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acenaphthylene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acetophenone	2.16	0.667	mg/kg wet	3.333		65	40-140			
Aniline	1.64	0.667	mg/kg wet	3.333		49	40-140			
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52820 - 3546**

Benzo(a)anthracene	3.15	0.333	mg/kg wet	3.333		94	40-140			
Benzo(a)pyrene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		92	40-140			
Benzo(g,h,i)perylene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	2.43	0.333	mg/kg wet	3.333		73	40-140			
Benzoic Acid	2.04	1.67	mg/kg wet	3.333		61	40-140			
Benzyl Alcohol	1.74	0.333	mg/kg wet	3.333		52	40-140			
bis(2-Chloroethoxy)methane	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	1.99	0.333	mg/kg wet	3.333		60	40-140			
bis(2-chloroisopropyl)Ether	2.22	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Carbazole	2.99	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	3.06	0.167	mg/kg wet	3.333		92	40-140			
Dibenzo(a,h)Anthracene	3.34	0.167	mg/kg wet	3.333		100	40-140			
Dibenzofuran	2.36	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140			
Dimethylphthalate	2.65	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.40	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140			
Hexachlorobutadiene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Hexachlorocyclopentadiene	1.85	1.67	mg/kg wet	3.333		56	40-140			
Hexachloroethane	2.21	0.333	mg/kg wet	3.333		66	40-140			
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Isophorone	2.36	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140			
Nitrobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140			
N-Nitrosodimethylamine	2.15	0.333	mg/kg wet	3.333		64	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		84	40-140			
Phenol	2.19	0.333	mg/kg wet	3.333		66	30-130			
Pyrene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Pyridine	1.67	1.67	mg/kg wet	3.333		50	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.42		mg/kg wet	3.333		73	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.56		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: Nitrobenzene-d5	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: p-Terphenyl-d14	3.31		mg/kg wet	3.333		99	30-130			





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52820 - 3546

LCS Dup										
1,1-Biphenyl	2.50	0.333	mg/kg wet	3.333		75	40-140	9	30	
1,2,4-Trichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140	8	30	
1,2-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,3-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	11	30	
2,3,4,6-Tetrachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	9	30	
2,4,5-Trichlorophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	8	30	
2,4,6-Trichlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130	11	30	
2,4-Dichlorophenol	2.78	0.333	mg/kg wet	3.333		83	30-130	14	30	
2,4-Dimethylphenol	2.72	0.333	mg/kg wet	3.333		82	30-130	13	30	
2,4-Dinitrophenol	2.54	1.67	mg/kg wet	3.333		76	30-130	15	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	11	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	9	30	
2-Chlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	12	30	
2-Methylnaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140	14	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	15	30	
2-Nitroaniline	2.25	0.333	mg/kg wet	3.333		68	40-140	10	30	
2-Nitrophenol	2.75	0.333	mg/kg wet	3.333		83	30-130	14	30	
3,3'-Dichlorobenzidine	2.63	0.667	mg/kg wet	3.333		79	40-140	7	30	
3+4-Methylphenol	5.69	0.667	mg/kg wet	6.667		85	30-130	14	30	
3-Nitroaniline	2.74	0.333	mg/kg wet	3.333		82	40-140	10	30	
4,6-Dinitro-2-Methylphenol	3.65	1.67	mg/kg wet	3.333		109	30-130	12	30	
4-Bromophenyl-phenylether	2.72	0.333	mg/kg wet	3.333		82	40-140	5	30	
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130	16	30	
4-Chloroaniline	2.33	0.667	mg/kg wet	3.333		70	40-140	22	30	
4-Chloro-phenyl-phenyl ether	2.73	0.333	mg/kg wet	3.333		82	40-140	8	30	
4-Nitroaniline	3.13	0.333	mg/kg wet	3.333		94	40-140	10	30	
4-Nitrophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	12	30	
Acenaphthene	2.68	0.333	mg/kg wet	3.333		80	40-140	9	30	
Acenaphthylene	2.69	0.333	mg/kg wet	3.333		81	40-140	10	30	
Acetophenone	2.50	0.667	mg/kg wet	3.333		75	40-140	15	30	
Aniline	1.93	0.667	mg/kg wet	3.333		58	40-140	16	30	
Anthracene	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Azobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Benzo(a)anthracene	3.29	0.333	mg/kg wet	3.333		99	40-140	4	30	
Benzo(a)pyrene	3.02	0.167	mg/kg wet	3.333		90	40-140	3	30	
Benzo(b)fluoranthene	3.24	0.333	mg/kg wet	3.333		97	40-140	6	30	
Benzo(g,h,i)perylene	2.97	0.333	mg/kg wet	3.333		89	40-140	5	30	
Benzo(k)fluoranthene	2.66	0.333	mg/kg wet	3.333		80	40-140	9	30	
Benzoic Acid	2.43	1.67	mg/kg wet	3.333		73	40-140	18	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	27	30	
bis(2-Chloroethoxy)methane	2.58	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Chloroethyl)ether	2.31	0.333	mg/kg wet	3.333		69	40-140	15	30	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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 CJ52820 - 3546**

bis(2-chloroisopropyl)Ether	2.50	0.333	mg/kg wet	3.333		75	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.40	0.333	mg/kg wet	3.333		102	40-140	4	30	
Butylbenzylphthalate	3.22	0.333	mg/kg wet	3.333		97	40-140	6	30	
Carbazole	3.17	0.333	mg/kg wet	3.333		95	40-140	6	30	
Chrysene	3.22	0.167	mg/kg wet	3.333		96	40-140	5	30	
Dibenzo(a,h)Anthracene	3.55	0.167	mg/kg wet	3.333		106	40-140	6	30	
Dibenzofuran	2.60	0.333	mg/kg wet	3.333		78	40-140	10	30	
Diethylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140	8	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	8	30	
Di-n-butylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	6	30	
Di-n-octylphthalate	3.65	0.333	mg/kg wet	3.333		110	40-140	7	30	
Fluoranthene	3.23	0.333	mg/kg wet	3.333		97	40-140	7	30	
Fluorene	2.92	0.333	mg/kg wet	3.333		88	40-140	9	30	
Hexachlorobenzene	2.56	0.167	mg/kg wet	3.333		77	40-140	3	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	9	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	10	30	
Hexachloroethane	2.41	0.333	mg/kg wet	3.333		72	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140	12	30	
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
Nitrobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	10	30	
N-Nitrosodimethylamine	2.36	0.333	mg/kg wet	3.333		71	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.90	0.333	mg/kg wet	3.333		87	40-140	4	30	
Pentachlorophenol	2.35	1.67	mg/kg wet	3.333		71	30-130	12	30	
Phenanthrene	2.92	0.333	mg/kg wet	3.333		88	40-140	5	30	
Phenol	2.85	0.333	mg/kg wet	3.333		86	30-130	26	30	
Pyrene	3.31	0.333	mg/kg wet	3.333		99	40-140	6	30	
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.87		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			
Surrogate: Phenol-d6	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: p-Terphenyl-d14	3.38		mg/kg wet	3.333		101	30-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.6 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510742

**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](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](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](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: 15100742  
 Date Project Due: 11/2/15  
 Days For Project: 5 Day

**Items to be checked upon receipt:**

- 1. Air Bill Manifest Present?  \*No
- Air No.:
- 2. Were Custody Seals Present?  No
- 3. Were Custody Seals Intact?  N/A
- 4. Is Radiation count < 100 CPM?  Yes
- 5. Is a cooler present?  Yes
- Cooler Temp: 5.3
- 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 @ 1750 JL 10/26/15

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: 10/26/15 1444  
 Date/Time: 10/26/15 1706

**ESS Laboratory**

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

**CHAIN OF CUSTODY**

ESS Lab # 1510742

Reporting Limits RI DEM RDEC

Turn Time 5 Days  
 Regulatory State Rhode Island

Is this project for any of the following?:

OCT RCP  MA MCP  RGP  DOD

Project # 74-15-0002.134 Project Name Textron Providence

Address 500 Harrison Avenue, Suite 4R PO #

City Boston State MA Zip Code 02118 Email Address pleofanti@charter.us

Telephone Number (857) 246-6812 FAX Number

ESS Lab ID Collection Date Time 10/26/15 1430

Sample Type Grab

Sample Matrix Soil

Material S&S Loam E

Sample ID

Analysis

PH: Corrosivity 9045

VOC  VOC Low Level

SVOC  RCRA 8

TPH

Data Checker

Other (Please Specify →)

Number of Containers: 1 1 1 2 1

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

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other

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

Container Type: V V J J J J J J

Container Volume: 7 7 10 10 10 10 10 10

Preservation Code: 1 1 6 10 1 1 1 1

Number of Containers: 1 1 1 2 1

Sampled by: G. Gilbert-Thielsch

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

Please CC: mpolsky@thielsch.com

Cooler Present: Yes Drop Off

Seals Intact: No Pickup

Cooler Temperature: 53 Technician Hours →

Received by: (Signature, Date & Time) 10/26/15 1440

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time) 10/26/15 1445

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

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Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)



*CERTIFICATE OF ANALYSIS*

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

**RE: Textron Providence (74-15-0002.134)**  
**ESS Laboratory Work Order Number: 1510738**

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 5:00 pm, Nov 02, 2015**

**Analytical Summary**

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

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



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**SAMPLE RECEIPT**

The following samples were received on October 26, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on October 26, 2015 at 17:50.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510738-01	Material S and S Loam 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: 1510738

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

- 1510738-01RE1 Internal Standard(s) outside of criteria (I).  
1,4-Dichlorobenzene-D4 (44% @ 50-200%)
- CJ52830-BLK1 Internal Standard(s) outside of criteria (I).  
1,4-Dichlorobenzene-D4 (44% @ 50-200%)
- CJ52830-BLK1 Surrogate recovery(ies) below lower control limit (S-).  
4-Bromofluorobenzene (69% @ 70-130%)
- CJ52830-BS1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (175% @ 70-130%)
- CJ52830-BSD1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (184% @ 70-130%)
- CJ52830-BSD1 Blank Spike recovery is below lower control limit (B-).  
1,2,3-Trichlorobenzene (49% @ 70-130%)
- CJ52830-BSD1 Relative percent difference for duplicate is outside of criteria (D+).  
1,2,3-Trichlorobenzene (78% @ 25%), Xylene O (30% @ 25%)
- CJ52924-BS1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (178% @ 70-130%)
- CJ52924-BSD1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (159% @ 70-130%)
- CYJ0402-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
1,2,3-Trichloropropane (36% @ 30%), 1,4-Dioxane (33% @ 30%), Acetone (32% @ 30%), Vinyl Acetate (118% @ 30%)

**8270D Semi-Volatile Organic Compounds**

- CYJ0398-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (116% @ 80-120%)
- CYJ0416-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (90% @ 80-120%), Benzoic Acid (83% @ 80-120%)
- CYJ0416-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
Di-n-octylphthalate (27% @ 20%)
- CYJ0416-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).  
Pentachlorophenol (29% @ 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: 1510738

**DATA USABILITY LINKS**

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

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

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

**Prep Methods**

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

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



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (2.66)		6010C		1	KJK	10/28/15 19:36	2.04	100	CJ52735
<b>Barium</b>	<b>29.5</b> (2.66)		6010C		1	KJK	10/28/15 4:33	2.04	100	CJ52735
Cadmium	ND (0.53)		6010C		1	KJK	10/28/15 4:33	2.04	100	CJ52735
<b>Chromium</b>	<b>5.85</b> (1.06)		6010C		1	KJK	10/28/15 4:33	2.04	100	CJ52735
<b>Lead</b>	<b>12.7</b> (5.32)		6010C		1	KJK	10/28/15 19:36	2.04	100	CJ52735
<b>Mercury</b>	<b>0.043</b> (0.036)		7471B		1	PJP	10/28/15 13:11	0.6	40	CJ52734
Selenium	ND (21.3)		6010C		4	KJK	10/29/15 14:58	2.04	100	CJ52735
Silver	ND (0.53)		6010C		1	KJK	10/28/15 4:33	2.04	100	CJ52735



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 5.4  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
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 (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,1,2,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1,4-Dioxane	ND (0.100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
1-Chlorohexane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
2-Butanone	ND (0.0502)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
2-Chlorotoluene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
2-Hexanone	ND (0.0502)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
4-Chlorotoluene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
4-Methyl-2-Pentanone	ND (0.0502)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Acetone	ND (0.0502)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Benzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Bromobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 5.4  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
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 (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Bromodichloromethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Bromoform	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Bromomethane	ND (0.0100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Carbon Disulfide	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Chlorobenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Chloroethane	ND (0.0100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Chloroform	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Chloromethane	ND (0.0100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Dibromochloromethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Dibromomethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Diethyl Ether	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Di-isopropyl ether	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Ethylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Isopropylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Methylene Chloride	ND (0.0251)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Naphthalene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
n-Butylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
n-Propylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
sec-Butylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Styrene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
tert-Butylbenzene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Tetrachloroethene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Tetrahydrofuran	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
 Client Project ID: Textron Providence  
 Client Sample ID: Material S and S Loam A  
 Date Sampled: 10/26/15 13:50  
 Percent Solids: 92  
 Initial Volume: 5.4  
 Final Volume: 10  
 Extraction Method: 5035

ESS Laboratory Work Order: 1510738  
 ESS Laboratory Sample ID: 1510738-01  
 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 (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Trichloroethene	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Vinyl Acetate	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Vinyl Chloride	ND (0.0100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Xylene O	ND (0.0050)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Xylene P,M	ND (0.0100)		8260B Low		1	10/28/15 17:01	CYJ0384	CJ52830
Xylenes (Total)	ND (0.0100)		8260B Low		1	10/28/15 17:01		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	124 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	93 %		70-130
<i>Surrogate: Toluene-d8</i>	125 %		70-130



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 19.7  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 10/27/15 12:35

**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	118 (41.3)		8100M		1	10/28/15 12:55	CYJ0361	CJ52723
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		83 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 15  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
1,2,4-Trichlorobenzene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
1,2-Dichlorobenzene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
1,3-Dichlorobenzene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
1,4-Dichlorobenzene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,3,4,6-Tetrachlorophenol	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,4,5-Trichlorophenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,4,6-Trichlorophenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,4-Dichlorophenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,4-Dimethylphenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,4-Dinitrophenol	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,4-Dinitrotoluene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2,6-Dinitrotoluene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2-Chloronaphthalene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2-Chlorophenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2-Methylnaphthalene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2-Methylphenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2-Nitroaniline	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
2-Nitrophenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
3,3'-Dichlorobenzidine	ND (0.723)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
3+4-Methylphenol	ND (0.723)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
3-Nitroaniline	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4,6-Dinitro-2-Methylphenol	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4-Bromophenyl-phenylether	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4-Chloro-3-Methylphenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4-Chloroaniline	ND (0.723)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4-Chloro-phenyl-phenyl ether	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4-Nitroaniline	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
4-Nitrophenol	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Acenaphthene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Acenaphthylene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Acetophenone	ND (0.723)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 15  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.723)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Anthracene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Azobenzene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzo(a)anthracene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzo(a)pyrene	ND (0.181)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzo(b)fluoranthene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzo(g,h,i)perylene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzo(k)fluoranthene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzoic Acid	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Benzyl Alcohol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
bis(2-Chloroethoxy)methane	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
bis(2-Chloroethyl)ether	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
bis(2-chloroisopropyl)Ether	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
bis(2-Ethylhexyl)phthalate	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Butylbenzylphthalate	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Carbazole	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Chrysene	ND (0.181)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Dibenzo(a,h)Anthracene	ND (0.181)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Dibenzofuran	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Diethylphthalate	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Dimethylphthalate	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Di-n-butylphthalate	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Di-n-octylphthalate	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Fluoranthene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Fluorene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Hexachlorobenzene	ND (0.181)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Hexachlorobutadiene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Hexachlorocyclopentadiene	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Hexachloroethane	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Indeno(1,2,3-cd)Pyrene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Isophorone	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Naphthalene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
 Client Project ID: Textron Providence  
 Client Sample ID: Material S and S Loam A  
 Date Sampled: 10/26/15 13:50  
 Percent Solids: 92  
 Initial Volume: 15  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1510738  
 ESS Laboratory Sample ID: 1510738-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: VSC  
 Prepared: 10/28/15 14:06

**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 (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
N-Nitrosodimethylamine	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
N-Nitroso-Di-n-Propylamine	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
N-nitrosodiphenylamine	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Pentachlorophenol	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Phenanthrene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Phenol	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Pyrene	ND (0.361)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820
Pyridine	ND (1.81)		8270D		1	10/28/15 22:03	CYJ0398	CJ52820

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	48 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	67 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	52 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	64 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	48 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	54 %		30-130
<i>Surrogate: Phenol-d6</i>	53 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	79 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	5.77 (N/A)		9045		1	JLK	10/26/15 19:25	S.U.	CJ52639
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.7 °C.								



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 5.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01RE1  
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	10/29/15 17:45	CYJ0402	CJ52924
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1,4-Dioxane	ND (0.0935)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
1-Chlorohexane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
2-Butanone	ND (0.0467)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
2-Chlorotoluene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
2-Hexanone	ND (0.0467)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
4-Chlorotoluene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
4-Methyl-2-Pentanone	ND (0.0467)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Acetone	ND (0.0467)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Benzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Bromobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam A  
Date Sampled: 10/26/15 13:50  
Percent Solids: 92  
Initial Volume: 5.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510738  
ESS Laboratory Sample ID: 1510738-01RE1  
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	10/29/15 17:45	CYJ0402	CJ52924
Bromodichloromethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Bromoform	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Bromomethane	ND (0.0093)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Carbon Disulfide	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Chlorobenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Chloroethane	ND (0.0093)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Chloroform	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Chloromethane	ND (0.0093)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Dibromochloromethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Dibromomethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Dichlorodifluoromethane	ND (0.0093)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Diethyl Ether	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Di-isopropyl ether	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Ethylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Isopropylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Methylene Chloride	ND (0.0234)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Naphthalene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
n-Butylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
n-Propylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
sec-Butylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Styrene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
tert-Butylbenzene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Tetrachloroethene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Tetrahydrofuran	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
 Client Project ID: Textron Providence  
 Client Sample ID: Material S and S Loam A  
 Date Sampled: 10/26/15 13:50  
 Percent Solids: 92  
 Initial Volume: 5.8  
 Final Volume: 10  
 Extraction Method: 5035

ESS Laboratory Work Order: 1510738  
 ESS Laboratory Sample ID: 1510738-01RE1  
 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	10/29/15 17:45	CYJ0402	CJ52924
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Trichloroethene	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Vinyl Acetate	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Vinyl Chloride	ND (0.0093)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Xylene O	ND (0.0047)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Xylene P,M	ND (0.0093)		8260B Low		1	10/29/15 17:45	CYJ0402	CJ52924
Xylenes (Total)	ND (0.0093)		8260B Low		1	10/29/15 17:45		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>121 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>116 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52734 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet							
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**LCS**

Mercury	9.36	1.98	mg/kg wet	9.700		97	80-120			
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**LCS Dup**

Mercury	9.45	1.94	mg/kg wet	9.700		97	80-120	1	20	
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**Batch CJ52735 - 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	50.9	9.43	mg/kg wet	52.30		97	80-120			
Barium	150	9.43	mg/kg wet	145.0		103	80-120			
Cadmium	54.6	1.89	mg/kg wet	71.60		76	62-138			
Chromium	78.4	3.77	mg/kg wet	88.50		89	80-120			
Selenium	70.1	18.9	mg/kg wet	81.10		86	80-120			
Silver	116	1.89	mg/kg wet	114.0		102	80-120			

**LCS Dup**

Arsenic	50.2	10.0	mg/kg wet	52.30		96	80-120	1	20	
Barium	134	10.0	mg/kg wet	145.0		93	80-120	11	20	
Cadmium	53.7	2.00	mg/kg wet	71.60		75	62-138	2	20	
Chromium	77.0	4.00	mg/kg wet	88.50		87	80-120	2	20	
Selenium	59.5	20.0	mg/kg wet	81.10		73	64-137	16	20	
Silver	113	2.00	mg/kg wet	114.0		99	80-120	3	20	

**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CJ52830 - 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							



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52830 - 5035**

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
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet
Methylene Chloride	ND	0.0250	mg/kg wet





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52830 - 5035**

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	0.0533		mg/kg wet	0.05000		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.0343		mg/kg wet	0.05000		69	70-130			S-
Surrogate: Dibromofluoromethane	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0543		mg/kg wet	0.05000		109	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,1,1-Trichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,1,2,2-Tetrachloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,1-Dichloropropene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichlorobenzene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,3-Trichloropropane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
1,2,4-Trichlorobenzene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,4-Trimethylbenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0639	0.0050	mg/kg wet	0.05000		128	70-130			
1,2-Dibromoethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichlorobenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloroethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dichloropropane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,3-Dichloropropane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dioxane	1.13	0.100	mg/kg wet	1.000		113	70-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52830 - 5035**

1-Chlorohexane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
2,2-Dichloropropane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
2-Butanone	0.241	0.0500	mg/kg wet	0.2500		97	70-130			
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.298	0.0500	mg/kg wet	0.2500		119	70-130			
4-Chlorotoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
Acetone	0.312	0.0500	mg/kg wet	0.2500		125	70-130			
Benzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromobenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Bromochloromethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Bromodichloromethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Bromoform	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Bromomethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130			
Carbon Disulfide	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Carbon Tetrachloride	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0372	0.0100	mg/kg wet	0.05000		74	70-130			
Chloroform	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Chloromethane	0.0480	0.0100	mg/kg wet	0.05000		96	70-130			
cis-1,2-Dichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Dibromochloromethane	0.0623	0.0050	mg/kg wet	0.05000		125	70-130			
Dibromomethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0447	0.0100	mg/kg wet	0.05000		89	70-130			
Diethyl Ether	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Di-isopropyl ether	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
Ethyl tertiary-butyl ether	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Hexachlorobutadiene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130			
Isopropylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Methyl tert-Butyl Ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Methylene Chloride	0.0563	0.0250	mg/kg wet	0.05000		113	70-130			
Naphthalene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
n-Propylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
tert-Butylbenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Tetrahydrofuran	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Toluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



*CERTIFICATE OF ANALYSIS*

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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510738

**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 CJ52830 - 5035**

trans-1,3-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Trichloroethene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichlorofluoromethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Vinyl Acetate	0.0877	0.0050	mg/kg wet	0.05000		175	70-130			B+
Vinyl Chloride	0.0406	0.0100	mg/kg wet	0.05000		81	70-130			
Xylene O	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130			
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0451		mg/kg wet	0.05000		90	70-130			
Surrogate: 4-Bromofluorobenzene	0.0530		mg/kg wet	0.05000		106	70-130			
Surrogate: Dibromofluoromethane	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Toluene-d8	0.0531		mg/kg wet	0.05000		106	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	0.04	25	
1,1,1-Trichloroethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.3	25	
1,1,2,2-Tetrachloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	12	25	
1,1,2-Trichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,1-Dichloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,1-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.08	25	
1,1-Dichloropropene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
1,2,3-Trichlorobenzene	0.0243	0.0050	mg/kg wet	0.05000		49	70-130	78	25	B-, D+
1,2,3-Trichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	15	25	
1,2,4-Trichlorobenzene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
1,2,4-Trimethylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0648	0.0050	mg/kg wet	0.05000		130	70-130	1	25	
1,2-Dibromoethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,2-Dichlorobenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,2-Dichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,2-Dichloropropane	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
1,3,5-Trimethylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
1,3-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
1,3-Dichloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.7	25	
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130	0.5	20	
1-Chlorohexane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
2,2-Dichloropropane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
2-Butanone	0.251	0.0500	mg/kg wet	0.2500		100	70-130	4	25	
2-Chlorotoluene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
2-Hexanone	0.291	0.0500	mg/kg wet	0.2500		116	70-130	2	25	
4-Chlorotoluene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
4-Isopropyltoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.4	25	
4-Methyl-2-Pentanone	0.283	0.0500	mg/kg wet	0.2500		113	70-130	4	25	
Acetone	0.304	0.0500	mg/kg wet	0.2500		121	70-130	3	25	
Benzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	0.6	25	
Bromobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	11	25	



*CERTIFICATE OF ANALYSIS*

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ESS Laboratory Work Order: 1510738

**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 CJ52830 - 5035**

Bromochloromethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Bromodichloromethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
Bromoform	0.0432	0.0050	mg/kg wet	0.05000		86	70-130	23	25	
Bromomethane	0.0470	0.0100	mg/kg wet	0.05000		94	70-130	3	25	
Carbon Disulfide	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
Carbon Tetrachloride	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	0.3	25	
Chlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	0.6	25	
Chloroethane	0.0446	0.0100	mg/kg wet	0.05000		89	70-130	18	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Chloromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130	1	25	
cis-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	0.6	25	
cis-1,3-Dichloropropene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Dibromochloromethane	0.0596	0.0050	mg/kg wet	0.05000		119	70-130	5	25	
Dibromomethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Dichlorodifluoromethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130	2	25	
Diethyl Ether	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Di-isopropyl ether	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
Ethyl tertiary-butyl ether	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Ethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	5	25	
Hexachlorobutadiene	0.0610	0.0050	mg/kg wet	0.05000		122	70-130	5	25	
Isopropylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	12	25	
Methyl tert-Butyl Ether	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
Methylene Chloride	0.0559	0.0250	mg/kg wet	0.05000		112	70-130	0.6	25	
Naphthalene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
n-Butylbenzene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	6	25	
n-Propylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
sec-Butylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Styrene	0.0411	0.0050	mg/kg wet	0.05000		82	70-130	22	25	
tert-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tertiary-amyl methyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
Tetrahydrofuran	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	4	25	
Toluene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
trans-1,2-Dichloroethene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
trans-1,3-Dichloropropene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Trichloroethene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Trichlorofluoromethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.2	25	
Vinyl Acetate	0.0918	0.0050	mg/kg wet	0.05000		184	70-130	5	25	B+
Vinyl Chloride	0.0406	0.0100	mg/kg wet	0.05000		81	70-130	0.05	25	
Xylene O	0.0370	0.0050	mg/kg wet	0.05000		74	70-130	30	25	D+
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130	8	25	
Xylenes (Total)	0.131	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0435		mg/kg wet	0.05000		87	70-130			
Surrogate: Dibromofluoromethane	0.0470		mg/kg wet	0.05000		94	70-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52830 - 5035**

Surrogate: Toluene-d8      0.0498      mg/kg wet      0.05000      100      70-130

**Batch CJ52924 - 5035**

**Blank**

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



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52924 - 5035**

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	0.0585		mg/kg wet	0.05000		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0529		mg/kg wet	0.05000		106	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1-Dichloropropene	0.0490	0.0050	mg/kg wet	0.05000		98	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 CJ52924 - 5035**

1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,4-Trichlorobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trimethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dibromoethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,3-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dichlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
2-Butanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
2-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Hexanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
4-Chlorotoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
4-Methyl-2-Pentanone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130			
Benzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Bromoform	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0478	0.0100	mg/kg wet	0.05000		96	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
Chloroform	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0535	0.0100	mg/kg wet	0.05000		107	70-130			
cis-1,2-Dichloroethene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
cis-1,3-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Dibromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Dibromomethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0494	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Hexachlorobutadiene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
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ESS Laboratory Work Order: 1510738

**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 CJ52924 - 5035**

Isopropylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Methyl tert-Butyl Ether	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Methylene Chloride	0.0610	0.0250	mg/kg wet	0.05000		122	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
sec-Butylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
tert-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0585	0.0050	mg/kg wet	0.05000		117	70-130			
Toluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0891	0.0050	mg/kg wet	0.05000		178	70-130			B+
Vinyl Chloride	0.0449	0.0100	mg/kg wet	0.05000		90	70-130			
Xylene O	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Xylene P,M	0.0901	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0482		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0478		mg/kg wet	0.05000		96	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
1,1,1-Trichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
1,1-Dichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,1-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	6	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.8	25	
1,2,3-Trichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	14	25	
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,4-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.6	25	
1,2-Dichlorobenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	9	25	
1,2-Dichloropropane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,3,5-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	15	25	
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	5	25	





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52924 - 5035**

1,3-Dichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
1,4-Dioxane	1.01	0.100	mg/kg wet	1.000		101	70-130	15	20	
1-Chlorohexane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
2,2-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	5	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		94	70-130	15	25	
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
2-Hexanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130	8	25	
4-Chlorotoluene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.09	25	
4-Methyl-2-Pentanone	0.247	0.0500	mg/kg wet	0.2500		99	70-130	19	25	
Acetone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	20	25	
Benzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Bromobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Bromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	9	25	
Bromodichloromethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromoform	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
Bromomethane	0.0454	0.0100	mg/kg wet	0.05000		91	70-130	5	25	
Carbon Disulfide	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Carbon Tetrachloride	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Chlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Chloroethane	0.0421	0.0100	mg/kg wet	0.05000		84	70-130	12	25	
Chloroform	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
Chloromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130	7	25	
cis-1,2-Dichloroethene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
cis-1,3-Dichloropropene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Dibromochloromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
Dibromomethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
Dichlorodifluoromethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Diethyl Ether	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
Di-isopropyl ether	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
Ethyl tertiary-butyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.1	25	
Hexachlorobutadiene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	1	25	
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Methyl tert-Butyl Ether	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	11	25	
Methylene Chloride	0.0572	0.0250	mg/kg wet	0.05000		114	70-130	6	25	
Naphthalene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
n-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
n-Propylbenzene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	11	25	
sec-Butylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
tert-Butylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Tertiary-amyl methyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	



*CERTIFICATE OF ANALYSIS*

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**Quality Control Data**

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

**Batch CJ52924 - 5035**

Tetrahydrofuran	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	19	25	
Toluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	6	25	
trans-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
trans-1,3-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	10	25	
Trichloroethene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Vinyl Acetate	0.0794	0.0050	mg/kg wet	0.05000		159	70-130	12	25	B+
Vinyl Chloride	0.0419	0.0100	mg/kg wet	0.05000		84	70-130	7	25	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.8	25	
Xylene P,M	0.0887	0.0100	mg/kg wet	0.1000		89	70-130	2	25	
Xylenes (Total)	0.134	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0506		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0515		mg/kg wet	0.05000		103	70-130			

8100M Total Petroleum Hydrocarbons

**Batch CJ52723 - 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

4.66 mg/kg wet 5.000 93 40-140

**LCS**

Decane (C10)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		82	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		107	40-140			



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**Quality Control Data**

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**8100M Total Petroleum Hydrocarbons**

**Batch CJ52723 - 3546**

Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		113	40-140			
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Tetradecane (C14)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Total Petroleum Hydrocarbons	42.0	37.5	mg/kg wet	35.00		120	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		101	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.91</i>		mg/kg wet	<i>5.000</i>		<i>98</i>	<i>40-140</i>			
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**LCS Dup**

Decane (C10)	2.3	0.2	mg/kg wet	2.500		91	40-140	4	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		111	40-140	4	25	
Dodecane (C12)	2.6	0.2	mg/kg wet	2.500		104	40-140	2	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		110	40-140	4	25	
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		113	40-140	3	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		78	30-140	4	25	
Octacosane (C28)	2.6	0.2	mg/kg wet	2.500		102	40-140	5	25	
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		103	40-140	4	25	
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		109	40-140	2	25	
Total Petroleum Hydrocarbons	40.2	37.5	mg/kg wet	35.00		115	40-140	4	25	
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140	5	25	

<i>Surrogate: O-Terphenyl</i>	<i>4.63</i>		mg/kg wet	<i>5.000</i>		<i>93</i>	<i>40-140</i>			
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**8270D Semi-Volatile Organic Compounds**

**Batch CJ52820 - 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							



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8270D Semi-Volatile Organic Compounds

**Batch CJ52820 - 3546**

2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							



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8270D Semi-Volatile Organic Compounds

**Batch CJ52820 - 3546**

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	2.59		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Chlorophenol-d4	3.92		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.60		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	3.93		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	3.17		mg/kg wet	3.333		95	30-130			

**LCS**

1,1-Biphenyl	2.29	0.333	mg/kg wet	3.333		69	40-140			
1,2,4-Trichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.17	1.67	mg/kg wet	3.333		65	30-130			
2,4,5-Trichlorophenol	2.65	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.43	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dinitrophenol	2.18	1.67	mg/kg wet	3.333		65	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.62	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.11	0.333	mg/kg wet	3.333		63	40-140			
2-Chlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Methylnaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Methylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2-Nitroaniline	2.03	0.333	mg/kg wet	3.333		61	40-140			
2-Nitrophenol	2.40	0.333	mg/kg wet	3.333		72	30-130			
3,3'-Dichlorobenzidine	2.45	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.94	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			
4,6-Dinitro-2-Methylphenol	3.24	1.67	mg/kg wet	3.333		97	30-130			
4-Bromophenyl-phenylether	2.58	0.333	mg/kg wet	3.333		77	40-140			
4-Chloro-3-Methylphenol	2.44	0.333	mg/kg wet	3.333		73	30-130			



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8270D Semi-Volatile Organic Compounds

**Batch CJ52820 - 3546**

4-Chloroaniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
4-Chloro-phenyl-phenyl ether	2.53	0.333	mg/kg wet	3.333		76	40-140			
4-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
4-Nitrophenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
Acenaphthene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acenaphthylene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acetophenone	2.16	0.667	mg/kg wet	3.333		65	40-140			
Aniline	1.64	0.667	mg/kg wet	3.333		49	40-140			
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)anthracene	3.15	0.333	mg/kg wet	3.333		94	40-140			
Benzo(a)pyrene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		92	40-140			
Benzo(g,h,i)perylene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	2.43	0.333	mg/kg wet	3.333		73	40-140			
Benzoic Acid	2.04	1.67	mg/kg wet	3.333		61	40-140			
Benzyl Alcohol	1.74	0.333	mg/kg wet	3.333		52	40-140			
bis(2-Chloroethoxy)methane	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	1.99	0.333	mg/kg wet	3.333		60	40-140			
bis(2-chloroisopropyl)Ether	2.22	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Carbazole	2.99	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	3.06	0.167	mg/kg wet	3.333		92	40-140			
Dibenzo(a,h)Anthracene	3.34	0.167	mg/kg wet	3.333		100	40-140			
Dibenzofuran	2.36	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140			
Dimethylphthalate	2.65	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.40	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140			
Hexachlorobutadiene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Hexachlorocyclopentadiene	1.85	1.67	mg/kg wet	3.333		56	40-140			
Hexachloroethane	2.21	0.333	mg/kg wet	3.333		66	40-140			
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Isophorone	2.36	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140			
Nitrobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140			
N-Nitrosodimethylamine	2.15	0.333	mg/kg wet	3.333		64	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		84	40-140			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52820 - 3546**

Phenol	2.19	0.333	mg/kg wet	3.333		66	30-130			
Pyrene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Pyridine	1.67	1.67	mg/kg wet	3.333		50	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.42		mg/kg wet	3.333		73	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.56		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: Nitrobenzene-d5	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: p-Terphenyl-d14	3.31		mg/kg wet	3.333		99	30-130			

**LCS Dup**

1,1-Biphenyl	2.50	0.333	mg/kg wet	3.333		75	40-140	9	30	
1,2,4-Trichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140	8	30	
1,2-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,3-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	11	30	
2,3,4,6-Tetrachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	9	30	
2,4,5-Trichlorophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	8	30	
2,4,6-Trichlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130	11	30	
2,4-Dichlorophenol	2.78	0.333	mg/kg wet	3.333		83	30-130	14	30	
2,4-Dimethylphenol	2.72	0.333	mg/kg wet	3.333		82	30-130	13	30	
2,4-Dinitrophenol	2.54	1.67	mg/kg wet	3.333		76	30-130	15	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	11	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	9	30	
2-Chlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	12	30	
2-Methylnaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140	14	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	15	30	
2-Nitroaniline	2.25	0.333	mg/kg wet	3.333		68	40-140	10	30	
2-Nitrophenol	2.75	0.333	mg/kg wet	3.333		83	30-130	14	30	
3,3'-Dichlorobenzidine	2.63	0.667	mg/kg wet	3.333		79	40-140	7	30	
3+4-Methylphenol	5.69	0.667	mg/kg wet	6.667		85	30-130	14	30	
3-Nitroaniline	2.74	0.333	mg/kg wet	3.333		82	40-140	10	30	
4,6-Dinitro-2-Methylphenol	3.65	1.67	mg/kg wet	3.333		109	30-130	12	30	
4-Bromophenyl-phenylether	2.72	0.333	mg/kg wet	3.333		82	40-140	5	30	
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130	16	30	
4-Chloroaniline	2.33	0.667	mg/kg wet	3.333		70	40-140	22	30	
4-Chloro-phenyl-phenyl ether	2.73	0.333	mg/kg wet	3.333		82	40-140	8	30	
4-Nitroaniline	3.13	0.333	mg/kg wet	3.333		94	40-140	10	30	
4-Nitrophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	12	30	
Acenaphthene	2.68	0.333	mg/kg wet	3.333		80	40-140	9	30	
Acenaphthylene	2.69	0.333	mg/kg wet	3.333		81	40-140	10	30	
Acetophenone	2.50	0.667	mg/kg wet	3.333		75	40-140	15	30	
Aniline	1.93	0.667	mg/kg wet	3.333		58	40-140	16	30	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52820 - 3546**

Anthracene	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Azobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Benzo(a)anthracene	3.29	0.333	mg/kg wet	3.333		99	40-140	4	30	
Benzo(a)pyrene	3.02	0.167	mg/kg wet	3.333		90	40-140	3	30	
Benzo(b)fluoranthene	3.24	0.333	mg/kg wet	3.333		97	40-140	6	30	
Benzo(g,h,i)perylene	2.97	0.333	mg/kg wet	3.333		89	40-140	5	30	
Benzo(k)fluoranthene	2.66	0.333	mg/kg wet	3.333		80	40-140	9	30	
Benzoic Acid	2.43	1.67	mg/kg wet	3.333		73	40-140	18	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	27	30	
bis(2-Chloroethoxy)methane	2.58	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Chloroethyl)ether	2.31	0.333	mg/kg wet	3.333		69	40-140	15	30	
bis(2-chloroisopropyl)Ether	2.50	0.333	mg/kg wet	3.333		75	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.40	0.333	mg/kg wet	3.333		102	40-140	4	30	
Butylbenzylphthalate	3.22	0.333	mg/kg wet	3.333		97	40-140	6	30	
Carbazole	3.17	0.333	mg/kg wet	3.333		95	40-140	6	30	
Chrysene	3.22	0.167	mg/kg wet	3.333		96	40-140	5	30	
Dibenzo(a,h)Anthracene	3.55	0.167	mg/kg wet	3.333		106	40-140	6	30	
Dibenzofuran	2.60	0.333	mg/kg wet	3.333		78	40-140	10	30	
Diethylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140	8	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	8	30	
Di-n-butylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	6	30	
Di-n-octylphthalate	3.65	0.333	mg/kg wet	3.333		110	40-140	7	30	
Fluoranthene	3.23	0.333	mg/kg wet	3.333		97	40-140	7	30	
Fluorene	2.92	0.333	mg/kg wet	3.333		88	40-140	9	30	
Hexachlorobenzene	2.56	0.167	mg/kg wet	3.333		77	40-140	3	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	9	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	10	30	
Hexachloroethane	2.41	0.333	mg/kg wet	3.333		72	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140	12	30	
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
Nitrobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	10	30	
N-Nitrosodimethylamine	2.36	0.333	mg/kg wet	3.333		71	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.90	0.333	mg/kg wet	3.333		87	40-140	4	30	
Pentachlorophenol	2.35	1.67	mg/kg wet	3.333		71	30-130	12	30	
Phenanthrene	2.92	0.333	mg/kg wet	3.333		88	40-140	5	30	
Phenol	2.85	0.333	mg/kg wet	3.333		86	30-130	26	30	
Pyrene	3.31	0.333	mg/kg wet	3.333		99	40-140	6	30	
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.87		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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 CJ52820 - 3546**

<i>Surrogate: Phenol-d6</i>	3.91		mg/kg wet	5.000		78	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	3.38		mg/kg wet	3.333		101	30-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.7 °C.
- U Analyte included in the analysis, but not detected
- S- Surrogate recovery(ies) below lower control limit (S-).
- Q Calibration required quadratic regression (Q).
- I Internal Standard(s) outside of criteria (I).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- B- Blank Spike recovery is below lower control limit (B-).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510738

**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](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](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](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: 15100738  
 Date Project Due: 11/2/15  
 Days For Project: 5 Day

#### Items to be checked upon receipt:

- |   |                               |   |   |
|---|-------------------------------|---|---|
| 1. Air Bill Manifest Present?                 | <input type="checkbox"/> * No | 10. Are the samples properly preserved?   | <input type="checkbox"/> Yes  |
| Air No.:                                      |                               | 11. Proper sample containers used?        | <input type="checkbox"/> Yes  |
| 2. Were Custody Seals Present?                | <input type="checkbox"/> No   | 12. Any air bubbles in the VOA vials?     | <input type="checkbox"/> N/A  |
| 3. Were Custody Seals Intact?                 | <input type="checkbox"/> N/A  | 13. Holding times exceeded?               | <input type="checkbox"/> No   |
| 4. Is Radiation count < 100 CPM?              | <input type="checkbox"/> Yes  | 14. Sufficient sample volumes?            | <input type="checkbox"/> Yes  |
| 5. Is a cooler present?                       | <input type="checkbox"/> Yes  | 15. Any Subcontracting needed?            | <input type="checkbox"/> No   |
| <input type="text" value="Cooler Temp: 5.3"/> |                               | 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.

6k vials frozen @ 1750 JF 10/26/15

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: 10/26/15 1629

Reviewed By: [Signature]

Date/Time: 10/26/15 1709

# ESS Laboratory

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

# CHAIN OF CUSTODY

Turn Time: 5 Days  
 Regulatory State: Rhode Island  
 Is this project for any of the following?:  
 OCT RCP  MA MCP  RGP  DOD  
 Project # 74-15-0002.134 Project Name Textron Providence  
 Address 500 Harrison Avenue, Suite 4R PO #  
 City Boston State MA Zip Code 02118  
 Telephone Number (857) 246-8812 FAX Number  
 Contact Person Paul J. Leofanti, Jr. Email Address pleofanti@charter.us  
 Company Name Charter Environmental

ESS Lab # 1510738

Reporting Limits RI DEM RDEC

Electronic Deliverables  Data Checker  Excel  
 Other (Please Specify →)

ESS Lab ID	Collection Date	Collection Time	FAX Number	State	City	Address	Sample Matrix	Sample Type	Material S&S	Loam	A	PH: Corrosivity 9045	VOC	VOC Low Level	SVOC	RCRA 8	TPH	Analysis	
1	10/26/15	1350		MA	Boston	500 Harrison Avenue, Suite 4R	Soil	Grab	Material S&S	Loam	A	X	X	X	X	X	X	X	

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial  
 Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other  
 Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2SO3, 8-ZnAc, 9-NaOH, 10-NH4Cl, 11-Other

Number of Containers: 1 1 1 2 1

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

Cooler Present: yes  Drop Off  Pickup  
 Seals Intact: no  Technician Hours →  
 Cooler Temperature: 5.3 <sup>35</sup> / <sub>70</sub> / <sub>10/26/15</sub>  
 Relinquished by: (Signature, Date & Time) MKE 10/26/15 1448  
 Received by: (Signature, Date & Time)  
 Relinquished by: (Signature, Date & Time) PK-EZ-N 10/26/15 1445  
 Received by: (Signature, Date & Time)



*CERTIFICATE OF ANALYSIS*

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

**RE: Textron Providence (74-15-0002.134)**  
**ESS Laboratory Work Order Number: 1510739**

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 5:01 pm, Nov 02, 2015**

**Analytical Summary**

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

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



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**SAMPLE RECEIPT**

The following samples were received on October 26, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on October 26, 2015 at 17:50.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510739-01	Material S and S Loam B	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

- 1510739-01RE1 Internal Standard(s) outside of criteria (I).  
1,4-Dichlorobenzene-D4 (38% @ 50-200%)
- CJ52830-BLK1 Internal Standard(s) outside of criteria (I).  
1,4-Dichlorobenzene-D4 (44% @ 50-200%)
- CJ52830-BLK1 Surrogate recovery(ies) below lower control limit (S-).  
4-Bromofluorobenzene (69% @ 70-130%)
- CJ52830-BS1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (175% @ 70-130%)
- CJ52830-BSD1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (184% @ 70-130%)
- CJ52830-BSD1 Blank Spike recovery is below lower control limit (B-).  
1,2,3-Trichlorobenzene (49% @ 70-130%)
- CJ52830-BSD1 Relative percent difference for duplicate is outside of criteria (D+).  
1,2,3-Trichlorobenzene (78% @ 25%), Xylene O (30% @ 25%)
- CJ52924-BS1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (178% @ 70-130%)
- CJ52924-BSD1 Blank Spike recovery is above upper control limit (B+).  
Vinyl Acetate (159% @ 70-130%)
- CYJ0402-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
1,2,3-Trichloropropane (36% @ 30%), 1,4-Dioxane (33% @ 30%), Acetone (32% @ 30%), Vinyl Acetate (118% @ 30%)

**8270D Semi-Volatile Organic Compounds**

- CYJ0398-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (116% @ 80-120%)
- CYJ0416-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (90% @ 80-120%), Benzoic Acid (83% @ 80-120%)
- CYJ0416-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
Di-n-octylphthalate (27% @ 20%)
- CYJ0416-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).  
Pentachlorophenol (29% @ 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: 1510739

**DATA USABILITY LINKS**

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

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

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

**Prep Methods**

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

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



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (2.63)		6010C		1	KJK	10/28/15 19:40	2.06	100	CJ52735
<b>Barium</b>	<b>30.0</b> (2.63)		6010C		1	KJK	10/28/15 4:37	2.06	100	CJ52735
Cadmium	ND (0.53)		6010C		1	KJK	10/28/15 4:37	2.06	100	CJ52735
<b>Chromium</b>	<b>5.42</b> (1.05)		6010C		1	KJK	10/28/15 4:37	2.06	100	CJ52735
<b>Lead</b>	<b>13.0</b> (5.26)		6010C		1	KJK	10/28/15 19:40	2.06	100	CJ52735
<b>Mercury</b>	<b>0.040</b> (0.032)		7471B		1	PJP	10/28/15 13:13	0.66	40	CJ52734
Selenium	ND (21.0)		6010C		4	KJK	10/29/15 15:05	2.06	100	CJ52735
Silver	ND (0.53)		6010C		1	KJK	10/28/15 4:37	2.06	100	CJ52735



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 5.7  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
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	10/28/15 17:29	CYJ0384	CJ52830
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1,4-Dioxane	ND (0.0950)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
1-Chlorohexane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
2-Butanone	ND (0.0475)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
2-Chlorotoluene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
2-Hexanone	ND (0.0475)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
4-Chlorotoluene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
4-Methyl-2-Pentanone	ND (0.0475)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Acetone	ND (0.0475)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Benzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Bromobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 5.7  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
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	10/28/15 17:29	CYJ0384	CJ52830
Bromodichloromethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Bromoform	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Bromomethane	ND (0.0095)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Carbon Disulfide	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Chlorobenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Chloroethane	ND (0.0095)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Chloroform	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Chloromethane	ND (0.0095)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Dibromochloromethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Dibromomethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Dichlorodifluoromethane	ND (0.0095)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Diethyl Ether	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Di-isopropyl ether	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Ethylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Isopropylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Methylene Chloride	ND (0.0237)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Naphthalene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
n-Butylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
n-Propylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
sec-Butylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Styrene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
tert-Butylbenzene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Tetrachloroethene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Tetrahydrofuran	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 5.7  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
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	10/28/15 17:29	CYJ0384	CJ52830
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Trichloroethene	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Vinyl Acetate	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Vinyl Chloride	ND (0.0095)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Xylene O	ND (0.0047)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Xylene P,M	ND (0.0095)		8260B Low		1	10/28/15 17:29	CYJ0384	CJ52830
Xylenes (Total)	ND (0.0095)		8260B Low		1	10/28/15 17:29		[CALC]

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



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 19.4  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 10/27/15 12:35

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	149 (41.9)		8100M		1	10/28/15 13:34	CYJ0361	CJ52723
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>87 %</i>		<i>40-140</i>				



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 15.9  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
1,2,4-Trichlorobenzene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
1,2-Dichlorobenzene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
1,3-Dichlorobenzene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
1,4-Dichlorobenzene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,3,4,6-Tetrachlorophenol	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,4,5-Trichlorophenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,4,6-Trichlorophenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,4-Dichlorophenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,4-Dimethylphenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,4-Dinitrophenol	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,4-Dinitrotoluene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2,6-Dinitrotoluene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2-Chloronaphthalene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2-Chlorophenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2-Methylnaphthalene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2-Methylphenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2-Nitroaniline	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
2-Nitrophenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
3,3'-Dichlorobenzidine	ND (0.681)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
3+4-Methylphenol	ND (0.681)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
3-Nitroaniline	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4,6-Dinitro-2-Methylphenol	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4-Bromophenyl-phenylether	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4-Chloro-3-Methylphenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4-Chloroaniline	ND (0.681)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4-Chloro-phenyl-phenyl ether	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4-Nitroaniline	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
4-Nitrophenol	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Acenaphthene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Acenaphthylene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Acetophenone	ND (0.681)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 15.9  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.681)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Anthracene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Azobenzene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzo(a)anthracene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzo(a)pyrene	ND (0.171)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzo(b)fluoranthene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzo(g,h,i)perylene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzo(k)fluoranthene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzoic Acid	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Benzyl Alcohol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
bis(2-Chloroethoxy)methane	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
bis(2-Chloroethyl)ether	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
bis(2-chloroisopropyl)Ether	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
bis(2-Ethylhexyl)phthalate	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Butylbenzylphthalate	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Carbazole	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Chrysene	ND (0.171)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Dibenzo(a,h)Anthracene	ND (0.171)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Dibenzofuran	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Diethylphthalate	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Dimethylphthalate	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Di-n-butylphthalate	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Di-n-octylphthalate	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Fluoranthene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Fluorene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Hexachlorobenzene	ND (0.171)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Hexachlorobutadiene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Hexachlorocyclopentadiene	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Hexachloroethane	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Indeno(1,2,3-cd)Pyrene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Isophorone	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Naphthalene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 15.9  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
N-Nitrosodimethylamine	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
N-Nitroso-Di-n-Propylamine	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
N-nitrosodiphenylamine	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Pentachlorophenol	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Phenanthrene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Phenol	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Pyrene	ND (0.340)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820
Pyridine	ND (1.71)		8270D		1	10/28/15 23:48	CYJ0398	CJ52820

	<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>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>69 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>55 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>61 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>62 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>79 %</i>		<i>30-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	5.29 (N/A)		9045		1	JLK	10/26/15 19:25	S.U.	CJ52639
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.5 °C.								



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 6.1  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01RE1  
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	10/29/15 18:14	CYJ0402	CJ52924
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,1,2,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1,4-Dioxane	ND (0.0887)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
1-Chlorohexane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
2-Butanone	ND (0.0444)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
2-Chlorotoluene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
2-Hexanone	ND (0.0444)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
4-Chlorotoluene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
4-Methyl-2-Pentanone	ND (0.0444)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Acetone	ND (0.0444)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Benzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Bromobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 6.1  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01RE1  
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	10/29/15 18:14	CYJ0402	CJ52924
Bromodichloromethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Bromoform	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Bromomethane	ND (0.0089)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Carbon Disulfide	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Chlorobenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Chloroethane	ND (0.0089)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Chloroform	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Chloromethane	ND (0.0089)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Dibromochloromethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Dibromomethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Diethyl Ether	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Di-isopropyl ether	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Ethylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Isopropylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Methylene Chloride	ND (0.0222)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Naphthalene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
n-Butylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
n-Propylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
sec-Butylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Styrene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
tert-Butylbenzene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Tetrachloroethene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Tetrahydrofuran	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam B  
Date Sampled: 10/26/15 14:00  
Percent Solids: 92  
Initial Volume: 6.1  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510739  
ESS Laboratory Sample ID: 1510739-01RE1  
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	10/29/15 18:14	CYJ0402	CJ52924
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Trichloroethene	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Vinyl Acetate	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Vinyl Chloride	ND (0.0089)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Xylene O	ND (0.0044)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Xylene P,M	ND (0.0089)		8260B Low		1	10/29/15 18:14	CYJ0402	CJ52924
Xylenes (Total)	ND (0.0089)		8260B Low		1	10/29/15 18:14		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>124 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>116 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52734 - 7471A**

**Blank**

Mercury ND 0.033 mg/kg wet

**LCS**

Mercury 9.36 1.98 mg/kg wet 9.700 97 80-120

**LCS Dup**

Mercury 9.45 1.94 mg/kg wet 9.700 97 80-120 1 20

**Batch CJ52735 - 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 50.9 9.43 mg/kg wet 52.30 97 80-120  
Barium 150 9.43 mg/kg wet 145.0 103 80-120  
Cadmium 54.6 1.89 mg/kg wet 71.60 76 62-138  
Chromium 78.4 3.77 mg/kg wet 88.50 89 80-120  
Selenium 70.1 18.9 mg/kg wet 81.10 86 80-120  
Silver 116 1.89 mg/kg wet 114.0 102 80-120

**LCS Dup**

Arsenic 50.2 10.0 mg/kg wet 52.30 96 80-120 1 20  
Barium 134 10.0 mg/kg wet 145.0 93 80-120 11 20  
Cadmium 53.7 2.00 mg/kg wet 71.60 75 62-138 2 20  
Chromium 77.0 4.00 mg/kg wet 88.50 87 80-120 2 20  
Selenium 59.5 20.0 mg/kg wet 81.10 73 64-137 16 20  
Silver 113 2.00 mg/kg wet 114.0 99 80-120 3 20

**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CJ52830 - 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



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52830 - 5035**

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
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet
Methylene Chloride	ND	0.0250	mg/kg wet



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52830 - 5035**

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	0.0533		mg/kg wet	0.05000		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.0343		mg/kg wet	0.05000		69	70-130			S-
Surrogate: Dibromofluoromethane	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0543		mg/kg wet	0.05000		109	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,1,1-Trichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,1,2,2-Tetrachloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloroethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,1-Dichloropropene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichlorobenzene	0.0557	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,3-Trichloropropane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			
1,2,4-Trichlorobenzene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,2,4-Trimethylbenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0639	0.0050	mg/kg wet	0.05000		128	70-130			
1,2-Dibromoethane	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichlorobenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloroethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dichloropropane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,3-Dichloropropane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
1,4-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
1,4-Dioxane	1.13	0.100	mg/kg wet	1.000		113	70-130			





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52830 - 5035**

1-Chlorohexane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
2,2-Dichloropropane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
2-Butanone	0.241	0.0500	mg/kg wet	0.2500		97	70-130			
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
2-Hexanone	0.298	0.0500	mg/kg wet	0.2500		119	70-130			
4-Chlorotoluene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
4-Methyl-2-Pentanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
Acetone	0.312	0.0500	mg/kg wet	0.2500		125	70-130			
Benzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Bromobenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130			
Bromochloromethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Bromodichloromethane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Bromoform	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Bromomethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130			
Carbon Disulfide	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Carbon Tetrachloride	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0372	0.0100	mg/kg wet	0.05000		74	70-130			
Chloroform	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Chloromethane	0.0480	0.0100	mg/kg wet	0.05000		96	70-130			
cis-1,2-Dichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Dibromochloromethane	0.0623	0.0050	mg/kg wet	0.05000		125	70-130			
Dibromomethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Dichlorodifluoromethane	0.0447	0.0100	mg/kg wet	0.05000		89	70-130			
Diethyl Ether	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Di-isopropyl ether	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
Ethyl tertiary-butyl ether	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Hexachlorobutadiene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130			
Isopropylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
Methyl tert-Butyl Ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Methylene Chloride	0.0563	0.0250	mg/kg wet	0.05000		113	70-130			
Naphthalene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
n-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
n-Propylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
tert-Butylbenzene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Tertiary-amyl methyl ether	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrachloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Tetrahydrofuran	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Toluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
trans-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52830 - 5035**

trans-1,3-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Trichloroethene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130			
Trichlorofluoromethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Vinyl Acetate	0.0877	0.0050	mg/kg wet	0.05000		175	70-130			B+
Vinyl Chloride	0.0406	0.0100	mg/kg wet	0.05000		81	70-130			
Xylene O	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130			
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0451		mg/kg wet	0.05000		90	70-130			
Surrogate: 4-Bromofluorobenzene	0.0530		mg/kg wet	0.05000		106	70-130			
Surrogate: Dibromofluoromethane	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Toluene-d8	0.0531		mg/kg wet	0.05000		106	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	0.04	25	
1,1,1-Trichloroethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.3	25	
1,1,2,2-Tetrachloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	12	25	
1,1,2-Trichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,1-Dichloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,1-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.08	25	
1,1-Dichloropropene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
1,2,3-Trichlorobenzene	0.0243	0.0050	mg/kg wet	0.05000		49	70-130	78	25	B-, D+
1,2,3-Trichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	15	25	
1,2,4-Trichlorobenzene	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	6	25	
1,2,4-Trimethylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0648	0.0050	mg/kg wet	0.05000		130	70-130	1	25	
1,2-Dibromoethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
1,2-Dichlorobenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	7	25	
1,2-Dichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,2-Dichloropropane	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
1,3,5-Trimethylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
1,3-Dichlorobenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
1,3-Dichloropropane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.7	25	
1,4-Dioxane	1.14	0.100	mg/kg wet	1.000		114	70-130	0.5	20	
1-Chlorohexane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
2,2-Dichloropropane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
2-Butanone	0.251	0.0500	mg/kg wet	0.2500		100	70-130	4	25	
2-Chlorotoluene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	7	25	
2-Hexanone	0.291	0.0500	mg/kg wet	0.2500		116	70-130	2	25	
4-Chlorotoluene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
4-Isopropyltoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.4	25	
4-Methyl-2-Pentanone	0.283	0.0500	mg/kg wet	0.2500		113	70-130	4	25	
Acetone	0.304	0.0500	mg/kg wet	0.2500		121	70-130	3	25	
Benzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	0.6	25	
Bromobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	11	25	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52830 - 5035**

Bromochloromethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Bromodichloromethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
Bromoform	0.0432	0.0050	mg/kg wet	0.05000		86	70-130	23	25	
Bromomethane	0.0470	0.0100	mg/kg wet	0.05000		94	70-130	3	25	
Carbon Disulfide	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
Carbon Tetrachloride	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	0.3	25	
Chlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	0.6	25	
Chloroethane	0.0446	0.0100	mg/kg wet	0.05000		89	70-130	18	25	
Chloroform	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
Chloromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130	1	25	
cis-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	0.6	25	
cis-1,3-Dichloropropene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Dibromochloromethane	0.0596	0.0050	mg/kg wet	0.05000		119	70-130	5	25	
Dibromomethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Dichlorodifluoromethane	0.0455	0.0100	mg/kg wet	0.05000		91	70-130	2	25	
Diethyl Ether	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Di-isopropyl ether	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
Ethyl tertiary-butyl ether	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Ethylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	5	25	
Hexachlorobutadiene	0.0610	0.0050	mg/kg wet	0.05000		122	70-130	5	25	
Isopropylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	12	25	
Methyl tert-Butyl Ether	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
Methylene Chloride	0.0559	0.0250	mg/kg wet	0.05000		112	70-130	0.6	25	
Naphthalene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	8	25	
n-Butylbenzene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130	6	25	
n-Propylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
sec-Butylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Styrene	0.0411	0.0050	mg/kg wet	0.05000		82	70-130	22	25	
tert-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	15	25	
Tertiary-amyl methyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
Tetrachloroethene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
Tetrahydrofuran	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	4	25	
Toluene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	1	25	
trans-1,2-Dichloroethene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
trans-1,3-Dichloropropene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Trichloroethene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Trichlorofluoromethane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.2	25	
Vinyl Acetate	0.0918	0.0050	mg/kg wet	0.05000		184	70-130	5	25	B+
Vinyl Chloride	0.0406	0.0100	mg/kg wet	0.05000		81	70-130	0.05	25	
Xylene O	0.0370	0.0050	mg/kg wet	0.05000		74	70-130	30	25	D+
Xylene P,M	0.0937	0.0100	mg/kg wet	0.1000		94	70-130	8	25	
Xylenes (Total)	0.131	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0435		mg/kg wet	0.05000		87	70-130			
Surrogate: Dibromofluoromethane	0.0470		mg/kg wet	0.05000		94	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
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ESS Laboratory Work Order: 1510739

**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 CJ52830 - 5035**

Surrogate: Toluene-d8      0.0498      mg/kg wet      0.05000      100      70-130

**Batch CJ52924 - 5035**

**Blank**

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



*CERTIFICATE OF ANALYSIS*

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ESS Laboratory Work Order: 1510739

**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 CJ52924 - 5035**

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	0.0585		mg/kg wet	0.05000		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0529		mg/kg wet	0.05000		106	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1-Dichloropropene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52924 - 5035**

1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,4-Trichlorobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trimethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dibromoethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,3-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dichlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
2-Butanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
2-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Hexanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
4-Chlorotoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
4-Methyl-2-Pentanone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130			
Benzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Bromoform	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0478	0.0100	mg/kg wet	0.05000		96	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
Chloroform	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0535	0.0100	mg/kg wet	0.05000		107	70-130			
cis-1,2-Dichloroethene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
cis-1,3-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Dibromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Dibromomethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0494	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Hexachlorobutadiene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			



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ESS Laboratory Work Order: 1510739

**Quality Control Data**

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5035/8260B Volatile Organic Compounds / Low Level

**Batch CJ52924 - 5035**

Isopropylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Methyl tert-Butyl Ether	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Methylene Chloride	0.0610	0.0250	mg/kg wet	0.05000		122	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
sec-Butylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
tert-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			
Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0585	0.0050	mg/kg wet	0.05000		117	70-130			
Toluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0891	0.0050	mg/kg wet	0.05000		178	70-130			B+
Vinyl Chloride	0.0449	0.0100	mg/kg wet	0.05000		90	70-130			
Xylene O	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Xylene P,M	0.0901	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0482		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0493		mg/kg wet	0.05000		99	70-130			
Surrogate: Toluene-d8	0.0478		mg/kg wet	0.05000		96	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
1,1,1-Trichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
1,1-Dichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,1-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	6	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.8	25	
1,2,3-Trichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	14	25	
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,4-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.6	25	
1,2-Dichlorobenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	9	25	
1,2-Dichloropropane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,3,5-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	15	25	
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	5	25	



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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510739

**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 CJ52924 - 5035**

1,3-Dichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
1,4-Dioxane	1.01	0.100	mg/kg wet	1.000		101	70-130	15	20	
1-Chlorohexane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
2,2-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	5	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		94	70-130	15	25	
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
2-Hexanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130	8	25	
4-Chlorotoluene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.09	25	
4-Methyl-2-Pentanone	0.247	0.0500	mg/kg wet	0.2500		99	70-130	19	25	
Acetone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	20	25	
Benzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Bromobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Bromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	9	25	
Bromodichloromethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromoform	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
Bromomethane	0.0454	0.0100	mg/kg wet	0.05000		91	70-130	5	25	
Carbon Disulfide	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Carbon Tetrachloride	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Chlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Chloroethane	0.0421	0.0100	mg/kg wet	0.05000		84	70-130	12	25	
Chloroform	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
Chloromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130	7	25	
cis-1,2-Dichloroethene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
cis-1,3-Dichloropropene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Dibromochloromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
Dibromomethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
Dichlorodifluoromethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Diethyl Ether	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
Di-isopropyl ether	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
Ethyl tertiary-butyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.1	25	
Hexachlorobutadiene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	1	25	
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Methyl tert-Butyl Ether	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	11	25	
Methylene Chloride	0.0572	0.0250	mg/kg wet	0.05000		114	70-130	6	25	
Naphthalene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
n-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
n-Propylbenzene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	11	25	
sec-Butylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
tert-Butylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Tertiary-amyl methyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	





*CERTIFICATE OF ANALYSIS*

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ESS Laboratory Work Order: 1510739

**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 CJ52924 - 5035**

Tetrahydrofuran	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	19	25	
Toluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	6	25	
trans-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
trans-1,3-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	10	25	
Trichloroethene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Vinyl Acetate	0.0794	0.0050	mg/kg wet	0.05000		159	70-130	12	25	B+
Vinyl Chloride	0.0419	0.0100	mg/kg wet	0.05000		84	70-130	7	25	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.8	25	
Xylene P,M	0.0887	0.0100	mg/kg wet	0.1000		89	70-130	2	25	
Xylenes (Total)	0.134	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0506		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0515		mg/kg wet	0.05000		103	70-130			

8100M Total Petroleum Hydrocarbons

**Batch CJ52723 - 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

4.66 mg/kg wet 5.000 93 40-140

**LCS**

Decane (C10)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		82	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		107	40-140			



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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 CJ52723 - 3546**

Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		113	40-140			
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Tetradecane (C14)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Total Petroleum Hydrocarbons	42.0	37.5	mg/kg wet	35.00		120	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		101	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.91</i>		mg/kg wet	<i>5.000</i>		<i>98</i>	<i>40-140</i>			
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**LCS Dup**

Decane (C10)	2.3	0.2	mg/kg wet	2.500		91	40-140	4	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		111	40-140	4	25	
Dodecane (C12)	2.6	0.2	mg/kg wet	2.500		104	40-140	2	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		110	40-140	4	25	
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		113	40-140	3	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		78	30-140	4	25	
Octacosane (C28)	2.6	0.2	mg/kg wet	2.500		102	40-140	5	25	
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		103	40-140	4	25	
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		109	40-140	2	25	
Total Petroleum Hydrocarbons	40.2	37.5	mg/kg wet	35.00		115	40-140	4	25	
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140	5	25	

<i>Surrogate: O-Terphenyl</i>	<i>4.63</i>		mg/kg wet	<i>5.000</i>		<i>93</i>	<i>40-140</i>			
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**8270D Semi-Volatile Organic Compounds**

**Batch CJ52820 - 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							



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52820 - 3546**

2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							



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ESS Laboratory Work Order: 1510739

**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 CJ52820 - 3546**

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	2.59		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Chlorophenol-d4	3.92		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.60		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	3.93		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	3.17		mg/kg wet	3.333		95	30-130			

**LCS**

1,1-Biphenyl	2.29	0.333	mg/kg wet	3.333		69	40-140			
1,2,4-Trichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.17	1.67	mg/kg wet	3.333		65	30-130			
2,4,5-Trichlorophenol	2.65	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.43	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dinitrophenol	2.18	1.67	mg/kg wet	3.333		65	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.62	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.11	0.333	mg/kg wet	3.333		63	40-140			
2-Chlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Methylnaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Methylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2-Nitroaniline	2.03	0.333	mg/kg wet	3.333		61	40-140			
2-Nitrophenol	2.40	0.333	mg/kg wet	3.333		72	30-130			
3,3'-Dichlorobenzidine	2.45	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.94	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			
4,6-Dinitro-2-Methylphenol	3.24	1.67	mg/kg wet	3.333		97	30-130			
4-Bromophenyl-phenylether	2.58	0.333	mg/kg wet	3.333		77	40-140			
4-Chloro-3-Methylphenol	2.44	0.333	mg/kg wet	3.333		73	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
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ESS Laboratory Work Order: 1510739

**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 CJ52820 - 3546**

4-Chloroaniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
4-Chloro-phenyl-phenyl ether	2.53	0.333	mg/kg wet	3.333		76	40-140			
4-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
4-Nitrophenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
Acenaphthene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acenaphthylene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acetophenone	2.16	0.667	mg/kg wet	3.333		65	40-140			
Aniline	1.64	0.667	mg/kg wet	3.333		49	40-140			
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)anthracene	3.15	0.333	mg/kg wet	3.333		94	40-140			
Benzo(a)pyrene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		92	40-140			
Benzo(g,h,i)perylene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	2.43	0.333	mg/kg wet	3.333		73	40-140			
Benzoic Acid	2.04	1.67	mg/kg wet	3.333		61	40-140			
Benzyl Alcohol	1.74	0.333	mg/kg wet	3.333		52	40-140			
bis(2-Chloroethoxy)methane	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	1.99	0.333	mg/kg wet	3.333		60	40-140			
bis(2-chloroisopropyl)Ether	2.22	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Carbazole	2.99	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	3.06	0.167	mg/kg wet	3.333		92	40-140			
Dibenzo(a,h)Anthracene	3.34	0.167	mg/kg wet	3.333		100	40-140			
Dibenzofuran	2.36	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140			
Dimethylphthalate	2.65	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.40	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140			
Hexachlorobutadiene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Hexachlorocyclopentadiene	1.85	1.67	mg/kg wet	3.333		56	40-140			
Hexachloroethane	2.21	0.333	mg/kg wet	3.333		66	40-140			
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Isophorone	2.36	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140			
Nitrobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140			
N-Nitrosodimethylamine	2.15	0.333	mg/kg wet	3.333		64	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		84	40-140			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52820 - 3546**

Phenol	2.19	0.333	mg/kg wet	3.333		66	30-130			
Pyrene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Pyridine	1.67	1.67	mg/kg wet	3.333		50	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.42		mg/kg wet	3.333		73	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.56		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: Nitrobenzene-d5	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: p-Terphenyl-d14	3.31		mg/kg wet	3.333		99	30-130			

**LCS Dup**

1,1-Biphenyl	2.50	0.333	mg/kg wet	3.333		75	40-140	9	30	
1,2,4-Trichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140	8	30	
1,2-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,3-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	11	30	
2,3,4,6-Tetrachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	9	30	
2,4,5-Trichlorophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	8	30	
2,4,6-Trichlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130	11	30	
2,4-Dichlorophenol	2.78	0.333	mg/kg wet	3.333		83	30-130	14	30	
2,4-Dimethylphenol	2.72	0.333	mg/kg wet	3.333		82	30-130	13	30	
2,4-Dinitrophenol	2.54	1.67	mg/kg wet	3.333		76	30-130	15	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	11	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	9	30	
2-Chlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	12	30	
2-Methylnaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140	14	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	15	30	
2-Nitroaniline	2.25	0.333	mg/kg wet	3.333		68	40-140	10	30	
2-Nitrophenol	2.75	0.333	mg/kg wet	3.333		83	30-130	14	30	
3,3'-Dichlorobenzidine	2.63	0.667	mg/kg wet	3.333		79	40-140	7	30	
3+4-Methylphenol	5.69	0.667	mg/kg wet	6.667		85	30-130	14	30	
3-Nitroaniline	2.74	0.333	mg/kg wet	3.333		82	40-140	10	30	
4,6-Dinitro-2-Methylphenol	3.65	1.67	mg/kg wet	3.333		109	30-130	12	30	
4-Bromophenyl-phenylether	2.72	0.333	mg/kg wet	3.333		82	40-140	5	30	
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130	16	30	
4-Chloroaniline	2.33	0.667	mg/kg wet	3.333		70	40-140	22	30	
4-Chloro-phenyl-phenyl ether	2.73	0.333	mg/kg wet	3.333		82	40-140	8	30	
4-Nitroaniline	3.13	0.333	mg/kg wet	3.333		94	40-140	10	30	
4-Nitrophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	12	30	
Acenaphthene	2.68	0.333	mg/kg wet	3.333		80	40-140	9	30	
Acenaphthylene	2.69	0.333	mg/kg wet	3.333		81	40-140	10	30	
Acetophenone	2.50	0.667	mg/kg wet	3.333		75	40-140	15	30	
Aniline	1.93	0.667	mg/kg wet	3.333		58	40-140	16	30	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52820 - 3546**

Anthracene	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Azobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Benzo(a)anthracene	3.29	0.333	mg/kg wet	3.333		99	40-140	4	30	
Benzo(a)pyrene	3.02	0.167	mg/kg wet	3.333		90	40-140	3	30	
Benzo(b)fluoranthene	3.24	0.333	mg/kg wet	3.333		97	40-140	6	30	
Benzo(g,h,i)perylene	2.97	0.333	mg/kg wet	3.333		89	40-140	5	30	
Benzo(k)fluoranthene	2.66	0.333	mg/kg wet	3.333		80	40-140	9	30	
Benzoic Acid	2.43	1.67	mg/kg wet	3.333		73	40-140	18	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	27	30	
bis(2-Chloroethoxy)methane	2.58	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Chloroethyl)ether	2.31	0.333	mg/kg wet	3.333		69	40-140	15	30	
bis(2-chloroisopropyl)Ether	2.50	0.333	mg/kg wet	3.333		75	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.40	0.333	mg/kg wet	3.333		102	40-140	4	30	
Butylbenzylphthalate	3.22	0.333	mg/kg wet	3.333		97	40-140	6	30	
Carbazole	3.17	0.333	mg/kg wet	3.333		95	40-140	6	30	
Chrysene	3.22	0.167	mg/kg wet	3.333		96	40-140	5	30	
Dibenzo(a,h)Anthracene	3.55	0.167	mg/kg wet	3.333		106	40-140	6	30	
Dibenzofuran	2.60	0.333	mg/kg wet	3.333		78	40-140	10	30	
Diethylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140	8	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	8	30	
Di-n-butylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	6	30	
Di-n-octylphthalate	3.65	0.333	mg/kg wet	3.333		110	40-140	7	30	
Fluoranthene	3.23	0.333	mg/kg wet	3.333		97	40-140	7	30	
Fluorene	2.92	0.333	mg/kg wet	3.333		88	40-140	9	30	
Hexachlorobenzene	2.56	0.167	mg/kg wet	3.333		77	40-140	3	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	9	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	10	30	
Hexachloroethane	2.41	0.333	mg/kg wet	3.333		72	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140	12	30	
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
Nitrobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	10	30	
N-Nitrosodimethylamine	2.36	0.333	mg/kg wet	3.333		71	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.90	0.333	mg/kg wet	3.333		87	40-140	4	30	
Pentachlorophenol	2.35	1.67	mg/kg wet	3.333		71	30-130	12	30	
Phenanthrene	2.92	0.333	mg/kg wet	3.333		88	40-140	5	30	
Phenol	2.85	0.333	mg/kg wet	3.333		86	30-130	26	30	
Pyrene	3.31	0.333	mg/kg wet	3.333		99	40-140	6	30	
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.87		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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 CJ52820 - 3546**

<i>Surrogate: Phenol-d6</i>	3.91		mg/kg wet	5.000		78	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	3.38		mg/kg wet	3.333		101	30-130			





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.5 °C.
- U Analyte included in the analysis, but not detected
- S- Surrogate recovery(ies) below lower control limit (S-).
- Q Calibration required quadratic regression (Q).
- I Internal Standard(s) outside of criteria (I).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- B- Blank Spike recovery is below lower control limit (B-).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510739

**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](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](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](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: 15100739  
 Date Project Due: 11/2/15  
 Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present?

\* No

10. Are the samples properly preserved?

Yes

Air No.:

11. Proper sample containers used?

Yes

2. Were Custody Seals Present?

No

12. Any air bubbles in the VOA vials?

N/A

3. Were Custody Seals Intact?

N/A

13. Holding times exceeded?

No

4. Is Radiation count < 100 CPM?

Yes

14. Sufficient sample volumes?

Yes

5. Is a cooler present?

Yes

15. Any Subcontracting needed?

No

Cooler Temp: 5.3

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 @ 1750 JL 10/26/15

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: 10/26/15 16:53

Reviewed By: [Signature]

Date/Time: 10/26/15 17:08

# ESS Laboratory

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

## CHAIN OF CUSTODY

Turn Time: 5 Days  
 Regulatory State: Rhode Island  
 Is this project for any of the following?  
 OCT RCP  MA MCP  RGP  DOD  
 Project # 74-15-0002.134 Project Name Textron Providence  
 Address 500 Harrison Avenue, Suite 4R PO #  
 City Boston State MA Zip Code 02118 Email Address pleofanti@charter.us

ESS Lab # 151039 RI DEM RDEC  
 Reporting Limits  
 Electronic Deliverables  Data Checker  Excel  
 Other (Please Specify →)

ESS Lab ID	Collection Date	Collection Time	FAX Number	Sample Type	Sample Matrix	Material S&S	Loam	B	VOC	VOC Low Level	SVOC	RCRA 8	TPH	Analysis																							
1	10/26/15	1400	(857) 246-6812	Grab	Soil				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Na2S2O3, 8-ZnAc, NaOH, 9-NH4Cl, 10-Other																																					

Laboratory Use Only  
 Sampled by: G. Gilbert-Thielsch  
 Comments: Please specify "Other" preservative and containers types in this space  
 Please CC: mpolsky@thielsch.com  
 Cooler Present: YES Drop Off  
 Seals Intact: NO Pickup  
 Cooler Temperature: 5.35°C Technician Hours →  
 Relinquished by (Signature, Date & Time) [Signature] 10/26/15 1440  
 Relinquished by (Signature, Date & Time) [Signature] 10/26/15 1445  
 Received by (Signature, Date & Time) [Signature]  
 Relinquished by (Signature, Date & Time) [Signature]



*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: 1510741**

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, Nov 02, 2015*

**Analytical Summary**

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

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



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510741

**SAMPLE RECEIPT**

The following samples were received on October 26, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on October 26, 2015 at 17:50.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1510741-01	Material S and S Loam 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: 1510741

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

CJ52924-BS1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (178% @ 70-130%)

CJ52924-BSD1 **Blank Spike recovery is above upper control limit (B+).**

Vinyl Acetate (159% @ 70-130%)

CYJ0402-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

1,2,3-Trichloropropane (36% @ 30%), 1,4-Dioxane (33% @ 30%), Acetone (32% @ 30%), Vinyl Acetate (118% @ 30%)

**8270D Semi-Volatile Organic Compounds**

CYJ0398-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (116% @ 80-120%)

CYJ0416-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (90% @ 80-120%), Benzoic Acid (83% @ 80-120%)

CYJ0416-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

Di-n-octylphthalate (27% @ 20%)

CYJ0416-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

Pentachlorophenol (29% @ 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: 1510741

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

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

**Prep Methods**

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

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





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
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	5.88 (2.56)		6010C		1	KJK	10/30/15 0:18	2.09	100	CJ52747
Barium	32.2 (2.56)		6010C		1	KJK	10/30/15 0:18	2.09	100	CJ52747
Cadmium	ND (0.51)		6010C		1	KJK	10/30/15 0:18	2.09	100	CJ52747
Chromium	6.19 (1.02)		6010C		1	KJK	10/30/15 0:18	2.09	100	CJ52747
Lead	23.5 (5.11)		6010C		1	KJK	10/30/15 0:18	2.09	100	CJ52747
Mercury	0.041 (0.032)		7471B		1	PJP	10/28/15 13:41	0.66	40	CJ52751
Selenium	ND (25.6)		6010C		5	KJK	10/30/15 18:11	2.09	100	CJ52747
Silver	ND (0.51)		6010C		1	KJK	10/30/15 0:18	2.09	100	CJ52747



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94  
Initial Volume: 5.6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
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	10/29/15 14:55	CYJ0402	CJ52924
1,1,1-Trichloroethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,1,2,2-Tetrachloroethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,1,2-Trichloroethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,1-Dichloroethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,1-Dichloroethene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,1-Dichloropropene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2,3-Trichlorobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2,3-Trichloropropane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2,4-Trichlorobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2,4-Trimethylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2-Dibromo-3-Chloropropane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2-Dibromoethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2-Dichloroethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,2-Dichloropropane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,3,5-Trimethylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,3-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,3-Dichloropropane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,4-Dichlorobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1,4-Dioxane	ND (0.0954)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
1-Chlorohexane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
2,2-Dichloropropane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
2-Butanone	ND (0.0477)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
2-Chlorotoluene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
2-Hexanone	ND (0.0477)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
4-Chlorotoluene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
4-Isopropyltoluene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
4-Methyl-2-Pentanone	ND (0.0477)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Acetone	ND (0.0477)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Benzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Bromobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94  
Initial Volume: 5.6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
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	10/29/15 14:55	CYJ0402	CJ52924
Bromodichloromethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Bromoform	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Bromomethane	ND (0.0095)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Carbon Disulfide	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Carbon Tetrachloride	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Chlorobenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Chloroethane	ND (0.0095)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Chloroform	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Chloromethane	ND (0.0095)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
cis-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
cis-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Dibromochloromethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Dibromomethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Dichlorodifluoromethane	ND (0.0095)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Diethyl Ether	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Di-isopropyl ether	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Ethyl tertiary-butyl ether	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Ethylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Hexachlorobutadiene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Isopropylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Methyl tert-Butyl Ether	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Methylene Chloride	ND (0.0238)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Naphthalene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
n-Butylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
n-Propylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
sec-Butylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Styrene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
tert-Butylbenzene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Tertiary-amyl methyl ether	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Tetrachloroethene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Tetrahydrofuran	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94  
Initial Volume: 5.6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
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	10/29/15 14:55	CYJ0402	CJ52924
trans-1,2-Dichloroethene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
trans-1,3-Dichloropropene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Trichloroethene	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Trichlorofluoromethane	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Vinyl Acetate	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Vinyl Chloride	ND (0.0095)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Xylene O	ND (0.0048)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Xylene P,M	ND (0.0095)		8260B Low		1	10/29/15 14:55	CYJ0402	CJ52924
Xylenes (Total)	ND (0.0095)		8260B Low		1	10/29/15 14:55		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>122 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>109 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94  
Initial Volume: 20.8  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 10/27/15 12:35

**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	141 (38.5)		8100M		1	10/28/15 14:52	CYJ0361	CJ52723
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		93 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94  
Initial Volume: 14  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
1,2,4-Trichlorobenzene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
1,2-Dichlorobenzene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
1,3-Dichlorobenzene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
1,4-Dichlorobenzene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,3,4,6-Tetrachlorophenol	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,4,5-Trichlorophenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,4,6-Trichlorophenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,4-Dichlorophenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,4-Dimethylphenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,4-Dinitrophenol	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,4-Dinitrotoluene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2,6-Dinitrotoluene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2-Chloronaphthalene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2-Chlorophenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2-Methylnaphthalene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2-Methylphenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2-Nitroaniline	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
2-Nitrophenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
3,3'-Dichlorobenzidine	ND (0.763)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
3+4-Methylphenol	ND (0.763)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
3-Nitroaniline	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4,6-Dinitro-2-Methylphenol	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4-Bromophenyl-phenylether	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4-Chloro-3-Methylphenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4-Chloroaniline	ND (0.763)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4-Chloro-phenyl-phenyl ether	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4-Nitroaniline	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
4-Nitrophenol	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Acenaphthene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Acenaphthylene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Acetophenone	ND (0.763)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94  
Initial Volume: 14  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: VSC  
Prepared: 10/28/15 14:06

**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 (0.763)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Anthracene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Azobenzene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzo(a)anthracene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzo(a)pyrene	ND (0.191)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzo(b)fluoranthene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzo(g,h,i)perylene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzo(k)fluoranthene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzoic Acid	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Benzyl Alcohol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
bis(2-Chloroethoxy)methane	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
bis(2-Chloroethyl)ether	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
bis(2-chloroisopropyl)Ether	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
bis(2-Ethylhexyl)phthalate	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Butylbenzylphthalate	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Carbazole	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Chrysene	ND (0.191)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Dibenzo(a,h)Anthracene	ND (0.191)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Dibenzofuran	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Diethylphthalate	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Dimethylphthalate	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Di-n-butylphthalate	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Di-n-octylphthalate	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Fluoranthene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Fluorene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Hexachlorobenzene	ND (0.191)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Hexachlorobutadiene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Hexachlorocyclopentadiene	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Hexachloroethane	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Indeno(1,2,3-cd)Pyrene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Isophorone	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Naphthalene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
 Client Project ID: Textron Providence  
 Client Sample ID: Material S and S Loam D  
 Date Sampled: 10/26/15 14:20  
 Percent Solids: 94  
 Initial Volume: 14  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1510741  
 ESS Laboratory Sample ID: 1510741-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: VSC  
 Prepared: 10/28/15 14:06

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
N-Nitrosodimethylamine	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
N-Nitroso-Di-n-Propylamine	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
N-nitrosodiphenylamine	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Pentachlorophenol	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Phenanthrene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Phenol	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Pyrene	ND (0.381)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820
Pyridine	ND (1.91)		8270D		1	10/29/15 0:58	CYJ0398	CJ52820

	<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>	71 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	54 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	60 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	51 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	55 %		30-130
<i>Surrogate: Phenol-d6</i>	57 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	81 %		30-130





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Environmental, Inc.  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam D  
Date Sampled: 10/26/15 14:20  
Percent Solids: 94

ESS Laboratory Work Order: 1510741  
ESS Laboratory Sample ID: 1510741-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	5.19 (N/A)		9045		1	JLK	10/26/15 19:25	S.U.	CJ52639
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.5 °C.								



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510741

**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 CJ52747 - 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	40.2	9.43	mg/kg wet	52.30	77	43-169
Barium	121	9.43	mg/kg wet	145.0	84	80-120
Cadmium	48.1	1.89	mg/kg wet	71.60	67	62-138
Chromium	71.5	3.77	mg/kg wet	88.50	81	80-120
Selenium	60.0	18.9	mg/kg wet	81.10	74	64-137
Silver	93.8	1.89	mg/kg wet	114.0	82	80-120

**LCS**

Lead	107	18.5	mg/kg wet	133.0	81	80-120
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**LCS Dup**

Arsenic	42.6	9.80	mg/kg wet	52.30	81	43-169	6	20
Barium	134	9.80	mg/kg wet	145.0	92	80-120	10	20
Cadmium	49.4	1.96	mg/kg wet	71.60	69	62-138	3	20
Chromium	72.6	3.92	mg/kg wet	88.50	82	80-120	1	20
Selenium	53.4	19.6	mg/kg wet	81.10	66	64-137	12	20
Silver	101	1.96	mg/kg wet	114.0	89	80-120	7	20

**LCS Dup**

Lead	116	19.6	mg/kg wet	133.0	87	80-120	8	20
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**Batch CJ52751 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	9.90	1.71	mg/kg wet	9.700	102	80-120
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**LCS Dup**

Mercury	9.62	1.98	mg/kg wet	9.700	99	80-120	3	20
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**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CJ52924 - 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: 1510741

**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 CJ52924 - 5035**

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



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ESS Laboratory Work Order: 1510741

**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 CJ52924 - 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	0.0585		mg/kg wet	0.05000		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0502		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0529		mg/kg wet	0.05000		106	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2-Trichloroethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			
1,1-Dichloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,1-Dichloroethene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1-Dichloropropene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2,3-Trichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
1,2,4-Trichlorobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trimethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0579	0.0050	mg/kg wet	0.05000		116	70-130			
1,2-Dibromoethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,2-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			



*CERTIFICATE OF ANALYSIS*

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Client Project ID: Textron Providence

ESS Laboratory Work Order: 1510741

**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 CJ52924 - 5035**

1,3-Dichlorobenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichloropropane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,4-Dichlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
1,4-Dioxane	1.18	0.100	mg/kg wet	1.000		118	70-130			
1-Chlorohexane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
2,2-Dichloropropane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130			
2-Butanone	0.271	0.0500	mg/kg wet	0.2500		108	70-130			
2-Chlorotoluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
2-Hexanone	0.289	0.0500	mg/kg wet	0.2500		116	70-130			
4-Chlorotoluene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
4-Methyl-2-Pentanone	0.300	0.0500	mg/kg wet	0.2500		120	70-130			
Acetone	0.319	0.0500	mg/kg wet	0.2500		128	70-130			
Benzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
Bromobenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Bromoform	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Bromomethane	0.0478	0.0100	mg/kg wet	0.05000		96	70-130			
Carbon Disulfide	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Carbon Tetrachloride	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Chloroethane	0.0474	0.0100	mg/kg wet	0.05000		95	70-130			
Chloroform	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Chloromethane	0.0535	0.0100	mg/kg wet	0.05000		107	70-130			
cis-1,2-Dichloroethene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
cis-1,3-Dichloropropene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
Dibromochloromethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
Dibromomethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Dichlorodifluoromethane	0.0494	0.0100	mg/kg wet	0.05000		99	70-130			
Diethyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Ethyl tertiary-butyl ether	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Hexachlorobutadiene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Isopropylbenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Methyl tert-Butyl Ether	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Methylene Chloride	0.0610	0.0250	mg/kg wet	0.05000		122	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
n-Propylbenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
sec-Butylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
Styrene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
tert-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0559	0.0050	mg/kg wet	0.05000		112	70-130			



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1510741

**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 CJ52924 - 5035**

Tetrachloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Tetrahydrofuran	0.0585	0.0050	mg/kg wet	0.05000		117	70-130			
Toluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,3-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Trichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
Vinyl Acetate	0.0891	0.0050	mg/kg wet	0.05000		178	70-130			B+
Vinyl Chloride	0.0449	0.0100	mg/kg wet	0.05000		90	70-130			
Xylene O	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Xylene P,M	0.0901	0.0100	mg/kg wet	0.1000		90	70-130			
Xylenes (Total)	0.135	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0508</i>		mg/kg wet	<i>0.05000</i>		<i>102</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0482</i>		mg/kg wet	<i>0.05000</i>		<i>96</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0493</i>		mg/kg wet	<i>0.05000</i>		<i>99</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0478</i>		mg/kg wet	<i>0.05000</i>		<i>96</i>	<i>70-130</i>			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
1,1,1-Trichloroethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	12	25	
1,1,2-Trichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	11	25	
1,1-Dichloroethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	6	25	
1,1-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
1,1-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	6	25	
1,2,3-Trichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.8	25	
1,2,3-Trichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	14	25	
1,2,4-Trichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,4-Trimethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	14	25	
1,2-Dibromoethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	0.6	25	
1,2-Dichlorobenzene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
1,2-Dichloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	9	25	
1,2-Dichloropropane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,3,5-Trimethylbenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	15	25	
1,3-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	5	25	
1,3-Dichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	0.3	25	
1,4-Dichlorobenzene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
1,4-Dioxane	1.01	0.100	mg/kg wet	1.000		101	70-130	15	20	
1-Chlorohexane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
2,2-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	5	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		94	70-130	15	25	
2-Chlorotoluene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
2-Hexanone	0.266	0.0500	mg/kg wet	0.2500		106	70-130	8	25	
4-Chlorotoluene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
4-Isopropyltoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	0.09	25	



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**Quality Control Data**

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

**Batch CJ52924 - 5035**

4-Methyl-2-Pentanone	0.247	0.0500	mg/kg wet	0.2500		99	70-130	19	25	
Acetone	0.261	0.0500	mg/kg wet	0.2500		104	70-130	20	25	
Benzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Bromobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Bromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	9	25	
Bromodichloromethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
Bromoform	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
Bromomethane	0.0454	0.0100	mg/kg wet	0.05000		91	70-130	5	25	
Carbon Disulfide	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	6	25	
Carbon Tetrachloride	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
Chlorobenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Chloroethane	0.0421	0.0100	mg/kg wet	0.05000		84	70-130	12	25	
Chloroform	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
Chloromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130	7	25	
cis-1,2-Dichloroethene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
cis-1,3-Dichloropropene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Dibromochloromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	4	25	
Dibromomethane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	10	25	
Dichlorodifluoromethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130	2	25	
Diethyl Ether	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
Di-isopropyl ether	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
Ethyl tertiary-butyl ether	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Ethylbenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	0.1	25	
Hexachlorobutadiene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	1	25	
Isopropylbenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Methyl tert-Butyl Ether	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	11	25	
Methylene Chloride	0.0572	0.0250	mg/kg wet	0.05000		114	70-130	6	25	
Naphthalene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
n-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
n-Propylbenzene	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	11	25	
sec-Butylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	5	25	
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
tert-Butylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Tertiary-amyl methyl ether	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
Tetrachloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Tetrahydrofuran	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	19	25	
Toluene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	6	25	
trans-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
trans-1,3-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	10	25	
Trichloroethene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Trichlorofluoromethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Vinyl Acetate	0.0794	0.0050	mg/kg wet	0.05000		159	70-130	12	25	B+
Vinyl Chloride	0.0419	0.0100	mg/kg wet	0.05000		84	70-130	7	25	
Xylene O	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.8	25	
Xylene P,M	0.0887	0.0100	mg/kg wet	0.1000		89	70-130	2	25	



*CERTIFICATE OF ANALYSIS*

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**Quality Control Data**

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

**Batch CJ52924 - [CALC]**

Xylenes (Total)	0.134	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0506		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: Toluene-d8	0.0515		mg/kg wet	0.05000		103	70-130			

8100M Total Petroleum Hydrocarbons

**Batch CJ52723 - 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	4.66		mg/kg wet	5.000		93	40-140			
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**LCS**

Decane (C10)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500		115	40-140			
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		117	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		82	30-140			
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		113	40-140			
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		108	40-140			
Tetradecane (C14)	2.8	0.2	mg/kg wet	2.500		111	40-140			
Total Petroleum Hydrocarbons	42.0	37.5	mg/kg wet	35.00		120	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		101	40-140			

Surrogate: O-Terphenyl	4.91		mg/kg wet	5.000		98	40-140			
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**LCS Dup**

Decane (C10)	2.3	0.2	mg/kg wet	2.500		91	40-140	4	25	
Docosane (C22)	2.8	0.2	mg/kg wet	2.500		111	40-140	4	25	





*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510741

**Quality Control Data**

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**8100M Total Petroleum Hydrocarbons**

**Batch CJ52723 - 3546**

Dodecane (C12)	2.6	0.2	mg/kg wet	2.500		104	40-140	2	25	
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		111	40-140	3	25	
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		110	40-140	4	25	
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Nonadecane (C19)	2.8	0.2	mg/kg wet	2.500		113	40-140	3	25	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		78	30-140	4	25	
Octacosane (C28)	2.6	0.2	mg/kg wet	2.500		102	40-140	5	25	
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		111	40-140	2	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		103	40-140	4	25	
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		109	40-140	2	25	
Total Petroleum Hydrocarbons	40.2	37.5	mg/kg wet	35.00		115	40-140	4	25	
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140	5	25	

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

**8270D Semi-Volatile Organic Compounds**

**Batch CJ52820 - 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 CJ52820 - 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 CJ52820 - 3546**

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.59		mg/kg wet	3.333		78	30-130			
Surrogate: 2,4,6-Tribromophenol	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Chlorophenol-d4	3.92		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.60		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	3.93		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	3.17		mg/kg wet	3.333		95	30-130			

**LCS**

1,1-Biphenyl	2.29	0.333	mg/kg wet	3.333		69	40-140			
1,2,4-Trichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
1,2-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,3-Dichlorobenzene	2.20	0.333	mg/kg wet	3.333		66	40-140			
1,4-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140			
2,3,4,6-Tetrachlorophenol	2.17	1.67	mg/kg wet	3.333		65	30-130			
2,4,5-Trichlorophenol	2.65	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.43	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4-Dimethylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
2,4-Dinitrophenol	2.18	1.67	mg/kg wet	3.333		65	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.62	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.11	0.333	mg/kg wet	3.333		63	40-140			
2-Chlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
2-Methylnaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
2-Methylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2-Nitroaniline	2.03	0.333	mg/kg wet	3.333		61	40-140			
2-Nitrophenol	2.40	0.333	mg/kg wet	3.333		72	30-130			
3,3'-Dichlorobenzidine	2.45	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.94	0.667	mg/kg wet	6.667		74	30-130			
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140			
4,6-Dinitro-2-Methylphenol	3.24	1.67	mg/kg wet	3.333		97	30-130			
4-Bromophenyl-phenylether	2.58	0.333	mg/kg wet	3.333		77	40-140			
4-Chloro-3-Methylphenol	2.44	0.333	mg/kg wet	3.333		73	30-130			
4-Chloroaniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
4-Chloro-phenyl-phenyl ether	2.53	0.333	mg/kg wet	3.333		76	40-140			
4-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
4-Nitrophenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
Acenaphthene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acenaphthylene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Acetophenone	2.16	0.667	mg/kg wet	3.333		65	40-140			
Aniline	1.64	0.667	mg/kg wet	3.333		49	40-140			
Anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			



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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 CJ52820 - 3546**

Benzo(a)anthracene	3.15	0.333	mg/kg wet	3.333		94	40-140			
Benzo(a)pyrene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	3.05	0.333	mg/kg wet	3.333		92	40-140			
Benzo(g,h,i)perylene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Benzo(k)fluoranthene	2.43	0.333	mg/kg wet	3.333		73	40-140			
Benzoic Acid	2.04	1.67	mg/kg wet	3.333		61	40-140			
Benzyl Alcohol	1.74	0.333	mg/kg wet	3.333		52	40-140			
bis(2-Chloroethoxy)methane	2.26	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethyl)ether	1.99	0.333	mg/kg wet	3.333		60	40-140			
bis(2-chloroisopropyl)Ether	2.22	0.333	mg/kg wet	3.333		67	40-140			
bis(2-Ethylhexyl)phthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Butylbenzylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Carbazole	2.99	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	3.06	0.167	mg/kg wet	3.333		92	40-140			
Dibenzo(a,h)Anthracene	3.34	0.167	mg/kg wet	3.333		100	40-140			
Dibenzofuran	2.36	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140			
Dimethylphthalate	2.65	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-octylphthalate	3.40	0.333	mg/kg wet	3.333		102	40-140			
Fluoranthene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140			
Hexachlorobutadiene	2.23	0.333	mg/kg wet	3.333		67	40-140			
Hexachlorocyclopentadiene	1.85	1.67	mg/kg wet	3.333		56	40-140			
Hexachloroethane	2.21	0.333	mg/kg wet	3.333		66	40-140			
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Isophorone	2.36	0.333	mg/kg wet	3.333		71	40-140			
Naphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140			
Nitrobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140			
N-Nitrosodimethylamine	2.15	0.333	mg/kg wet	3.333		64	40-140			
N-Nitroso-Di-n-Propylamine	2.30	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.78	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		84	40-140			
Phenol	2.19	0.333	mg/kg wet	3.333		66	30-130			
Pyrene	3.12	0.333	mg/kg wet	3.333		94	40-140			
Pyridine	1.67	1.67	mg/kg wet	3.333		50	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.42		mg/kg wet	3.333		73	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	3.56		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: Nitrobenzene-d5	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: Phenol-d6	3.52		mg/kg wet	5.000		70	30-130			
Surrogate: p-Terphenyl-d14	3.31		mg/kg wet	3.333		99	30-130			



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8270D Semi-Volatile Organic Compounds

Batch CJ52820 - 3546

LCS Dup										
1,1-Biphenyl	2.50	0.333	mg/kg wet	3.333		75	40-140	9	30	
1,2,4-Trichlorobenzene	2.52	0.333	mg/kg wet	3.333		75	40-140	8	30	
1,2-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,3-Dichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	11	30	
1,4-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	11	30	
2,3,4,6-Tetrachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	9	30	
2,4,5-Trichlorophenol	2.86	0.333	mg/kg wet	3.333		86	30-130	8	30	
2,4,6-Trichlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130	11	30	
2,4-Dichlorophenol	2.78	0.333	mg/kg wet	3.333		83	30-130	14	30	
2,4-Dimethylphenol	2.72	0.333	mg/kg wet	3.333		82	30-130	13	30	
2,4-Dinitrophenol	2.54	1.67	mg/kg wet	3.333		76	30-130	15	30	
2,4-Dinitrotoluene	3.25	0.333	mg/kg wet	3.333		98	40-140	11	30	
2,6-Dinitrotoluene	2.81	0.333	mg/kg wet	3.333		84	40-140	7	30	
2-Chloronaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	9	30	
2-Chlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	12	30	
2-Methylnaphthalene	2.48	0.333	mg/kg wet	3.333		74	40-140	14	30	
2-Methylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	15	30	
2-Nitroaniline	2.25	0.333	mg/kg wet	3.333		68	40-140	10	30	
2-Nitrophenol	2.75	0.333	mg/kg wet	3.333		83	30-130	14	30	
3,3'-Dichlorobenzidine	2.63	0.667	mg/kg wet	3.333		79	40-140	7	30	
3+4-Methylphenol	5.69	0.667	mg/kg wet	6.667		85	30-130	14	30	
3-Nitroaniline	2.74	0.333	mg/kg wet	3.333		82	40-140	10	30	
4,6-Dinitro-2-Methylphenol	3.65	1.67	mg/kg wet	3.333		109	30-130	12	30	
4-Bromophenyl-phenylether	2.72	0.333	mg/kg wet	3.333		82	40-140	5	30	
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130	16	30	
4-Chloroaniline	2.33	0.667	mg/kg wet	3.333		70	40-140	22	30	
4-Chloro-phenyl-phenyl ether	2.73	0.333	mg/kg wet	3.333		82	40-140	8	30	
4-Nitroaniline	3.13	0.333	mg/kg wet	3.333		94	40-140	10	30	
4-Nitrophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	12	30	
Acenaphthene	2.68	0.333	mg/kg wet	3.333		80	40-140	9	30	
Acenaphthylene	2.69	0.333	mg/kg wet	3.333		81	40-140	10	30	
Acetophenone	2.50	0.667	mg/kg wet	3.333		75	40-140	15	30	
Aniline	1.93	0.667	mg/kg wet	3.333		58	40-140	16	30	
Anthracene	3.12	0.333	mg/kg wet	3.333		94	40-140	5	30	
Azobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140	3	30	
Benzo(a)anthracene	3.29	0.333	mg/kg wet	3.333		99	40-140	4	30	
Benzo(a)pyrene	3.02	0.167	mg/kg wet	3.333		90	40-140	3	30	
Benzo(b)fluoranthene	3.24	0.333	mg/kg wet	3.333		97	40-140	6	30	
Benzo(g,h,i)perylene	2.97	0.333	mg/kg wet	3.333		89	40-140	5	30	
Benzo(k)fluoranthene	2.66	0.333	mg/kg wet	3.333		80	40-140	9	30	
Benzoic Acid	2.43	1.67	mg/kg wet	3.333		73	40-140	18	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	27	30	
bis(2-Chloroethoxy)methane	2.58	0.333	mg/kg wet	3.333		77	40-140	13	30	
bis(2-Chloroethyl)ether	2.31	0.333	mg/kg wet	3.333		69	40-140	15	30	



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510741

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
<b>8270D Semi-Volatile Organic Compounds</b>										
<b>Batch CJ52820 - 3546</b>										
bis(2-chloroisopropyl)Ether	2.50	0.333	mg/kg wet	3.333		75	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.40	0.333	mg/kg wet	3.333		102	40-140	4	30	
Butylbenzylphthalate	3.22	0.333	mg/kg wet	3.333		97	40-140	6	30	
Carbazole	3.17	0.333	mg/kg wet	3.333		95	40-140	6	30	
Chrysene	3.22	0.167	mg/kg wet	3.333		96	40-140	5	30	
Dibenzo(a,h)Anthracene	3.55	0.167	mg/kg wet	3.333		106	40-140	6	30	
Dibenzofuran	2.60	0.333	mg/kg wet	3.333		78	40-140	10	30	
Diethylphthalate	3.14	0.333	mg/kg wet	3.333		94	40-140	8	30	
Dimethylphthalate	2.86	0.333	mg/kg wet	3.333		86	40-140	8	30	
Di-n-butylphthalate	3.02	0.333	mg/kg wet	3.333		90	40-140	6	30	
Di-n-octylphthalate	3.65	0.333	mg/kg wet	3.333		110	40-140	7	30	
Fluoranthene	3.23	0.333	mg/kg wet	3.333		97	40-140	7	30	
Fluorene	2.92	0.333	mg/kg wet	3.333		88	40-140	9	30	
Hexachlorobenzene	2.56	0.167	mg/kg wet	3.333		77	40-140	3	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	9	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	10	30	
Hexachloroethane	2.41	0.333	mg/kg wet	3.333		72	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Isophorone	2.67	0.333	mg/kg wet	3.333		80	40-140	12	30	
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140	10	30	
Nitrobenzene	2.49	0.333	mg/kg wet	3.333		75	40-140	10	30	
N-Nitrosodimethylamine	2.36	0.333	mg/kg wet	3.333		71	40-140	10	30	
N-Nitroso-Di-n-Propylamine	2.65	0.333	mg/kg wet	3.333		79	40-140	14	30	
N-nitrosodiphenylamine	2.90	0.333	mg/kg wet	3.333		87	40-140	4	30	
Pentachlorophenol	2.35	1.67	mg/kg wet	3.333		71	30-130	12	30	
Phenanthrene	2.92	0.333	mg/kg wet	3.333		88	40-140	5	30	
Phenol	2.85	0.333	mg/kg wet	3.333		86	30-130	26	30	
Pyrene	3.31	0.333	mg/kg wet	3.333		99	40-140	6	30	
Pyridine	1.84	1.67	mg/kg wet	3.333		55	40-140	10	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.87		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	5.000		75	30-130			
Surrogate: Nitrobenzene-d5	2.74		mg/kg wet	3.333		82	30-130			
Surrogate: Phenol-d6	3.91		mg/kg wet	5.000		78	30-130			
Surrogate: p-Terphenyl-d14	3.38		mg/kg wet	3.333		101	30-130			



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510741

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.5 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

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

ESS Laboratory Work Order: 1510741

**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](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](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](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: 15100741  
 Date Project Due: 11/2/15  
 Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present?

\* No

Air No.:

2. Were Custody Seals Present?

No

3. Were Custody Seals Intact?

N/A

4. Is Radiation count < 100 CPM?

Yes

5. Is a cooler present?

Yes

Cooler Temp: 5.3

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 @ 179 JL 10/26/15

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: 10/26/15 1641

Reviewed By: [Signature]

Date/Time: 10/26/15 1707

# ESS Laboratory

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

# CHAIN OF CUSTODY

Turn Time: 5 Days  
 Regulatory State: Rhode Island  
 Is this project for any of the following?:  
 CT RCP  MA MCP  RGP  DOD  
 Project # 74-15-0002.134  
 Project Name Textron Providence

ESS Lab # 1510741

Reporting Limits RI DEM RDEC

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

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

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Material S&S	Loam	D	Analysis																													
								VOC	VOC Low Level	SVOC	RCRA 8	TPH	PB	Corrosivity	9045	Other	Specify	Other																			
1	10/26/15	1430	Grab	Soil				X	X	X	X	X	X																								

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

Laboratory Use Only  
 Sampled by: G. Gilbert-Thielsch  
 Cooler Present: YES  Drop Off   
 Seals Intact: YES  Pickup   
 Cooler Temperature: 5.3002 F / 10/26/15 Technician Hours →  
 Received by: (Signature, Date & Time) 10/26/15  
 Relinquished by: (Signature, Date & Time) 10/26/15  
 Requisitioned by: (Signature, Date & Time) \_\_\_\_\_  
 Relinquished by: (Signature, Date & Time) \_\_\_\_\_  
 Comments: Please specify "Other" preservative and containers types in this space  
 Please CC: mpolsky@thielsch.com



*CERTIFICATE OF ANALYSIS*

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

**RE: Textron Providence (74-15-0002.134)**  
**ESS Laboratory Work Order Number: 1511126**

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

Laurel Stoddard  
Laboratory Director

**REVIEWED**  
*By ESS Laboratory at 3:31 pm, Nov 12, 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**SAMPLE RECEIPT**

The following samples were received on November 05, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on November 5, 2015 at 20:20.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1511126-01	Material S and S Loam H	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**PROJECT NARRATIVE**

**8100M Total Petroleum Hydrocarbons**

CYK0081-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
Hexadecane (C16) (21% @ 20%)

**8270D Semi-Volatile Organic Compounds**

CYK0068-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (107% @ 80-120%), Benzoic Acid (117% @ 80-120%)

CYK0068-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
3+4-Methylphenol (21% @ 20%)

CYK0068-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).  
N-Nitrosodimethylamine (27% @ 20%), Pentachlorophenol (28% @ 20%), Pyridine (27% @ 20%)

CYK0068-CCV1 Initial Calibration Verification recovery is above upper control limit (ICV+).  
Benzoic Acid

CYK0088-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (95% @ 80-120%)

CYK0088-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).  
Hexachlorocyclopentadiene (22% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pentachlorophenol (29% @ 20%), Pyridine (29% @ 20%)

CYK0088-CCV1 Initial Calibration Verification recovery is above upper control limit (ICV+).  
Benzoic Acid

**Total Metals**

CK50619-BSD1 Blank Spike recovery is below lower control limit (B-).  
Cadmium (71% @ 73-127%)

**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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
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	3.36 (2.52)		6010C		1	KJK	11/07/15 14:32	2.06	100	CK50619
Barium	31.0 (2.52)		6010C		1	KJK	11/07/15 14:32	2.06	100	CK50619
Cadmium	ND (0.50)		6010C		1	KJK	11/07/15 14:32	2.06	100	CK50619
Chromium	5.03 (1.01)		6010C		1	KJK	11/07/15 14:32	2.06	100	CK50619
Lead	11.1 (5.04)		6010C		1	KJK	11/07/15 14:32	2.06	100	CK50619
Mercury	0.041 (0.030)		7471B		1	PJP	11/09/15 13:29	0.69	40	CK50620
Selenium	ND (10.1)		6010C		2	KJK	11/07/15 19:57	2.06	100	CK50619
Silver	ND (0.50)		6010C		1	KJK	11/07/15 14:32	2.06	100	CK50619



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96  
Initial Volume: 6.3  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
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	11/09/15 16:05	CYK0123	CK50935
1,1,1-Trichloroethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,1,2,2-Tetrachloroethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,1,2-Trichloroethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,1-Dichloroethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,1-Dichloroethene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,1-Dichloropropene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2,3-Trichlorobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2,3-Trichloropropane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2,4-Trichlorobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2,4-Trimethylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2-Dibromo-3-Chloropropane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2-Dibromoethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2-Dichlorobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2-Dichloroethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,2-Dichloropropane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,3,5-Trimethylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,3-Dichlorobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,3-Dichloropropane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,4-Dichlorobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1,4-Dioxane	ND (0.0824)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
1-Chlorohexane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
2,2-Dichloropropane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
2-Butanone	ND (0.0412)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
2-Chlorotoluene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
2-Hexanone	ND (0.0412)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
4-Chlorotoluene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
4-Isopropyltoluene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
4-Methyl-2-Pentanone	ND (0.0412)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Acetone	ND (0.0412)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Benzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Bromobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96  
Initial Volume: 6.3  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
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	11/09/15 16:05	CYK0123	CK50935
Bromodichloromethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Bromoform	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Bromomethane	ND (0.0082)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Carbon Disulfide	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Carbon Tetrachloride	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Chlorobenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Chloroethane	ND (0.0082)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Chloroform	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Chloromethane	ND (0.0082)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
cis-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
cis-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Dibromochloromethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Dibromomethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Dichlorodifluoromethane	ND (0.0082)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Diethyl Ether	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Di-isopropyl ether	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Ethyl tertiary-butyl ether	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Ethylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Hexachlorobutadiene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Isopropylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Methyl tert-Butyl Ether	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Methylene Chloride	ND (0.0206)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Naphthalene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
n-Butylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
n-Propylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
sec-Butylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Styrene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
tert-Butylbenzene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Tertiary-amyl methyl ether	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Tetrachloroethene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Tetrahydrofuran	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96  
Initial Volume: 6.3  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
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	11/09/15 16:05	CYK0123	CK50935
trans-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
trans-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Trichloroethene	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Trichlorofluoromethane	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Vinyl Acetate	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Vinyl Chloride	ND (0.0082)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Xylene O	ND (0.0041)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Xylene P,M	ND (0.0082)		8260B Low		1	11/09/15 16:05	CYK0123	CK50935
Xylenes (Total)	ND (0.0082)		8260B Low		1	11/09/15 16:05		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>97 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96  
Initial Volume: 20.4  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 11/6/15 10:20

**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	156 (38.2)		8100M		1	11/06/15 21:29	CYK0108	CK50514
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		67 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96  
Initial Volume: 15.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
1,2,4-Trichlorobenzene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
1,2-Dichlorobenzene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
1,3-Dichlorobenzene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
1,4-Dichlorobenzene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,3,4,6-Tetrachlorophenol	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,4,5-Trichlorophenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,4,6-Trichlorophenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,4-Dichlorophenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,4-Dimethylphenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,4-Dinitrophenol	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,4-Dinitrotoluene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2,6-Dinitrotoluene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2-Chloronaphthalene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2-Chlorophenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2-Methylnaphthalene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2-Methylphenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2-Nitroaniline	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
2-Nitrophenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
3,3'-Dichlorobenzidine	ND (0.679)		8270D		1	11/06/15 14:50	CYK0088	CK50516
3+4-Methylphenol	ND (0.679)		8270D		1	11/06/15 14:50	CYK0088	CK50516
3-Nitroaniline	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4,6-Dinitro-2-Methylphenol	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4-Bromophenyl-phenylether	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4-Chloro-3-Methylphenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4-Chloroaniline	ND (0.679)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4-Chloro-phenyl-phenyl ether	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4-Nitroaniline	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
4-Nitrophenol	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Acenaphthene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Acenaphthylene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Acetophenone	ND (0.679)		8270D		1	11/06/15 14:50	CYK0088	CK50516



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96  
Initial Volume: 15.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.679)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Anthracene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Azobenzene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzo(a)anthracene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzo(a)pyrene	ND (0.170)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzo(b)fluoranthene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzo(g,h,i)perylene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzo(k)fluoranthene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzoic Acid	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Benzyl Alcohol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
bis(2-Chloroethoxy)methane	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
bis(2-Chloroethyl)ether	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
bis(2-chloroisopropyl)Ether	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
bis(2-Ethylhexyl)phthalate	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Butylbenzylphthalate	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Carbazole	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Chrysene	ND (0.170)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Dibenzo(a,h)Anthracene	ND (0.170)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Dibenzofuran	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Diethylphthalate	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Dimethylphthalate	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Di-n-butylphthalate	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Di-n-octylphthalate	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Fluoranthene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Fluorene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Hexachlorobenzene	ND (0.170)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Hexachlorobutadiene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Hexachlorocyclopentadiene	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Hexachloroethane	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Indeno(1,2,3-cd)Pyrene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Isophorone	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Naphthalene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
 Client Project ID: Textron Providence  
 Client Sample ID: Material S and S Loam H  
 Date Sampled: 11/05/15 14:00  
 Percent Solids: 96  
 Initial Volume: 15.3  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1511126  
 ESS Laboratory Sample ID: 1511126-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: JXS  
 Prepared: 11/6/15 10:30

**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 (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
N-Nitrosodimethylamine	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
N-Nitroso-Di-n-Propylamine	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
N-nitrosodiphenylamine	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Pentachlorophenol	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Phenanthrene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Phenol	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Pyrene	ND (0.339)		8270D		1	11/06/15 14:50	CYK0088	CK50516
Pyridine	ND (1.70)		8270D		1	11/06/15 14:50	CYK0088	CK50516

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	44 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	50 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	42 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	49 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	37 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	44 %		30-130
<i>Surrogate: Phenol-d6</i>	42 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	55 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam H  
Date Sampled: 11/05/15 14:00  
Percent Solids: 96

ESS Laboratory Work Order: 1511126  
ESS Laboratory Sample ID: 1511126-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	5.00 (N/A)		9045		1	MJV	11/06/15 16:42	S.U.	CK50611
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.9 °C.								



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50619 - 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	48.3	10.0	mg/kg wet	52.30	92	80-120
Barium	122	10.0	mg/kg wet	145.0	84	80-120
Cadmium	56.4	2.00	mg/kg wet	71.60	79	73-127
Chromium	73.5	4.00	mg/kg wet	88.50	83	80-120
Selenium	68.3	20.0	mg/kg wet	81.10	84	80-120
Silver	103	2.00	mg/kg wet	114.0	91	80-120

**LCS**

Lead	109	19.6	mg/kg wet	133.0	82	80-120
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**LCS Dup**

Arsenic	59.3	9.80	mg/kg wet	52.30	113	80-120	20	20
Barium	134	9.80	mg/kg wet	145.0	92	80-120	9	20
Cadmium	50.8	1.96	mg/kg wet	71.60	71	73-127	10	20
Chromium	76.7	3.92	mg/kg wet	88.50	87	80-120	4	20
Selenium	74.3	19.6	mg/kg wet	81.10	92	80-120	8	20
Silver	113	1.96	mg/kg wet	114.0	99	80-120	9	20

**LCS Dup**

Lead	108	19.6	mg/kg wet	133.0	81	80-120	0.3	20
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**Batch CK50620 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	8.57	1.83	mg/kg wet	9.700	88	80-120
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**LCS Dup**

Mercury	8.80	1.94	mg/kg wet	9.700	91	80-120	3	20
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**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CK50935 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50935 - 5035**

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



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Client Name: Charter Contracting Company  
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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 CK50935 - 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	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0524		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0474		mg/kg wet	0.05000		95	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
1,2,3-Trichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichloropropane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0382	0.0050	mg/kg wet	0.05000		76	70-130			
1,2-Dibromoethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dichloroethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dichloropropane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,3,5-Trimethylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			



*CERTIFICATE OF ANALYSIS*

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ESS Laboratory Work Order: 1511126

**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 CK50935 - 5035**

1,3-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,3-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,4-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,4-Dioxane	0.915	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
2,2-Dichloropropane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
2-Butanone	0.242	0.0500	mg/kg wet	0.2500		97	70-130			
2-Chlorotoluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
2-Hexanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
4-Isopropyltoluene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
4-Methyl-2-Pentanone	0.263	0.0500	mg/kg wet	0.2500		105	70-130			
Acetone	0.253	0.0500	mg/kg wet	0.2500		101	70-130			
Benzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
Bromobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Bromochloromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Bromodichloromethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Bromoform	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromomethane	0.0595	0.0100	mg/kg wet	0.05000		119	70-130			
Carbon Disulfide	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Carbon Tetrachloride	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0650	0.0100	mg/kg wet	0.05000		130	70-130			
Chloroform	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Chloromethane	0.0573	0.0100	mg/kg wet	0.05000		115	70-130			
cis-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
cis-1,3-Dichloropropene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Dibromochloromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Dibromomethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0593	0.0100	mg/kg wet	0.05000		119	70-130			
Diethyl Ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Di-isopropyl ether	0.0576	0.0050	mg/kg wet	0.05000		115	70-130			
Ethyl tertiary-butyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Methyl tert-Butyl Ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Methylene Chloride	0.0532	0.0250	mg/kg wet	0.05000		106	70-130			
Naphthalene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
n-Butylbenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
n-Propylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
sec-Butylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
tert-Butylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Tertiary-amyl methyl ether	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			



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**Quality Control Data**

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

**Batch CK50935 - 5035**

Tetrachloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrahydrofuran	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Toluene	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
trans-1,2-Dichloroethene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Vinyl Acetate	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Vinyl Chloride	0.0624	0.0100	mg/kg wet	0.05000		125	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0453		mg/kg wet	0.05000		91	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
1,1,1-Trichloroethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
1,1,2-Trichloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,1-Dichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
1,1-Dichloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
1,1-Dichloropropene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
1,2,3-Trichloropropane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	0.09	25	
1,2,4-Trichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,2,4-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
1,2-Dibromo-3-Chloropropane	0.0385	0.0050	mg/kg wet	0.05000		77	70-130	0.7	25	
1,2-Dibromoethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,2-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
1,2-Dichloroethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
1,2-Dichloropropane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,3,5-Trimethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
1,3-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,3-Dichloropropane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,4-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,4-Dioxane	0.893	0.100	mg/kg wet	1.000		89	70-130	2	20	
1-Chlorohexane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
2,2-Dichloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		93	70-130	3	25	
2-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
2-Hexanone	0.237	0.0500	mg/kg wet	0.2500		95	70-130	3	25	
4-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
4-Isopropyltoluene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	25	



*CERTIFICATE OF ANALYSIS*

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**Quality Control Data**

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

**Batch CK50935 - 5035**

4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	1	25	
Acetone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	3	25	
Benzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
Bromobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Bromochloromethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
Bromodichloromethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
Bromoform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Bromomethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130	7	25	
Carbon Disulfide	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Carbon Tetrachloride	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Chlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloroethane	0.0548	0.0100	mg/kg wet	0.05000		110	70-130	17	25	
Chloroform	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Chloromethane	0.0539	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
cis-1,2-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
cis-1,3-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130	7	25	
Dibromochloromethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	3	25	
Dibromomethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130	7	25	
Diethyl Ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
Di-isopropyl ether	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Ethyl tertiary-butyl ether	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Ethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Hexachlorobutadiene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Isopropylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Methyl tert-Butyl Ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
Methylene Chloride	0.0482	0.0250	mg/kg wet	0.05000		96	70-130	10	25	
Naphthalene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.2	25	
n-Butylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
n-Propylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
sec-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Styrene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
tert-Butylbenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Tertiary-amyl methyl ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	6	25	
Tetrachloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
trans-1,3-Dichloropropene	0.0398	0.0050	mg/kg wet	0.05000		80	70-130	6	25	
Trichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
Trichlorofluoromethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
Vinyl Acetate	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Vinyl Chloride	0.0580	0.0100	mg/kg wet	0.05000		116	70-130	7	25	
Xylene O	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130	4	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 151126

**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 CK50935 - [CALC]**

Xylenes (Total)	0.149	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0465		mg/kg wet	0.05000		93	70-130			
Surrogate: 4-Bromofluorobenzene	0.0480		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0448		mg/kg wet	0.05000		90	70-130			

8100M Total Petroleum Hydrocarbons

**Batch CK50514 - 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	4.47		mg/kg wet	5.000		89	40-140			
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**LCS**

Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140			
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	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		98	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		92	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		91	40-140			
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		88	40-140			

Surrogate: O-Terphenyl	4.61		mg/kg wet	5.000		92	40-140			
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**LCS Dup**

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140	5	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50514 - 3546**

Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		82	40-140	10	25	
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		95	40-140	3	25	
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		95	40-140	4	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		98	40-140	5	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	6	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		93	40-140	5	25	
Total Petroleum Hydrocarbons	33.2	37.5	mg/kg wet	35.00		95	40-140	4	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	4	25	

Surrogate: O-Terphenyl 4.47 mg/kg wet 5.000 89 40-140

**8270D Semi-Volatile Organic Compounds**

**Batch CK50516 - 3546**

**Blank**

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



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50516 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50516 - 3546**

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.62		mg/kg wet	3.333		79	30-130			
Surrogate: 2,4,6-Tribromophenol	3.50		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Chlorophenol-d4	3.48		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.06		mg/kg wet	5.000		61	30-130			
Surrogate: Nitrobenzene-d5	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: Phenol-d6	3.42		mg/kg wet	5.000		68	30-130			
Surrogate: p-Terphenyl-d14	2.99		mg/kg wet	3.333		90	30-130			

**LCS**

1,1-Biphenyl	2.41	0.333	mg/kg wet	3.333		72	40-140			
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.44	0.333	mg/kg wet	3.333		73	40-140			
1,3-Dichlorobenzene	2.30	0.333	mg/kg wet	3.333		69	40-140			
1,4-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
2,3,4,6-Tetrachlorophenol	2.68	1.67	mg/kg wet	3.333		80	30-130			
2,4,5-Trichlorophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
2,4,6-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2,4-Dichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4-Dimethylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dinitrophenol	2.28	1.67	mg/kg wet	3.333		68	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Chloronaphthalene	2.23	0.333	mg/kg wet	3.333		67	40-140			
2-Chlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2-Methylnaphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2-Methylphenol	2.51	0.333	mg/kg wet	3.333		75	30-130			
2-Nitroaniline	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.42	0.333	mg/kg wet	3.333		73	30-130			
3,3'-Dichlorobenzidine	2.91	0.667	mg/kg wet	3.333		87	40-140			
3+4-Methylphenol	5.09	0.667	mg/kg wet	6.667		76	30-130			
3-Nitroaniline	2.59	0.333	mg/kg wet	3.333		78	40-140			
4,6-Dinitro-2-Methylphenol	2.51	1.67	mg/kg wet	3.333		75	30-130			
4-Bromophenyl-phenylether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130			
4-Chloroaniline	2.17	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.72	0.333	mg/kg wet	3.333		82	40-140			
4-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
4-Nitrophenol	2.40	1.67	mg/kg wet	3.333		72	30-130			
Acenaphthene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Acenaphthylene	2.58	0.333	mg/kg wet	3.333		77	40-140			
Acetophenone	2.53	0.667	mg/kg wet	3.333		76	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.68	0.333	mg/kg wet	3.333		80	40-140			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50516 - 3546**

Benzo(a)anthracene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Benzo(a)pyrene	3.07	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140			
Benzo(g,h,i)perylene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.73	1.67	mg/kg wet	3.333		82	40-140			
Benzyl Alcohol	2.25	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethoxy)methane	2.47	0.333	mg/kg wet	3.333		74	40-140			
bis(2-Chloroethyl)ether	2.19	0.333	mg/kg wet	3.333		66	40-140			
bis(2-chloroisopropyl)Ether	2.38	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Ethylhexyl)phthalate	3.19	0.333	mg/kg wet	3.333		96	40-140			
Butylbenzylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140			
Carbazole	3.06	0.333	mg/kg wet	3.333		92	40-140			
Chrysene	3.10	0.167	mg/kg wet	3.333		93	40-140			
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		95	40-140			
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140			
Diethylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140			
Dimethylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140			
Di-n-butylphthalate	3.34	0.333	mg/kg wet	3.333		100	40-140			
Di-n-octylphthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Fluorene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Hexachlorobenzene	2.60	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorocyclopentadiene	2.10	1.67	mg/kg wet	3.333		63	40-140			
Hexachloroethane	2.39	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	3.14	0.333	mg/kg wet	3.333		94	40-140			
Isophorone	2.30	0.333	mg/kg wet	3.333		69	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.32	0.333	mg/kg wet	3.333		70	40-140			
N-Nitrosodimethylamine	1.60	0.333	mg/kg wet	3.333		48	40-140			
N-Nitroso-Di-n-Propylamine	2.45	0.333	mg/kg wet	3.333		74	40-140			
N-nitrosodiphenylamine	2.79	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		75	30-130			
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Phenol	2.10	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Pyridine	1.35	1.67	mg/kg wet	3.333		41	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.53		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	3.83		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.29		mg/kg wet	5.000		66	30-130			
Surrogate: 2-Fluorobiphenyl	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2-Fluorophenol	2.94		mg/kg wet	5.000		59	30-130			
Surrogate: Nitrobenzene-d5	2.36		mg/kg wet	3.333		71	30-130			
Surrogate: Phenol-d6	3.17		mg/kg wet	5.000		63	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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 CK50516 - 3546**

**LCS Dup**

1,1-Biphenyl	2.43	0.333	mg/kg wet	3.333		73	40-140	0.7	30	
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	2	30	
1,2-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140	1	30	
1,3-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	0.9	30	
1,4-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	2	30	
2,3,4,6-Tetrachlorophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	6	30	
2,4,5-Trichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130	4	30	
2,4,6-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130	2	30	
2,4-Dichlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	1	30	
2,4-Dimethylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130	0.3	30	
2,4-Dinitrophenol	2.29	1.67	mg/kg wet	3.333		69	30-130	0.6	30	
2,4-Dinitrotoluene	2.73	0.333	mg/kg wet	3.333		82	40-140	7	30	
2,6-Dinitrotoluene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
2-Chloronaphthalene	2.25	0.333	mg/kg wet	3.333		68	40-140	0.8	30	
2-Chlorophenol	2.28	0.333	mg/kg wet	3.333		68	30-130	2	30	
2-Methylnaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	0.6	30	
2-Methylphenol	2.62	0.333	mg/kg wet	3.333		79	30-130	4	30	
2-Nitroaniline	2.17	0.333	mg/kg wet	3.333		65	40-140	5	30	
2-Nitrophenol	2.44	0.333	mg/kg wet	3.333		73	30-130	0.6	30	
3,3'-Dichlorobenzidine	2.78	0.667	mg/kg wet	3.333		83	40-140	5	30	
3+4-Methylphenol	5.37	0.667	mg/kg wet	6.667		81	30-130	5	30	
3-Nitroaniline	2.46	0.333	mg/kg wet	3.333		74	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.40	1.67	mg/kg wet	3.333		72	30-130	4	30	
4-Bromophenyl-phenylether	2.51	0.333	mg/kg wet	3.333		75	40-140	11	30	
4-Chloro-3-Methylphenol	2.73	0.333	mg/kg wet	3.333		82	30-130	4	30	
4-Chloroaniline	2.21	0.667	mg/kg wet	3.333		66	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.60	0.333	mg/kg wet	3.333		78	40-140	5	30	
4-Nitroaniline	2.56	0.333	mg/kg wet	3.333		77	40-140	4	30	
4-Nitrophenol	2.30	1.67	mg/kg wet	3.333		69	30-130	4	30	
Acenaphthene	2.58	0.333	mg/kg wet	3.333		77	40-140	1	30	
Acenaphthylene	2.53	0.333	mg/kg wet	3.333		76	40-140	2	30	
Acetophenone	2.63	0.667	mg/kg wet	3.333		79	40-140	4	30	
Aniline	1.98	0.667	mg/kg wet	3.333		60	40-140	6	30	
Anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140	7	30	
Azobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	8	30	
Benzo(a)anthracene	2.88	0.333	mg/kg wet	3.333		86	40-140	7	30	
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140	7	30	
Benzo(b)fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	6	30	
Benzo(g,h,i)perylene	3.03	0.333	mg/kg wet	3.333		91	40-140	6	30	
Benzo(k)fluoranthene	2.64	0.333	mg/kg wet	3.333		79	40-140	8	30	
Benzoic Acid	2.74	1.67	mg/kg wet	3.333		82	40-140	0.2	30	
Benzyl Alcohol	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
bis(2-Chloroethyl)ether	2.23	0.333	mg/kg wet	3.333		67	40-140	2	30	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
<b>8270D Semi-Volatile Organic Compounds</b>										
<b>Batch CK50516 - 3546</b>										
bis(2-chloroisopropyl)Ether	2.43	0.333	mg/kg wet	3.333		73	40-140	2	30	
bis(2-Ethylhexyl)phthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	9	30	
Carbazole	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Chrysene	2.87	0.167	mg/kg wet	3.333		86	40-140	8	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	7	30	
Dibenzofuran	2.51	0.333	mg/kg wet	3.333		75	40-140	3	30	
Diethylphthalate	2.68	0.333	mg/kg wet	3.333		80	40-140	7	30	
Dimethylphthalate	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
Di-n-butylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	7	30	
Di-n-octylphthalate	2.85	0.333	mg/kg wet	3.333		86	40-140	12	30	
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
Fluorene	2.63	0.333	mg/kg wet	3.333		79	40-140	5	30	
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140	8	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	2	30	
Hexachlorocyclopentadiene	2.22	1.67	mg/kg wet	3.333		66	40-140	6	30	
Hexachloroethane	2.42	0.333	mg/kg wet	3.333		73	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	2.94	0.333	mg/kg wet	3.333		88	40-140	7	30	
Isophorone	2.30	0.333	mg/kg wet	3.333		69	40-140	0.4	30	
Naphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140	1	30	
Nitrobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	0.7	30	
N-Nitrosodimethylamine	1.64	0.333	mg/kg wet	3.333		49	40-140	3	30	
N-Nitroso-Di-n-Propylamine	2.57	0.333	mg/kg wet	3.333		77	40-140	5	30	
N-nitrosodiphenylamine	2.55	0.333	mg/kg wet	3.333		76	40-140	9	30	
Pentachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	6	30	
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140	7	30	
Phenol	2.16	0.333	mg/kg wet	3.333		65	30-130	3	30	
Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140	7	30	
Pyridine	1.39	1.67	mg/kg wet	3.333		42	40-140	3	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Fluorobiphenyl	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2-Fluorophenol	3.00		mg/kg wet	5.000		60	30-130			
Surrogate: Nitrobenzene-d5	2.33		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.29		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.83		mg/kg wet	3.333		85	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.9 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- ICV+ Initial Calibration Verification recovery is above upper control limit (ICV+).
- 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 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511126

**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](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](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](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: 15110126  
 Date Project Due: 11/12/15  
 Days For Project: 5 Day

**Items to be checked upon receipt:**

- 1. Air Bill Manifest Present?  \* No
- Air No.: \_\_\_\_\_
- 2. Were Custody Seals Present?  No
- 3. Were Custody Seals Intact?  N/A
- 4. Is Radiation count < 100 CPM?  Yes
- 5. Is a cooler present?  Yes
- Cooler Temp: 1.9
- 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 @ 2020 JL 11/5/15

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: 11/5/15 1949  
 Date/Time: 11/5/15 2017

# CHAIN OF CUSTODY

ESS Lab # **1511126** Reporting Limits **RI DEM RDEC**

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

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

Project # **74-15-0002.134** Project Name **Textron Providence**  
 Address **500 Harrison Avenue, Suite 4R** PO #

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

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

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

ESS Lab ID **1** Collection Date **11/5/15** Collection Time **1400** Sample Type **Grab** Sample Matrix **Soil** Sample ID **H**

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

Container Volume: **1-100 mL** 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other\* 10 7 7 10 10 10

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

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

Analysis: **VOC** **VOC Low Level** **SVOC** **RCRA 8** **TPH**

Data Checker  Other (Please Specify →)

PH: Corrosivity 9045

Received by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

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Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

## Laboratory Use Only

Cooler Present: **YES**  Drop Off  Pickup

Seals Intact: **NO**  Technician Hours →

Cooler Temperature: **1.9 35.3 15** **11/5/15**

Received by: (Signature, Date & Time) **11/5/15**

Reinquished by: (Signature, Date & Time) **11/5/15**

Reinquished by: (Signature, Date & Time)

Sampled by: **M. Sheehan-Thielsch**

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

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

Received by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)

Reinquished by: (Signature, Date & Time)





*CERTIFICATE OF ANALYSIS*

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

**RE: Textron Providence (74-15-0002.134)**  
**ESS Laboratory Work Order Number: 1511124**

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 3:28 pm, Nov 12, 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**SAMPLE RECEIPT**

The following samples were received on November 05, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on November 5, 2015 at 20:20.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1511124-01	Material S and S Loam F	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

1511124-01 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

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

1511124-01RE1 Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

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

**8100M Total Petroleum Hydrocarbons**

CYK0081-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

Hexadecane (C16) (21% @ 20%)

**8270D Semi-Volatile Organic Compounds**

CYK0068-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (107% @ 80-120%), Benzoic Acid (117% @ 80-120%)

CYK0068-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).

3+4-Methylphenol (21% @ 20%)

CYK0068-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

N-Nitrosodimethylamine (27% @ 20%), Pentachlorophenol (28% @ 20%), Pyridine (27% @ 20%)

CYK0068-CCV1 Initial Calibration Verification recovery is above upper control limit (ICV+).

Benzoic Acid

CYK0088-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (95% @ 80-120%)

CYK0088-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexachlorocyclopentadiene (22% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pentachlorophenol (29% @ 20%), Pyridine (29% @ 20%)

CYK0088-CCV1 Initial Calibration Verification recovery is above upper control limit (ICV+).

Benzoic Acid

**Total Metals**

CK50619-BSD1 Blank Spike recovery is below lower control limit (B-).

Cadmium (71% @ 73-127%)

**No other observations noted.**

**End of Project Narrative.**



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
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	3.52 (2.58)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619
Barium	26.7 (2.58)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619
Cadmium	ND (0.52)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619
Chromium	4.99 (1.03)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619
Lead	11.8 (5.15)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619
Mercury	0.064 (0.031)		7471B		1	PJP	11/09/15 13:13	0.66	40	CK50620
Selenium	ND (5.15)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619
Silver	ND (0.52)		6010C		1	KJK	11/07/15 14:24	2	100	CK50619



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 5.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,1,1-Trichloroethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,1,2,2-Tetrachloroethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,1,2-Trichloroethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,1-Dichloroethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,1-Dichloroethene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,1-Dichloropropene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2,3-Trichlorobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2,3-Trichloropropane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2,4-Trichlorobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2,4-Trimethylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2-Dibromo-3-Chloropropane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2-Dibromoethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2-Dichlorobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2-Dichloroethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,2-Dichloropropane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,3,5-Trimethylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,3-Dichlorobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,3-Dichloropropane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,4-Dichlorobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1,4-Dioxane	ND (0.0888)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
1-Chlorohexane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
2,2-Dichloropropane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
2-Butanone	ND (0.0444)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
2-Chlorotoluene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
2-Hexanone	ND (0.0444)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
4-Chlorotoluene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
4-Isopropyltoluene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
4-Methyl-2-Pentanone	ND (0.0444)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Acetone	ND (0.0444)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Benzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Bromobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 5.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Bromodichloromethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Bromoform	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Bromomethane	ND (0.0089)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Carbon Disulfide	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Carbon Tetrachloride	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Chlorobenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Chloroethane	ND (0.0089)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Chloroform	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Chloromethane	ND (0.0089)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
cis-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
cis-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Dibromochloromethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Dibromomethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Diethyl Ether	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Di-isopropyl ether	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Ethyl tertiary-butyl ether	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Ethylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Hexachlorobutadiene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Isopropylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Methyl tert-Butyl Ether	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Methylene Chloride	ND (0.0222)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Naphthalene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
n-Butylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
n-Propylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
sec-Butylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Styrene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
tert-Butylbenzene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Tertiary-amyl methyl ether	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Tetrachloroethene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Tetrahydrofuran	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 5.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
trans-1,2-Dichloroethene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
trans-1,3-Dichloropropene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Trichloroethene	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Trichlorofluoromethane	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Vinyl Acetate	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Vinyl Chloride	ND (0.0089)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Xylene O	ND (0.0044)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Xylene P,M	ND (0.0089)		8260B Low		1	11/07/15 22:47	CYK0102	CK50708
Xylenes (Total)	ND (0.0089)		8260B Low		1	11/07/15 22:47		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>85 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>		<i>70-130</i>





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 20.9  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 11/6/15 10:20

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	164 (37.0)		8100M		1	11/06/15 20:12	CYK0108	CK50514
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		70 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 15.1  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
1,2,4-Trichlorobenzene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
1,2-Dichlorobenzene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
1,3-Dichlorobenzene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
1,4-Dichlorobenzene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,3,4,6-Tetrachlorophenol	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,4,5-Trichlorophenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,4,6-Trichlorophenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,4-Dichlorophenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,4-Dimethylphenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,4-Dinitrophenol	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,4-Dinitrotoluene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2,6-Dinitrotoluene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2-Chloronaphthalene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2-Chlorophenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2-Methylnaphthalene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2-Methylphenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2-Nitroaniline	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
2-Nitrophenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
3,3'-Dichlorobenzidine	ND (0.683)		8270D		1	11/06/15 13:40	CYK0088	CK50516
3+4-Methylphenol	ND (0.683)		8270D		1	11/06/15 13:40	CYK0088	CK50516
3-Nitroaniline	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4,6-Dinitro-2-Methylphenol	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4-Bromophenyl-phenylether	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4-Chloro-3-Methylphenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4-Chloroaniline	ND (0.683)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4-Chloro-phenyl-phenyl ether	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4-Nitroaniline	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
4-Nitrophenol	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Acenaphthene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Acenaphthylene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Acetophenone	ND (0.683)		8270D		1	11/06/15 13:40	CYK0088	CK50516



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 15.1  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.683)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Anthracene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Azobenzene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzo(a)anthracene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzo(a)pyrene	ND (0.171)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzo(b)fluoranthene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzo(g,h,i)perylene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzo(k)fluoranthene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzoic Acid	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Benzyl Alcohol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
bis(2-Chloroethoxy)methane	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
bis(2-Chloroethyl)ether	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
bis(2-chloroisopropyl)Ether	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
bis(2-Ethylhexyl)phthalate	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Butylbenzylphthalate	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Carbazole	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Chrysene	ND (0.171)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Dibenzo(a,h)Anthracene	ND (0.171)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Dibenzofuran	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Diethylphthalate	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Dimethylphthalate	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Di-n-butylphthalate	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Di-n-octylphthalate	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Fluoranthene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Fluorene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Hexachlorobenzene	ND (0.171)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Hexachlorobutadiene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Hexachlorocyclopentadiene	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Hexachloroethane	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Indeno(1,2,3-cd)Pyrene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Isophorone	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Naphthalene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
 Client Project ID: Textron Providence  
 Client Sample ID: Material S and S Loam F  
 Date Sampled: 11/05/15 13:30  
 Percent Solids: 97  
 Initial Volume: 15.1  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1511124  
 ESS Laboratory Sample ID: 1511124-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: JXS  
 Prepared: 11/6/15 10:30

**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 (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
N-Nitrosodimethylamine	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
N-Nitroso-Di-n-Propylamine	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
N-nitrosodiphenylamine	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Pentachlorophenol	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Phenanthrene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Phenol	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Pyrene	ND (0.341)		8270D		1	11/06/15 13:40	CYK0088	CK50516
Pyridine	ND (1.71)		8270D		1	11/06/15 13:40	CYK0088	CK50516

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	54 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	55 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	48 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	55 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	43 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	51 %		30-130
<i>Surrogate: Phenol-d6</i>	47 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	58 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01  
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)	4.99 (N/A)		9045		1	MJV	11/06/15 16:42	S.U.	CK50611
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.8 °C.								



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01RE1  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1,4-Dioxane	ND (0.0859)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
1-Chlorohexane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
2-Butanone	ND (0.0429)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
2-Chlorotoluene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
2-Hexanone	ND (0.0429)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
4-Chlorotoluene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
4-Methyl-2-Pentanone	ND (0.0429)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Acetone	ND (0.0429)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Benzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Bromobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01RE1  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Bromodichloromethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Bromoform	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Bromomethane	ND (0.0086)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Carbon Disulfide	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Chlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Chloroethane	ND (0.0086)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Chloroform	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Chloromethane	ND (0.0086)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Dibromochloromethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Dibromomethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Dichlorodifluoromethane	ND (0.0086)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Diethyl Ether	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Di-isopropyl ether	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Ethylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Isopropylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Methylene Chloride	ND (0.0215)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Naphthalene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
n-Butylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
n-Propylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
sec-Butylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Styrene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
tert-Butylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Tetrachloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Tetrahydrofuran	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam F  
Date Sampled: 11/05/15 13:30  
Percent Solids: 97  
Initial Volume: 6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511124  
ESS Laboratory Sample ID: 1511124-01RE1  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Trichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Vinyl Acetate	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Vinyl Chloride	ND (0.0086)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Xylene O	ND (0.0043)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Xylene P,M	ND (0.0086)		8260B Low		1	11/09/15 15:08	CYK0123	CK50935
Xylenes (Total)	ND (0.0086)		8260B Low		1	11/09/15 15:08		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>113 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>70-130</i>





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50619 - 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	48.3	10.0	mg/kg wet	52.30	92	80-120
Barium	122	10.0	mg/kg wet	145.0	84	80-120
Cadmium	56.4	2.00	mg/kg wet	71.60	79	73-127
Chromium	73.5	4.00	mg/kg wet	88.50	83	80-120
Selenium	68.3	20.0	mg/kg wet	81.10	84	80-120
Silver	103	2.00	mg/kg wet	114.0	91	80-120

**LCS**

Lead	109	19.6	mg/kg wet	133.0	82	80-120
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**LCS Dup**

Arsenic	59.3	9.80	mg/kg wet	52.30	113	80-120	20	20
Barium	134	9.80	mg/kg wet	145.0	92	80-120	9	20
Cadmium	50.8	1.96	mg/kg wet	71.60	71	73-127	10	20
Chromium	76.7	3.92	mg/kg wet	88.50	87	80-120	4	20
Selenium	74.3	19.6	mg/kg wet	81.10	92	80-120	8	20
Silver	113	1.96	mg/kg wet	114.0	99	80-120	9	20

**LCS Dup**

Lead	108	19.6	mg/kg wet	133.0	81	80-120	0.3	20
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**Batch CK50620 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	8.57	1.83	mg/kg wet	9.700	88	80-120
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**LCS Dup**

Mercury	8.80	1.94	mg/kg wet	9.700	91	80-120	3	20
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**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CK50708 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50708 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50708 - 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	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0505		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0531		mg/kg wet	0.05000		106	70-130			
Surrogate: Toluene-d8	0.0480		mg/kg wet	0.05000		96	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
1,1,1-Trichloroethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,1,2,2-Tetrachloroethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
1,1,2-Trichloroethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
1,1-Dichloroethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,1-Dichloroethene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
1,1-Dichloropropene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,3-Trichlorobenzene	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
1,2,3-Trichloropropane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
1,2,4-Trichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,2,4-Trimethylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dibromo-3-Chloropropane	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
1,2-Dibromoethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dichlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,3,5-Trimethylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50708 - 5035**

1,3-Dichlorobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,3-Dichloropropane	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
1,4-Dichlorobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,4-Dioxane	0.845	0.100	mg/kg wet	1.000		84	70-130			
1-Chlorohexane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
2,2-Dichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
2-Butanone	0.226	0.0500	mg/kg wet	0.2500		90	70-130			
2-Chlorotoluene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
2-Hexanone	0.223	0.0500	mg/kg wet	0.2500		89	70-130			
4-Chlorotoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.242	0.0500	mg/kg wet	0.2500		97	70-130			
Acetone	0.242	0.0500	mg/kg wet	0.2500		97	70-130			
Benzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Bromobenzene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
Bromochloromethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
Bromodichloromethane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromoform	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			
Bromomethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Carbon Disulfide	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Carbon Tetrachloride	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
Chlorobenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Chloroethane	0.0509	0.0100	mg/kg wet	0.05000		102	70-130			
Chloroform	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Chloromethane	0.0515	0.0100	mg/kg wet	0.05000		103	70-130			
cis-1,2-Dichloroethene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
cis-1,3-Dichloropropene	0.0409	0.0050	mg/kg wet	0.05000		82	70-130			
Dibromochloromethane	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
Dibromomethane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Diethyl Ether	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Di-isopropyl ether	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
Ethyl tertiary-butyl ether	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Ethylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
Hexachlorobutadiene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Isopropylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Methyl tert-Butyl Ether	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
Methylene Chloride	0.0496	0.0250	mg/kg wet	0.05000		99	70-130			
Naphthalene	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
n-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
sec-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Styrene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
tert-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
Tertiary-amyl methyl ether	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50708 - 5035**

Tetrachloroethene	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
Tetrahydrofuran	0.0429	0.0050	mg/kg wet	0.05000		86	70-130			
Toluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
trans-1,2-Dichloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,3-Dichloropropene	0.0386	0.0050	mg/kg wet	0.05000		77	70-130			
Trichloroethene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Trichlorofluoromethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Vinyl Acetate	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Vinyl Chloride	0.0528	0.0100	mg/kg wet	0.05000		106	70-130			
Xylene O	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0968	0.0100	mg/kg wet	0.1000		97	70-130			
Xylenes (Total)	0.144	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0496		mg/kg wet	0.05000		99	70-130			
Surrogate: Dibromofluoromethane	0.0503		mg/kg wet	0.05000		101	70-130			
Surrogate: Toluene-d8	0.0463		mg/kg wet	0.05000		93	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
1,1,1-Trichloroethane	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	8	25	
1,1,2,2-Tetrachloroethane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
1,1,2-Trichloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
1,1-Dichloroethane	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
1,1-Dichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
1,1-Dichloropropene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
1,2,3-Trichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	11	25	
1,2,3-Trichloropropane	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	9	25	
1,2,4-Trichlorobenzene	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	8	25	
1,2,4-Trimethylbenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
1,2-Dibromo-3-Chloropropane	0.0412	0.0050	mg/kg wet	0.05000		82	70-130	8	25	
1,2-Dibromoethane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	10	25	
1,2-Dichlorobenzene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
1,2-Dichloroethane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
1,2-Dichloropropane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130	9	25	
1,3,5-Trimethylbenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	7	25	
1,3-Dichlorobenzene	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
1,3-Dichloropropane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
1,4-Dichlorobenzene	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	7	25	
1,4-Dioxane	0.927	0.100	mg/kg wet	1.000		93	70-130	9	20	
1-Chlorohexane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	8	25	
2,2-Dichloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	9	25	
2-Butanone	0.247	0.0500	mg/kg wet	0.2500		99	70-130	9	25	
2-Chlorotoluene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
2-Hexanone	0.244	0.0500	mg/kg wet	0.2500		98	70-130	9	25	
4-Chlorotoluene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
4-Isopropyltoluene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	9	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
 Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50708 - 5035**

4-Methyl-2-Pentanone	0.264	0.0500	mg/kg wet	0.2500		106	70-130	9	25	
Acetone	0.268	0.0500	mg/kg wet	0.2500		107	70-130	10	25	
Benzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
Bromobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	9	25	
Bromochloromethane	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	11	25	
Bromodichloromethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	9	25	
Bromoform	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	8	25	
Bromomethane	0.0542	0.0100	mg/kg wet	0.05000		108	70-130	7	25	
Carbon Disulfide	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Carbon Tetrachloride	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
Chloroethane	0.0563	0.0100	mg/kg wet	0.05000		113	70-130	10	25	
Chloroform	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	9	25	
Chloromethane	0.0560	0.0100	mg/kg wet	0.05000		112	70-130	8	25	
cis-1,2-Dichloroethene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	9	25	
cis-1,3-Dichloropropene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	9	25	
Dibromochloromethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
Dibromomethane	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	9	25	
Dichlorodifluoromethane	0.0546	0.0100	mg/kg wet	0.05000		109	70-130	8	25	
Diethyl Ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	8	25	
Di-isopropyl ether	0.0586	0.0050	mg/kg wet	0.05000		117	70-130	9	25	
Ethyl tertiary-butyl ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Ethylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
Hexachlorobutadiene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	9	25	
Isopropylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Methyl tert-Butyl Ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Methylene Chloride	0.0529	0.0250	mg/kg wet	0.05000		106	70-130	6	25	
Naphthalene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	10	25	
n-Butylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
n-Propylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	8	25	
sec-Butylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	9	25	
Styrene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
tert-Butylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	8	25	
Tertiary-amyl methyl ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	9	25	
Tetrachloroethene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
Toluene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	9	25	
trans-1,2-Dichloroethene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
trans-1,3-Dichloropropene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130	9	25	
Trichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	10	25	
Trichlorofluoromethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	8	25	
Vinyl Acetate	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
Vinyl Chloride	0.0575	0.0100	mg/kg wet	0.05000		115	70-130	9	25	
Xylene O	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130	7	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
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ESS Laboratory Work Order: 1511124

**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 CK50708 - [CALC]**

Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0466		mg/kg wet	0.05000		93	70-130			
Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0503		mg/kg wet	0.05000		101	70-130			
Surrogate: Toluene-d8	0.0466		mg/kg wet	0.05000		93	70-130			

**Batch CK50935 - 5035**

<b>Blank</b>										
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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**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 CK50935 - 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	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0524		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0474		mg/kg wet	0.05000		95	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			





*CERTIFICATE OF ANALYSIS*

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**Quality Control Data**

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

**Batch CK50935 - 5035**

1,1-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
1,2,3-Trichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichloropropane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0382	0.0050	mg/kg wet	0.05000		76	70-130			
1,2-Dibromoethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dichloroethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dichloropropane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,3,5-Trimethylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
1,3-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,3-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,4-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,4-Dioxane	0.915	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
2,2-Dichloropropane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
2-Butanone	0.242	0.0500	mg/kg wet	0.2500		97	70-130			
2-Chlorotoluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
2-Hexanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
4-Isopropyltoluene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
4-Methyl-2-Pentanone	0.263	0.0500	mg/kg wet	0.2500		105	70-130			
Acetone	0.253	0.0500	mg/kg wet	0.2500		101	70-130			
Benzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
Bromobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Bromochloromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Bromodichloromethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Bromoform	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromomethane	0.0595	0.0100	mg/kg wet	0.05000		119	70-130			
Carbon Disulfide	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Carbon Tetrachloride	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0650	0.0100	mg/kg wet	0.05000		130	70-130			
Chloroform	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Chloromethane	0.0573	0.0100	mg/kg wet	0.05000		115	70-130			
cis-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
cis-1,3-Dichloropropene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Dibromochloromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Dibromomethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0593	0.0100	mg/kg wet	0.05000		119	70-130			
Diethyl Ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Di-isopropyl ether	0.0576	0.0050	mg/kg wet	0.05000		115	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
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ESS Laboratory Work Order: 1511124

**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 CK50935 - 5035**

Ethyl tertiary-butyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Methyl tert-Butyl Ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Methylene Chloride	0.0532	0.0250	mg/kg wet	0.05000		106	70-130			
Naphthalene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
n-Butylbenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
n-Propylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
sec-Butylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
tert-Butylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Tertiary-amyl methyl ether	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
Tetrachloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrahydrofuran	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Toluene	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
trans-1,2-Dichloroethene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Vinyl Acetate	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Vinyl Chloride	0.0624	0.0100	mg/kg wet	0.05000		125	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0453		mg/kg wet	0.05000		91	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
1,1,1-Trichloroethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
1,1,2-Trichloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,1-Dichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
1,1-Dichloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
1,1-Dichloropropene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
1,2,3-Trichloropropane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	0.09	25	
1,2,4-Trichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,2,4-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
1,2-Dibromo-3-Chloropropane	0.0385	0.0050	mg/kg wet	0.05000		77	70-130	0.7	25	
1,2-Dibromoethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,2-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
1,2-Dichloroethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	7	25	



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ESS Laboratory Work Order: 1511124

**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 CK50935 - 5035**

1,2-Dichloropropane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,3,5-Trimethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
1,3-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,3-Dichloropropane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,4-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,4-Dioxane	0.893	0.100	mg/kg wet	1.000		89	70-130	2	20	
1-Chlorohexane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
2,2-Dichloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		93	70-130	3	25	
2-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
2-Hexanone	0.237	0.0500	mg/kg wet	0.2500		95	70-130	3	25	
4-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
4-Isopropyltoluene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	1	25	
Acetone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	3	25	
Benzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
Bromobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Bromochloromethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
Bromodichloromethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
Bromoform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Bromomethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130	7	25	
Carbon Disulfide	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Carbon Tetrachloride	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Chlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloroethane	0.0548	0.0100	mg/kg wet	0.05000		110	70-130	17	25	
Chloroform	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Chloromethane	0.0539	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
cis-1,2-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
cis-1,3-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130	7	25	
Dibromochloromethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	3	25	
Dibromomethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130	7	25	
Diethyl Ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
Di-isopropyl ether	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Ethyl tertiary-butyl ether	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Ethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Hexachlorobutadiene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Isopropylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Methyl tert-Butyl Ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
Methylene Chloride	0.0482	0.0250	mg/kg wet	0.05000		96	70-130	10	25	
Naphthalene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.2	25	
n-Butylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
n-Propylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
sec-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Styrene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	25	



*CERTIFICATE OF ANALYSIS*

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ESS Laboratory Work Order: 1511124

**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 CK50935 - 5035**

tert-Butylbenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Tertiary-amyl methyl ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	6	25	
Tetrachloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
trans-1,3-Dichloropropene	0.0398	0.0050	mg/kg wet	0.05000		80	70-130	6	25	
Trichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
Trichlorofluoromethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
Vinyl Acetate	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Vinyl Chloride	0.0580	0.0100	mg/kg wet	0.05000		116	70-130	7	25	
Xylene O	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130	4	25	
Xylenes (Total)	0.149	0.0100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0465</i>		mg/kg wet	<i>0.05000</i>		<i>93</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0480</i>		mg/kg wet	<i>0.05000</i>		<i>96</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0501</i>		mg/kg wet	<i>0.05000</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0448</i>		mg/kg wet	<i>0.05000</i>		<i>90</i>	<i>70-130</i>			

8100M Total Petroleum Hydrocarbons

**Batch CK50514 - 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>4.47</i>		mg/kg wet	<i>5.000</i>		<i>89</i>	<i>40-140</i>			

**LCS**

Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140			
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	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		98	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140			



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**Quality Control Data**

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**8100M Total Petroleum Hydrocarbons**

**Batch CK50514 - 3546**

Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		92	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		91	40-140			
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		88	40-140			

*Surrogate: O-Terphenyl*

4.61 mg/kg wet 5.000 92 40-140

**LCS Dup**

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140	5	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		82	40-140	10	25	
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		95	40-140	3	25	
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		95	40-140	4	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		98	40-140	5	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	6	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		93	40-140	5	25	
Total Petroleum Hydrocarbons	33.2	37.5	mg/kg wet	35.00		95	40-140	4	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	4	25	

*Surrogate: O-Terphenyl*

4.47 mg/kg wet 5.000 89 40-140

**8270D Semi-Volatile Organic Compounds**

**Batch CK50516 - 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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**Quality Control Data**

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8270D Semi-Volatile Organic Compounds

**Batch CK50516 - 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*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50516 - 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	2.62		mg/kg wet	3.333		79	30-130			
Surrogate: 2,4,6-Tribromophenol	3.50		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Chlorophenol-d4	3.48		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.06		mg/kg wet	5.000		61	30-130			
Surrogate: Nitrobenzene-d5	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: Phenol-d6	3.42		mg/kg wet	5.000		68	30-130			
Surrogate: p-Terphenyl-d14	2.99		mg/kg wet	3.333		90	30-130			

**LCS**

1,1-Biphenyl	2.41	0.333	mg/kg wet	3.333		72	40-140			
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.44	0.333	mg/kg wet	3.333		73	40-140			
1,3-Dichlorobenzene	2.30	0.333	mg/kg wet	3.333		69	40-140			
1,4-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
2,3,4,6-Tetrachlorophenol	2.68	1.67	mg/kg wet	3.333		80	30-130			
2,4,5-Trichlorophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
2,4,6-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2,4-Dichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4-Dimethylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dinitrophenol	2.28	1.67	mg/kg wet	3.333		68	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Chloronaphthalene	2.23	0.333	mg/kg wet	3.333		67	40-140			
2-Chlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2-Methylnaphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2-Methylphenol	2.51	0.333	mg/kg wet	3.333		75	30-130			
2-Nitroaniline	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.42	0.333	mg/kg wet	3.333		73	30-130			
3,3'-Dichlorobenzidine	2.91	0.667	mg/kg wet	3.333		87	40-140			
3+4-Methylphenol	5.09	0.667	mg/kg wet	6.667		76	30-130			
3-Nitroaniline	2.59	0.333	mg/kg wet	3.333		78	40-140			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50516 - 3546**

4,6-Dinitro-2-Methylphenol	2.51	1.67	mg/kg wet	3.333		75	30-130			
4-Bromophenyl-phenylether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130			
4-Chloroaniline	2.17	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.72	0.333	mg/kg wet	3.333		82	40-140			
4-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
4-Nitrophenol	2.40	1.67	mg/kg wet	3.333		72	30-130			
Acenaphthene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Acenaphthylene	2.58	0.333	mg/kg wet	3.333		77	40-140			
Acetophenone	2.53	0.667	mg/kg wet	3.333		76	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.68	0.333	mg/kg wet	3.333		80	40-140			
Benzo(a)anthracene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Benzo(a)pyrene	3.07	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140			
Benzo(g,h,i)perylene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.73	1.67	mg/kg wet	3.333		82	40-140			
Benzyl Alcohol	2.25	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethoxy)methane	2.47	0.333	mg/kg wet	3.333		74	40-140			
bis(2-Chloroethyl)ether	2.19	0.333	mg/kg wet	3.333		66	40-140			
bis(2-chloroisopropyl)Ether	2.38	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Ethylhexyl)phthalate	3.19	0.333	mg/kg wet	3.333		96	40-140			
Butylbenzylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140			
Carbazole	3.06	0.333	mg/kg wet	3.333		92	40-140			
Chrysene	3.10	0.167	mg/kg wet	3.333		93	40-140			
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		95	40-140			
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140			
Diethylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140			
Dimethylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140			
Di-n-butylphthalate	3.34	0.333	mg/kg wet	3.333		100	40-140			
Di-n-octylphthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Fluorene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Hexachlorobenzene	2.60	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorocyclopentadiene	2.10	1.67	mg/kg wet	3.333		63	40-140			
Hexachloroethane	2.39	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	3.14	0.333	mg/kg wet	3.333		94	40-140			
Isophorone	2.30	0.333	mg/kg wet	3.333		69	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.32	0.333	mg/kg wet	3.333		70	40-140			
N-Nitrosodimethylamine	1.60	0.333	mg/kg wet	3.333		48	40-140			
N-Nitroso-Di-n-Propylamine	2.45	0.333	mg/kg wet	3.333		74	40-140			





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50516 - 3546**

N-nitrosodiphenylamine	2.79	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		75	30-130			
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Phenol	2.10	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Pyridine	1.35	1.67	mg/kg wet	3.333		41	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.53		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	3.83		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.29		mg/kg wet	5.000		66	30-130			
Surrogate: 2-Fluorobiphenyl	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2-Fluorophenol	2.94		mg/kg wet	5.000		59	30-130			
Surrogate: Nitrobenzene-d5	2.36		mg/kg wet	3.333		71	30-130			
Surrogate: Phenol-d6	3.17		mg/kg wet	5.000		63	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			

**LCS Dup**

1,1-Biphenyl	2.43	0.333	mg/kg wet	3.333		73	40-140	0.7	30	
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	2	30	
1,2-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140	1	30	
1,3-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	0.9	30	
1,4-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	2	30	
2,3,4,6-Tetrachlorophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	6	30	
2,4,5-Trichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130	4	30	
2,4,6-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130	2	30	
2,4-Dichlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	1	30	
2,4-Dimethylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130	0.3	30	
2,4-Dinitrophenol	2.29	1.67	mg/kg wet	3.333		69	30-130	0.6	30	
2,4-Dinitrotoluene	2.73	0.333	mg/kg wet	3.333		82	40-140	7	30	
2,6-Dinitrotoluene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
2-Chloronaphthalene	2.25	0.333	mg/kg wet	3.333		68	40-140	0.8	30	
2-Chlorophenol	2.28	0.333	mg/kg wet	3.333		68	30-130	2	30	
2-Methylnaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	0.6	30	
2-Methylphenol	2.62	0.333	mg/kg wet	3.333		79	30-130	4	30	
2-Nitroaniline	2.17	0.333	mg/kg wet	3.333		65	40-140	5	30	
2-Nitrophenol	2.44	0.333	mg/kg wet	3.333		73	30-130	0.6	30	
3,3'-Dichlorobenzidine	2.78	0.667	mg/kg wet	3.333		83	40-140	5	30	
3+4-Methylphenol	5.37	0.667	mg/kg wet	6.667		81	30-130	5	30	
3-Nitroaniline	2.46	0.333	mg/kg wet	3.333		74	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.40	1.67	mg/kg wet	3.333		72	30-130	4	30	
4-Bromophenyl-phenylether	2.51	0.333	mg/kg wet	3.333		75	40-140	11	30	
4-Chloro-3-Methylphenol	2.73	0.333	mg/kg wet	3.333		82	30-130	4	30	
4-Chloroaniline	2.21	0.667	mg/kg wet	3.333		66	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.60	0.333	mg/kg wet	3.333		78	40-140	5	30	
4-Nitroaniline	2.56	0.333	mg/kg wet	3.333		77	40-140	4	30	
4-Nitrophenol	2.30	1.67	mg/kg wet	3.333		69	30-130	4	30	
Acenaphthene	2.58	0.333	mg/kg wet	3.333		77	40-140	1	30	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50516 - 3546**

Acenaphthylene	2.53	0.333	mg/kg wet	3.333		76	40-140	2	30	
Acetophenone	2.63	0.667	mg/kg wet	3.333		79	40-140	4	30	
Aniline	1.98	0.667	mg/kg wet	3.333		60	40-140	6	30	
Anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140	7	30	
Azobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	8	30	
Benzo(a)anthracene	2.88	0.333	mg/kg wet	3.333		86	40-140	7	30	
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140	7	30	
Benzo(b)fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	6	30	
Benzo(g,h,i)perylene	3.03	0.333	mg/kg wet	3.333		91	40-140	6	30	
Benzo(k)fluoranthene	2.64	0.333	mg/kg wet	3.333		79	40-140	8	30	
Benzoic Acid	2.74	1.67	mg/kg wet	3.333		82	40-140	0.2	30	
Benzyl Alcohol	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
bis(2-Chloroethyl)ether	2.23	0.333	mg/kg wet	3.333		67	40-140	2	30	
bis(2-chloroisopropyl)Ether	2.43	0.333	mg/kg wet	3.333		73	40-140	2	30	
bis(2-Ethylhexyl)phthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	9	30	
Carbazole	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Chrysene	2.87	0.167	mg/kg wet	3.333		86	40-140	8	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	7	30	
Dibenzofuran	2.51	0.333	mg/kg wet	3.333		75	40-140	3	30	
Diethylphthalate	2.68	0.333	mg/kg wet	3.333		80	40-140	7	30	
Dimethylphthalate	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
Di-n-butylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	7	30	
Di-n-octylphthalate	2.85	0.333	mg/kg wet	3.333		86	40-140	12	30	
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
Fluorene	2.63	0.333	mg/kg wet	3.333		79	40-140	5	30	
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140	8	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	2	30	
Hexachlorocyclopentadiene	2.22	1.67	mg/kg wet	3.333		66	40-140	6	30	
Hexachloroethane	2.42	0.333	mg/kg wet	3.333		73	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	2.94	0.333	mg/kg wet	3.333		88	40-140	7	30	
Isophorone	2.30	0.333	mg/kg wet	3.333		69	40-140	0.4	30	
Naphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140	1	30	
Nitrobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	0.7	30	
N-Nitrosodimethylamine	1.64	0.333	mg/kg wet	3.333		49	40-140	3	30	
N-Nitroso-Di-n-Propylamine	2.57	0.333	mg/kg wet	3.333		77	40-140	5	30	
N-nitrosodiphenylamine	2.55	0.333	mg/kg wet	3.333		76	40-140	9	30	
Pentachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	6	30	
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140	7	30	
Phenol	2.16	0.333	mg/kg wet	3.333		65	30-130	3	30	
Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140	7	30	
Pyridine	1.39	1.67	mg/kg wet	3.333		42	40-140	3	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	3.54		mg/kg wet	5.000		71	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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 CK50516 - 3546**

<i>Surrogate: 2-Chlorophenol-d4</i>	3.38		mg/kg wet	5.000		68	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.51		mg/kg wet	3.333		75	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.00		mg/kg wet	5.000		60	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.33		mg/kg wet	3.333		70	30-130			
<i>Surrogate: Phenol-d6</i>	3.29		mg/kg wet	5.000		66	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.83		mg/kg wet	3.333		85	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.8 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- ICV+ Initial Calibration Verification recovery is above upper control limit (ICV+).
- IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B- Blank Spike recovery is 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511124

**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](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](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](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: 15110124  
 Date Project Due: 11/12/15  
 Days For Project: 5 Day

**Items to be checked upon receipt:**

- |  |                               |   |   |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present?                | <input type="checkbox"/> * No | 10. Are the samples properly preserved?   | <input type="checkbox"/> Yes  |
| Air No.:                                     |                               | 11. Proper sample containers used?        | <input type="checkbox"/> Yes  |
| 2. Were Custody Seals Present?               | <input type="checkbox"/> No   | 12. Any air bubbles in the VOA vials?     | <input type="checkbox"/> N/A  |
| 3. Were Custody Seals Intact?                | <input type="checkbox"/> N/A  | 13. Holding times exceeded?               | <input type="checkbox"/> No   |
| 4. Is Radiation count < 100 CPM?             | <input type="checkbox"/> Yes  | 14. Sufficient sample volumes?            | <input type="checkbox"/> Yes  |
| 5. Is a cooler present?                      | <input type="checkbox"/> Yes  | 15. Any Subcontracting needed?            | <input type="checkbox"/> No   |
| Cooler Temp: <u>1.9</u>                      |                               | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Iced With: <u>Icepacks</u> <u>JE 11/5/15</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 @ 2020 JE 11/5/15

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	500 ml Plastic	1	NP

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

Date/Time: 11/5/15 1937  
 Date/Time: 11/5/15 2017

ESS Laboratory

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

CHAIN OF CUSTODY

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

Project # 74-15-0002.134  
Project Name Textron Providence  
Address 500 Harrison Avenue, Suite 4R  
Zip Code 02118 PO #

Company Name Charter Environmental  
Contact Person Paul J. Leofanti, Jr.  
City Boston State MA  
Telephone Number (857) 246-6812 FAX Number  
ESS Lab ID Collection Date Collection Time Sample Type Sample Matrix Sample ID  
1 11/5/15 1330 Grab Soil Material S&S Loam F

ESS Lab # 1511124

Reporting Limits RI DEM RDEC  Excel

Electronic Deliverables  Data Checker  Other (Please Specify ->)

Analysis		VOC	VOC Low Level	SVOC	RORA 8	TPH				
PH: Corrosivity 9045		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		J	V	V	J	J	J	J	J	J
V-MaJ	S-Sterile	10	7	7	10	10	10	10	10	10
		1	1	6	10	1	1	1	1	1
		1	1	1	2	1				
Number of Containers: 1 1 1 2 1										

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

Laboratory Use Only  
Sampled by: M. Sheehan-Thielsch

Cooler Present: YES  Drop Off  Pick Up  
Seals Intact: No  Technician Hours: 1.95cc

Cooler Temperature: 1.95cc 11/5/15  
Received by (Signature, Date & Time): M... 11/5/15

Relinquished by (Signature, Date & Time): ... 1645

Relinquished by (Signature, Date & Time): ...

Relinquished by (Signature, Date & Time): ...

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



*CERTIFICATE OF ANALYSIS*

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

**RE: Textron Providence (74-15-0002.134)**  
**ESS Laboratory Work Order Number: 1511125**

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, Nov 12, 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**SAMPLE RECEIPT**

The following samples were received on November 05, 2015 for the analyses specified on the enclosed Chain of Custody Record.

**Low Level VOA vials were frozen by ESS Laboratory on November 5, 2015 at 20:20.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1511125-01	Material S and S Loam G	Soil	6010C, 7471B, 8100M, 8260B Low, 8270D, 9045



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**PROJECT NARRATIVE**

**8100M Total Petroleum Hydrocarbons**

CYK0081-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
Hexadecane (C16) (21% @ 20%)

**8270D Semi-Volatile Organic Compounds**

CYK0068-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (107% @ 80-120%), Benzoic Acid (117% @ 80-120%)

CYK0068-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).  
3+4-Methylphenol (21% @ 20%)

CYK0068-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).  
N-Nitrosodimethylamine (27% @ 20%), Pentachlorophenol (28% @ 20%), Pyridine (27% @ 20%)

CYK0068-CCV1 Initial Calibration Verification recovery is above upper control limit (ICV+).  
Benzoic Acid

CYK0088-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (101% @ 80-120%), Benzoic Acid (95% @ 80-120%)

CYK0088-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).  
Hexachlorocyclopentadiene (22% @ 20%), N-Nitrosodimethylamine (26% @ 20%), Pentachlorophenol (29% @ 20%), Pyridine (29% @ 20%)

CYK0088-CCV1 Initial Calibration Verification recovery is above upper control limit (ICV+).  
Benzoic Acid

**Total Metals**

CK50619-BSD1 Blank Spike recovery is below lower control limit (B-).  
Cadmium (71% @ 73-127%)

**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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
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	3.44 (2.54)		6010C		1	KJK	11/07/15 14:28	2.05	100	CK50619
Barium	29.2 (2.54)		6010C		1	KJK	11/07/15 14:28	2.05	100	CK50619
Cadmium	ND (0.51)		6010C		1	KJK	11/07/15 14:28	2.05	100	CK50619
Chromium	5.04 (1.02)		6010C		1	KJK	11/07/15 14:28	2.05	100	CK50619
Lead	10.3 (5.08)		6010C		1	KJK	11/07/15 14:28	2.05	100	CK50619
Mercury	0.040 (0.033)		7471B		1	PJP	11/09/15 13:15	0.63	40	CK50620
Selenium	ND (10.2)		6010C		2	KJK	11/07/15 19:53	2.05	100	CK50619
Silver	ND (0.51)		6010C		1	KJK	11/07/15 14:28	2.05	100	CK50619



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1,4-Dioxane	ND (0.0867)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
1-Chlorohexane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
2-Butanone	ND (0.0434)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
2-Chlorotoluene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
2-Hexanone	ND (0.0434)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
4-Chlorotoluene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
4-Methyl-2-Pentanone	ND (0.0434)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Acetone	ND (0.0434)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Benzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Bromobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Bromodichloromethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Bromoform	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Bromomethane	ND (0.0087)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Carbon Disulfide	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Chlorobenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Chloroethane	ND (0.0087)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Chloroform	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Chloromethane	ND (0.0087)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Dibromochloromethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Dibromomethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Dichlorodifluoromethane	ND (0.0087)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Diethyl Ether	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Di-isopropyl ether	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Ethylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Isopropylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Methylene Chloride	ND (0.0217)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Naphthalene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
n-Butylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
n-Propylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
sec-Butylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Styrene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
tert-Butylbenzene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Tetrachloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Tetrahydrofuran	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Trichloroethene	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Vinyl Acetate	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Vinyl Chloride	ND (0.0087)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Xylene O	ND (0.0043)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Xylene P,M	ND (0.0087)		8260B Low		1	11/09/15 15:37	CYK0123	CK50935
Xylenes (Total)	ND (0.0087)		8260B Low		1	11/09/15 15:37		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 20.2  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ZLC  
Prepared: 11/6/15 10:20

**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	156 (38.6)		8100M		1	11/06/15 20:50	CYK0108	CK50514
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		70 %		40-140				





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 15.7  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
1,2,4-Trichlorobenzene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
1,2-Dichlorobenzene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
1,3-Dichlorobenzene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
1,4-Dichlorobenzene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,3,4,6-Tetrachlorophenol	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,4,5-Trichlorophenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,4,6-Trichlorophenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,4-Dichlorophenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,4-Dimethylphenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,4-Dinitrophenol	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,4-Dinitrotoluene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2,6-Dinitrotoluene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2-Chloronaphthalene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2-Chlorophenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2-Methylnaphthalene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2-Methylphenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2-Nitroaniline	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
2-Nitrophenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
3,3'-Dichlorobenzidine	ND (0.663)		8270D		1	11/06/15 14:15	CYK0088	CK50516
3+4-Methylphenol	ND (0.663)		8270D		1	11/06/15 14:15	CYK0088	CK50516
3-Nitroaniline	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4,6-Dinitro-2-Methylphenol	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4-Bromophenyl-phenylether	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4-Chloro-3-Methylphenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4-Chloroaniline	ND (0.663)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4-Chloro-phenyl-phenyl ether	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4-Nitroaniline	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
4-Nitrophenol	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Acenaphthene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Acenaphthylene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Acetophenone	ND (0.663)		8270D		1	11/06/15 14:15	CYK0088	CK50516



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 15.7  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.663)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Anthracene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Azobenzene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzo(a)anthracene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzo(a)pyrene	ND (0.166)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzo(b)fluoranthene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzo(g,h,i)perylene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzo(k)fluoranthene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzoic Acid	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Benzyl Alcohol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
bis(2-Chloroethoxy)methane	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
bis(2-Chloroethyl)ether	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
bis(2-chloroisopropyl)Ether	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
bis(2-Ethylhexyl)phthalate	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Butylbenzylphthalate	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Carbazole	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Chrysene	ND (0.166)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Dibenzo(a,h)Anthracene	ND (0.166)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Dibenzofuran	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Diethylphthalate	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Dimethylphthalate	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Di-n-butylphthalate	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Di-n-octylphthalate	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Fluoranthene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Fluorene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Hexachlorobenzene	ND (0.166)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Hexachlorobutadiene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Hexachlorocyclopentadiene	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Hexachloroethane	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Indeno(1,2,3-cd)Pyrene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Isophorone	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Naphthalene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96  
Initial Volume: 15.7  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: JXS  
Prepared: 11/6/15 10:30

**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 (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
N-Nitrosodimethylamine	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
N-Nitroso-Di-n-Propylamine	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
N-nitrosodiphenylamine	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Pentachlorophenol	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Phenanthrene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Phenol	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Pyrene	ND (0.331)		8270D		1	11/06/15 14:15	CYK0088	CK50516
Pyridine	ND (1.66)		8270D		1	11/06/15 14:15	CYK0088	CK50516

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>43 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>49 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>40 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>44 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>35 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>42 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>39 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>56 %</i>		<i>30-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence  
Client Sample ID: Material S and S Loam G  
Date Sampled: 11/05/15 13:40  
Percent Solids: 96

ESS Laboratory Work Order: 1511125  
ESS Laboratory Sample ID: 1511125-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Corrosivity (pH)	5.00 (N/A)		9045		1	MJV	11/06/15 16:42	S.U.	CK50611
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.9 °C.								



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50619 - 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	48.3	10.0	mg/kg wet	52.30	92	80-120
Barium	122	10.0	mg/kg wet	145.0	84	80-120
Cadmium	56.4	2.00	mg/kg wet	71.60	79	73-127
Chromium	73.5	4.00	mg/kg wet	88.50	83	80-120
Selenium	68.3	20.0	mg/kg wet	81.10	84	80-120
Silver	103	2.00	mg/kg wet	114.0	91	80-120

**LCS**

Lead	109	19.6	mg/kg wet	133.0	82	80-120
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**LCS Dup**

Arsenic	59.3	9.80	mg/kg wet	52.30	113	80-120	20	20	
Barium	134	9.80	mg/kg wet	145.0	92	80-120	9	20	
Cadmium	50.8	1.96	mg/kg wet	71.60	71	73-127	10	20	B-
Chromium	76.7	3.92	mg/kg wet	88.50	87	80-120	4	20	
Selenium	74.3	19.6	mg/kg wet	81.10	92	80-120	8	20	
Silver	113	1.96	mg/kg wet	114.0	99	80-120	9	20	

**LCS Dup**

Lead	108	19.6	mg/kg wet	133.0	81	80-120	0.3	20	
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**Batch CK50620 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	8.57	1.83	mg/kg wet	9.700	88	80-120
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**LCS Dup**

Mercury	8.80	1.94	mg/kg wet	9.700	91	80-120	3	20	
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**5035/8260B Volatile Organic Compounds / Low Level**

**Batch CK50935 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50935 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50935 - 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	0.0498		mg/kg wet	0.05000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0524		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0474		mg/kg wet	0.05000		95	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1,2-Trichloroethane	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloroethane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130			
1,1-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,1-Dichloropropene	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
1,2,3-Trichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,2,3-Trichloropropane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
1,2,4-Trichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dibromo-3-Chloropropane	0.0382	0.0050	mg/kg wet	0.05000		76	70-130			
1,2-Dibromoethane	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichlorobenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dichloroethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dichloropropane	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
1,3,5-Trimethylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50935 - 5035**

1,3-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,3-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,4-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
1,4-Dioxane	0.915	0.100	mg/kg wet	1.000		92	70-130			
1-Chlorohexane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
2,2-Dichloropropane	0.0538	0.0050	mg/kg wet	0.05000		108	70-130			
2-Butanone	0.242	0.0500	mg/kg wet	0.2500		97	70-130			
2-Chlorotoluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
2-Hexanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
4-Chlorotoluene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
4-Isopropyltoluene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
4-Methyl-2-Pentanone	0.263	0.0500	mg/kg wet	0.2500		105	70-130			
Acetone	0.253	0.0500	mg/kg wet	0.2500		101	70-130			
Benzene	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
Bromobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Bromochloromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Bromodichloromethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Bromoform	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromomethane	0.0595	0.0100	mg/kg wet	0.05000		119	70-130			
Carbon Disulfide	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Carbon Tetrachloride	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Chlorobenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Chloroethane	0.0650	0.0100	mg/kg wet	0.05000		130	70-130			
Chloroform	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Chloromethane	0.0573	0.0100	mg/kg wet	0.05000		115	70-130			
cis-1,2-Dichloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
cis-1,3-Dichloropropene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Dibromochloromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Dibromomethane	0.0525	0.0050	mg/kg wet	0.05000		105	70-130			
Dichlorodifluoromethane	0.0593	0.0100	mg/kg wet	0.05000		119	70-130			
Diethyl Ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Di-isopropyl ether	0.0576	0.0050	mg/kg wet	0.05000		115	70-130			
Ethyl tertiary-butyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Methyl tert-Butyl Ether	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Methylene Chloride	0.0532	0.0250	mg/kg wet	0.05000		106	70-130			
Naphthalene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
n-Butylbenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
n-Propylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
sec-Butylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Styrene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
tert-Butylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Tertiary-amyl methyl ether	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
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ESS Laboratory Work Order: 1511125

**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 CK50935 - 5035**

Tetrachloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrahydrofuran	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
Toluene	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
trans-1,2-Dichloroethene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0423	0.0050	mg/kg wet	0.05000		85	70-130			
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Vinyl Acetate	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Vinyl Chloride	0.0624	0.0100	mg/kg wet	0.05000		125	70-130			
Xylene O	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130			
Xylenes (Total)	0.155	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0488		mg/kg wet	0.05000		98	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0453		mg/kg wet	0.05000		91	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
1,1,1-Trichloroethane	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
1,1,2-Trichloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,1-Dichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
1,1-Dichloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
1,1-Dichloropropene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	6	25	
1,2,3-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	1	25	
1,2,3-Trichloropropane	0.0424	0.0050	mg/kg wet	0.05000		85	70-130	0.09	25	
1,2,4-Trichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,2,4-Trimethylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
1,2-Dibromo-3-Chloropropane	0.0385	0.0050	mg/kg wet	0.05000		77	70-130	0.7	25	
1,2-Dibromoethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,2-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
1,2-Dichloroethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
1,2-Dichloropropane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
1,3,5-Trimethylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
1,3-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,3-Dichloropropane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,4-Dichlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,4-Dioxane	0.893	0.100	mg/kg wet	1.000		89	70-130	2	20	
1-Chlorohexane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	4	25	
2,2-Dichloropropane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
2-Butanone	0.234	0.0500	mg/kg wet	0.2500		93	70-130	3	25	
2-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
2-Hexanone	0.237	0.0500	mg/kg wet	0.2500		95	70-130	3	25	
4-Chlorotoluene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
4-Isopropyltoluene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	4	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50935 - 5035**

4-Methyl-2-Pentanone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	1	25	
Acetone	0.260	0.0500	mg/kg wet	0.2500		104	70-130	3	25	
Benzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	8	25	
Bromobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Bromochloromethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	6	25	
Bromodichloromethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
Bromoform	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Bromomethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130	7	25	
Carbon Disulfide	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Carbon Tetrachloride	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Chlorobenzene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	4	25	
Chloroethane	0.0548	0.0100	mg/kg wet	0.05000		110	70-130	17	25	
Chloroform	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Chloromethane	0.0539	0.0100	mg/kg wet	0.05000		108	70-130	6	25	
cis-1,2-Dichloroethene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
cis-1,3-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130	7	25	
Dibromochloromethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	3	25	
Dibromomethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	6	25	
Dichlorodifluoromethane	0.0553	0.0100	mg/kg wet	0.05000		111	70-130	7	25	
Diethyl Ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
Di-isopropyl ether	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	8	25	
Ethyl tertiary-butyl ether	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Ethylbenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Hexachlorobutadiene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Isopropylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Methyl tert-Butyl Ether	0.0440	0.0050	mg/kg wet	0.05000		88	70-130	5	25	
Methylene Chloride	0.0482	0.0250	mg/kg wet	0.05000		96	70-130	10	25	
Naphthalene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	0.2	25	
n-Butylbenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
n-Propylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
sec-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Styrene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
tert-Butylbenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Tertiary-amyl methyl ether	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	6	25	
Tetrachloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Tetrahydrofuran	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	7	25	
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
trans-1,3-Dichloropropene	0.0398	0.0050	mg/kg wet	0.05000		80	70-130	6	25	
Trichloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
Trichlorofluoromethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
Vinyl Acetate	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Vinyl Chloride	0.0580	0.0100	mg/kg wet	0.05000		116	70-130	7	25	
Xylene O	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
Xylene P,M	0.100	0.0100	mg/kg wet	0.1000		100	70-130	4	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 151125

**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 CK50935 - [CALC]**

Xylenes (Total)	0.149	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0465		mg/kg wet	0.05000		93	70-130			
Surrogate: 4-Bromofluorobenzene	0.0480		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0448		mg/kg wet	0.05000		90	70-130			

8100M Total Petroleum Hydrocarbons

**Batch CK50514 - 3546**

**Blank**

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

Surrogate: O-Terphenyl	4.47		mg/kg wet	5.000		89	40-140			
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**LCS**

Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140			
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	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		98	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		92	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		91	40-140			
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Total Petroleum Hydrocarbons	34.7	37.5	mg/kg wet	35.00		99	40-140			
Triacotane (C30)	2.2	0.2	mg/kg wet	2.500		88	40-140			

Surrogate: O-Terphenyl	4.61		mg/kg wet	5.000		92	40-140			
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**LCS Dup**

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140	5	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50514 - 3546**

Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		82	40-140	10	25	
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		95	40-140	3	25	
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		94	40-140	3	25	
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		95	40-140	4	25	
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		98	40-140	5	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	6	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		93	40-140	5	25	
Total Petroleum Hydrocarbons	33.2	37.5	mg/kg wet	35.00		95	40-140	4	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	4	25	

Surrogate: O-Terphenyl 4.47 mg/kg wet 5.000 89 40-140

**8270D Semi-Volatile Organic Compounds**

**Batch CK50516 - 3546**

**Blank**

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



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50516 - 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50516 - 3546**

Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.62		mg/kg wet	3.333		79	30-130			
Surrogate: 2,4,6-Tribromophenol	3.50		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Chlorophenol-d4	3.48		mg/kg wet	5.000		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	3.06		mg/kg wet	5.000		61	30-130			
Surrogate: Nitrobenzene-d5	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: Phenol-d6	3.42		mg/kg wet	5.000		68	30-130			
Surrogate: p-Terphenyl-d14	2.99		mg/kg wet	3.333		90	30-130			

**LCS**

1,1-Biphenyl	2.41	0.333	mg/kg wet	3.333		72	40-140			
1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.44	0.333	mg/kg wet	3.333		73	40-140			
1,3-Dichlorobenzene	2.30	0.333	mg/kg wet	3.333		69	40-140			
1,4-Dichlorobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140			
2,3,4,6-Tetrachlorophenol	2.68	1.67	mg/kg wet	3.333		80	30-130			
2,4,5-Trichlorophenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
2,4,6-Trichlorophenol	2.77	0.333	mg/kg wet	3.333		83	30-130			
2,4-Dichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4-Dimethylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130			
2,4-Dinitrophenol	2.28	1.67	mg/kg wet	3.333		68	30-130			
2,4-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.73	0.333	mg/kg wet	3.333		82	40-140			
2-Chloronaphthalene	2.23	0.333	mg/kg wet	3.333		67	40-140			
2-Chlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2-Methylnaphthalene	2.43	0.333	mg/kg wet	3.333		73	40-140			
2-Methylphenol	2.51	0.333	mg/kg wet	3.333		75	30-130			
2-Nitroaniline	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Nitrophenol	2.42	0.333	mg/kg wet	3.333		73	30-130			
3,3'-Dichlorobenzidine	2.91	0.667	mg/kg wet	3.333		87	40-140			
3+4-Methylphenol	5.09	0.667	mg/kg wet	6.667		76	30-130			
3-Nitroaniline	2.59	0.333	mg/kg wet	3.333		78	40-140			
4,6-Dinitro-2-Methylphenol	2.51	1.67	mg/kg wet	3.333		75	30-130			
4-Bromophenyl-phenylether	2.79	0.333	mg/kg wet	3.333		84	40-140			
4-Chloro-3-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130			
4-Chloroaniline	2.17	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.72	0.333	mg/kg wet	3.333		82	40-140			
4-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140			
4-Nitrophenol	2.40	1.67	mg/kg wet	3.333		72	30-130			
Acenaphthene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Acenaphthylene	2.58	0.333	mg/kg wet	3.333		77	40-140			
Acetophenone	2.53	0.667	mg/kg wet	3.333		76	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.98	0.333	mg/kg wet	3.333		89	40-140			
Azobenzene	2.68	0.333	mg/kg wet	3.333		80	40-140			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50516 - 3546**

Benzo(a)anthracene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Benzo(a)pyrene	3.07	0.167	mg/kg wet	3.333		92	40-140			
Benzo(b)fluoranthene	3.13	0.333	mg/kg wet	3.333		94	40-140			
Benzo(g,h,i)perylene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzoic Acid	2.73	1.67	mg/kg wet	3.333		82	40-140			
Benzyl Alcohol	2.25	0.333	mg/kg wet	3.333		68	40-140			
bis(2-Chloroethoxy)methane	2.47	0.333	mg/kg wet	3.333		74	40-140			
bis(2-Chloroethyl)ether	2.19	0.333	mg/kg wet	3.333		66	40-140			
bis(2-chloroisopropyl)Ether	2.38	0.333	mg/kg wet	3.333		72	40-140			
bis(2-Ethylhexyl)phthalate	3.19	0.333	mg/kg wet	3.333		96	40-140			
Butylbenzylphthalate	3.23	0.333	mg/kg wet	3.333		97	40-140			
Carbazole	3.06	0.333	mg/kg wet	3.333		92	40-140			
Chrysene	3.10	0.167	mg/kg wet	3.333		93	40-140			
Dibenzo(a,h)Anthracene	3.15	0.167	mg/kg wet	3.333		95	40-140			
Dibenzofuran	2.59	0.333	mg/kg wet	3.333		78	40-140			
Diethylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140			
Dimethylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140			
Di-n-butylphthalate	3.34	0.333	mg/kg wet	3.333		100	40-140			
Di-n-octylphthalate	3.21	0.333	mg/kg wet	3.333		96	40-140			
Fluoranthene	3.09	0.333	mg/kg wet	3.333		93	40-140			
Fluorene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Hexachlorobenzene	2.60	0.167	mg/kg wet	3.333		78	40-140			
Hexachlorobutadiene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorocyclopentadiene	2.10	1.67	mg/kg wet	3.333		63	40-140			
Hexachloroethane	2.39	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	3.14	0.333	mg/kg wet	3.333		94	40-140			
Isophorone	2.30	0.333	mg/kg wet	3.333		69	40-140			
Naphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Nitrobenzene	2.32	0.333	mg/kg wet	3.333		70	40-140			
N-Nitrosodimethylamine	1.60	0.333	mg/kg wet	3.333		48	40-140			
N-Nitroso-Di-n-Propylamine	2.45	0.333	mg/kg wet	3.333		74	40-140			
N-nitrosodiphenylamine	2.79	0.333	mg/kg wet	3.333		84	40-140			
Pentachlorophenol	2.52	1.67	mg/kg wet	3.333		75	30-130			
Phenanthrene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Phenol	2.10	0.333	mg/kg wet	3.333		63	30-130			
Pyrene	3.11	0.333	mg/kg wet	3.333		93	40-140			
Pyridine	1.35	1.67	mg/kg wet	3.333		41	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.53		mg/kg wet	3.333		76	30-130			
Surrogate: 2,4,6-Tribromophenol	3.83		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.29		mg/kg wet	5.000		66	30-130			
Surrogate: 2-Fluorobiphenyl	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2-Fluorophenol	2.94		mg/kg wet	5.000		59	30-130			
Surrogate: Nitrobenzene-d5	2.36		mg/kg wet	3.333		71	30-130			
Surrogate: Phenol-d6	3.17		mg/kg wet	5.000		63	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50516 - 3546**

**LCS Dup**

1,1-Biphenyl	2.43	0.333	mg/kg wet	3.333		73	40-140	0.7	30	
1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	2	30	
1,2-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140	1	30	
1,3-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	0.9	30	
1,4-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	2	30	
2,3,4,6-Tetrachlorophenol	2.51	1.67	mg/kg wet	3.333		75	30-130	6	30	
2,4,5-Trichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130	4	30	
2,4,6-Trichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130	2	30	
2,4-Dichlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	1	30	
2,4-Dimethylphenol	2.52	0.333	mg/kg wet	3.333		76	30-130	0.3	30	
2,4-Dinitrophenol	2.29	1.67	mg/kg wet	3.333		69	30-130	0.6	30	
2,4-Dinitrotoluene	2.73	0.333	mg/kg wet	3.333		82	40-140	7	30	
2,6-Dinitrotoluene	2.56	0.333	mg/kg wet	3.333		77	40-140	6	30	
2-Chloronaphthalene	2.25	0.333	mg/kg wet	3.333		68	40-140	0.8	30	
2-Chlorophenol	2.28	0.333	mg/kg wet	3.333		68	30-130	2	30	
2-Methylnaphthalene	2.42	0.333	mg/kg wet	3.333		73	40-140	0.6	30	
2-Methylphenol	2.62	0.333	mg/kg wet	3.333		79	30-130	4	30	
2-Nitroaniline	2.17	0.333	mg/kg wet	3.333		65	40-140	5	30	
2-Nitrophenol	2.44	0.333	mg/kg wet	3.333		73	30-130	0.6	30	
3,3'-Dichlorobenzidine	2.78	0.667	mg/kg wet	3.333		83	40-140	5	30	
3+4-Methylphenol	5.37	0.667	mg/kg wet	6.667		81	30-130	5	30	
3-Nitroaniline	2.46	0.333	mg/kg wet	3.333		74	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.40	1.67	mg/kg wet	3.333		72	30-130	4	30	
4-Bromophenyl-phenylether	2.51	0.333	mg/kg wet	3.333		75	40-140	11	30	
4-Chloro-3-Methylphenol	2.73	0.333	mg/kg wet	3.333		82	30-130	4	30	
4-Chloroaniline	2.21	0.667	mg/kg wet	3.333		66	40-140	2	30	
4-Chloro-phenyl-phenyl ether	2.60	0.333	mg/kg wet	3.333		78	40-140	5	30	
4-Nitroaniline	2.56	0.333	mg/kg wet	3.333		77	40-140	4	30	
4-Nitrophenol	2.30	1.67	mg/kg wet	3.333		69	30-130	4	30	
Acenaphthene	2.58	0.333	mg/kg wet	3.333		77	40-140	1	30	
Acenaphthylene	2.53	0.333	mg/kg wet	3.333		76	40-140	2	30	
Acetophenone	2.63	0.667	mg/kg wet	3.333		79	40-140	4	30	
Aniline	1.98	0.667	mg/kg wet	3.333		60	40-140	6	30	
Anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140	7	30	
Azobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	8	30	
Benzo(a)anthracene	2.88	0.333	mg/kg wet	3.333		86	40-140	7	30	
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140	7	30	
Benzo(b)fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	6	30	
Benzo(g,h,i)perylene	3.03	0.333	mg/kg wet	3.333		91	40-140	6	30	
Benzo(k)fluoranthene	2.64	0.333	mg/kg wet	3.333		79	40-140	8	30	
Benzoic Acid	2.74	1.67	mg/kg wet	3.333		82	40-140	0.2	30	
Benzyl Alcohol	2.44	0.333	mg/kg wet	3.333		73	40-140	8	30	
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140	1	30	
bis(2-Chloroethyl)ether	2.23	0.333	mg/kg wet	3.333		67	40-140	2	30	





*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**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 CK50516 - 3546**

bis(2-chloroisopropyl)Ether	2.43	0.333	mg/kg wet	3.333		73	40-140	2	30	
bis(2-Ethylhexyl)phthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	9	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	9	30	
Carbazole	2.91	0.333	mg/kg wet	3.333		87	40-140	5	30	
Chrysene	2.87	0.167	mg/kg wet	3.333		86	40-140	8	30	
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140	7	30	
Dibenzofuran	2.51	0.333	mg/kg wet	3.333		75	40-140	3	30	
Diethylphthalate	2.68	0.333	mg/kg wet	3.333		80	40-140	7	30	
Dimethylphthalate	2.54	0.333	mg/kg wet	3.333		76	40-140	6	30	
Di-n-butylphthalate	3.13	0.333	mg/kg wet	3.333		94	40-140	7	30	
Di-n-octylphthalate	2.85	0.333	mg/kg wet	3.333		86	40-140	12	30	
Fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
Fluorene	2.63	0.333	mg/kg wet	3.333		79	40-140	5	30	
Hexachlorobenzene	2.39	0.167	mg/kg wet	3.333		72	40-140	8	30	
Hexachlorobutadiene	2.44	0.333	mg/kg wet	3.333		73	40-140	2	30	
Hexachlorocyclopentadiene	2.22	1.67	mg/kg wet	3.333		66	40-140	6	30	
Hexachloroethane	2.42	0.333	mg/kg wet	3.333		73	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	2.94	0.333	mg/kg wet	3.333		88	40-140	7	30	
Isophorone	2.30	0.333	mg/kg wet	3.333		69	40-140	0.4	30	
Naphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140	1	30	
Nitrobenzene	2.31	0.333	mg/kg wet	3.333		69	40-140	0.7	30	
N-Nitrosodimethylamine	1.64	0.333	mg/kg wet	3.333		49	40-140	3	30	
N-Nitroso-Di-n-Propylamine	2.57	0.333	mg/kg wet	3.333		77	40-140	5	30	
N-nitrosodiphenylamine	2.55	0.333	mg/kg wet	3.333		76	40-140	9	30	
Pentachlorophenol	2.38	1.67	mg/kg wet	3.333		71	30-130	6	30	
Phenanthrene	2.68	0.333	mg/kg wet	3.333		80	40-140	7	30	
Phenol	2.16	0.333	mg/kg wet	3.333		65	30-130	3	30	
Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140	7	30	
Pyridine	1.39	1.67	mg/kg wet	3.333		42	40-140	3	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	3.54		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Chlorophenol-d4	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Fluorobiphenyl	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2-Fluorophenol	3.00		mg/kg wet	5.000		60	30-130			
Surrogate: Nitrobenzene-d5	2.33		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.29		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.83		mg/kg wet	3.333		85	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.9 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- ICV+ Initial Calibration Verification recovery is above upper control limit (ICV+).
- 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 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 Contracting Company  
Client Project ID: Textron Providence

ESS Laboratory Work Order: 1511125

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

**Sample and Cooler Receipt Checklist**

Client: Charter Environmental  
 Client Project ID: \_\_\_\_\_  
 Shipped/Delivered Via: ESS Courier

ESS Project ID: 15110125  
 Date Project Due: 11/12/15  
 Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present?  \* No

Air No.: \_\_\_\_\_

2. Were Custody Seals Present?  No

3. Were Custody Seals Intact?  N/A

4. Is Radiation count < 100 CPM?  Yes

5. Is a cooler present?  Yes

Cooler Temp: 1.9

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 @ 2020 SE 11/5/15

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: 11/5/15 1942

Reviewed By: [Signature]

Date/Time: 11/5/15 2017

