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November 2, 2015

GeoTechnologies, Inc.
3200 Wellington Court; Suite 108
Raleigh, North Carolina 27615

Attn: Mr. Conrad Harris, P.E.

Reference: Fayetteville Regional Airport – Soil Assessment
Fayetteville Regional Airport
400 Airport Road
Fayetteville, Cumberland County, North Carolina
W&R Project Number: 02150376.00

Dear Mr. Harris:

WithersRavenel, Inc. (WR) has prepared this report to document soil assessment activities conducted at the subject property on September 30, October 1, and October 6 through 8, 2015. WR provided a field geologist to screen collected soils from geotechnical borings for the presence of volatile organic compounds (VOCs) with a field calibrated TVA-1000B with a Photo-Ionization Detector (PID) and a Flame-Ionization Detector (FID).

Soil Assessment

Geotechnologies contacted Soil Drilling Services, Inc. to advance a split spoon sampler to desired depths for the collection of soil for geotechnical analysis. The WR geologist cataloged and screened each collected soil interval with a field calibrated TVA-1000B. Boring logs are included as **Appendix A**.

Based on the TVA-1000B meter readings, WR collected one soil sample from boring B-6 (3.5-5.0 feet) for laboratory analysis of Total Petroleum Hydrocarbons – Gasoline / Diesel Range Organics (TPH-GRO & THP-DRO) and VOCs by EPA Method 8260B. Laboratory analysis did not reveal any compounds at a concentration that exceeded the laboratories reported detection limit (RDL). The laboratory analytical report is included as **Appendix B**.

WR did not identify any additional areas of concern based on field meter readings or visual / olfactory signs of impacts.

If you have any questions or concerns regarding this report, please contact us at (919) 469-3340.

Sincerely,
WithersRavenel

Matt James, P.G.
Project Geologist

C. Chan Bryant, P.E.
Vice President

Attachments: *Appendices*

APPENDIX A

BORING LOGS

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FIELD BORING LOG

Boring ID #	B-1.1	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 6, 2015	**Site Loc.**	Grassy Area by Baggage Drop	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
NC NAD83 Easting:				**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; fine to medium; moist; tan; no odors	13	0.0
3.5	5.0	Sand; fine to medium; moist; tan; no odors	16	0.0
6.0	7.5	Sand; fine to medium; moist; tan; no odors	16	0.0
8.5	10.0	Sand; fine to medium; moist; tan; no odors	15	0.0
13.5	15.0	Sand; coarse; moist; tan; no odors	14	0.0
18.5	20.0	Sand; some Clay; moist; tan; no odors	15	0.0
23.5	25.0	Sand; some Clay; moist; tan; no odors	15	0.0
28.5	30.0	Sand; some Clay; moist; tan/reddish; no odors	25	0.0
33.5	35.0	Clay; plastic; grey; moist to wet	10	1.0
38.5	40.0	Clay; plastic; grey; moist to wet	10	1.0

Note:
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FIELD BORING LOG

Boring ID #	B-1.2	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 8, 2015	**Site Loc.**	Grassy Area by Baggage Drop	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
NC NAD83 Easting:				**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; fine to medium; moist; tan; no odors	11	1.0
3.5	5.0	Sand; fine to medium; moist; tan; no odors	7.7	0.0
6.0	7.5	Sand; fine to medium; moist; tan; no odors	6.0	0.0
8.5	10.0	Sand; some Clay; medium; moist; tan/red; no odors	4.5	0.0
13.5	15.0	Sand; some Clay; medium; moist; tan/red; no odors	7.0	1.0
18.5	20.0	Sand;fine to medium; moist; tan; no odors	6.0	0.3
23.5	25.0	Sand;fine to medium; moist; tan; no odors	6.0	0.4
28.5	30.0	Sand; coarse; wet; brown; no odors	5.0	0.0
33.5	35.0	Sand; coarse; wet; brown; no odors	4.0	0.0
38.5	40.0	Sand; medium; wet; brown; no odors	3.0	0.0

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FIELD BORING LOG

Boring ID #	B-1.3	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 7, 2015	**Site Loc.**	Grassy Area by Terminal	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; very fine; moist; brown; no odors	25	2.6
3.5	5.0	Sand; very fine; moist; brown; no odors	29	4.3
6.0	7.5	Sand; very fine; moist; brown; no odors	35	10.0
8.5	10.0	Sand; some Clay; fine sand; brown; no odors	31	5.0
13.5	15.0	Sandy Clay; fine; moist; tan; no odors	27	4.0
18.5	20.0	Sand; medium; moist; tan; no odors	31	4.2
23.5	25.0	Sand; coarse; wet; tan; no odors	27	3.8
28.5	30.0	Sand; coarse; wet; tan; no odors	26	3.1
33.5	35.0	Clayey Sand; organic; black; medium sand; 40% fines; wet; no odor	25	3.0

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FIELD BORING LOG

Boring ID #	B-1.4	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 8, 2015	**Site Loc.**	Ramp	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; very fine; moist; brown; no odors	25	3.1
3.5	5.0	Sand; very fine; moist; brown; no odors	25	3.5
6.0	7.5	Sand; some Clay; fine; moist; brown; no odors	24	3.6
8.5	10.0	Sand; some Clay; fine; moist; brown; no odors	25	3.3
13.5	15.0	Sand; coarse; moist; tan; no odors	24	3.3
18.5	20.0	Sand; coarse; moist; tan; no odors	24	5.0
23.5	25.0	Sand; coarse; wet; tan; no odors	25	4.0
28.5	30.0	Sandy Clay; organic; grey/black; wet	24	2.5

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FIELD BORING LOG

Boring ID #	B-2	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 7, 2015	**Site Loc.**	Tarmac	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
0.0	2.5	Sand; coarse; moist; tan/brown; no odors	21	2.1
3.5	5.0	Sand; coarse; moist; tan/brown; no odors	22	2.2
		Obstruction at 5' - Boring Terminated		

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FIELD BORING LOG

Boring ID #	B-3	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 7, 2015	**Site Loc.**	Tarmac	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
3.5	5.0	Sand; very fine; moist; brown; no odors	25	2.0
6.0	7.5	Sand; very fine; moist; brown; no odors	25	4.0
8.5	10.0	Sand; some Clay; fine sand; brown; no odors	31	5.5
13.5	15.0	Sand; very fine; moist; tan; no odors	31	6.0
18.5	20.0	Sand; medium; moist; tan; no odors	35	3.5
23.5	25.0	Sand; coarse; wet; tan; no odors	21	3.0
28.5	30.0	Sandy Clay; organic; black; medium sand; 60% fines; wet; no odor	20	3.0

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Boring ID #	B-4.2	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 6, 2015	**Site Loc.**	Ramp	**TOC EL**	NA
W&R Rep	Matt James	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; fine to medium; moist; tan; no odors	2.6	0.0
3.5	5.0	Sand; fine to medium; moist; tan; no odors	2.6	1.0
6.0	7.5	Sand; fine to medium; moist; tan; no odors	2.6	1.0
8.5	10.0	Sand; fine to medium; moist; tan; no odors	6.0	1.0
13.5	15.0	Clayey Sand; fine to medium; 30% fines; tan; mostly dry; no odor	1.2	2.1
18.5	20.0	Sand; coarse; moist; tan; no odors	0.9	2.1
23.5	25.0	Clay; plastic; organic; black/gray; wet; no odor	0.5	2.0
28.5	30.0	Sand; coarse; some Clay; wet; tan; no odors	0.4	1.8
33.5	35.0	Sand; coarse; wet; tan; no odors	0.4	1.8

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FIELD BORING LOG

Boring ID #	B-6	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	September 30, 2015	**Site Loc.**	Front of Terminal (Center)	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; very fine; ~15% fines; brown; moist; no odors	6.5	4.3
3.5	5.0	Sandy Silt; with clay; 50 - 70% fines; brown; moist; no odors	62.7	119.0
6.0	7.5	Silty Sand; very fine; 15% fines; tan; moist; no odors	20.4	21.7
8.5	10.0	Silty Sand; very fine; 15% fines; tan; moist; no odors	13.7	8.5
13.5	15.0	Silty with Clay; tan; very moist; no odors	9.4	6.6
18.5	20.0	Sand; with clay; fine; 5% fines; brown; wet; no odors	8.8	6.1
23.5	25.0	Silty Clay; Black; organic; wet; no odors	6.9	5.1
28.5	30.0	Clay; Black; organic; wet; no odors	3.1	1.9
33.5	35.0	Clay; Black; organic; wet; no odors	5.5	2.2
SAMPLE FOR LABORATORY ANALYSIS		**B-6 (3.5-5.0) was laboratory analyzed for TPH GRO/DRO and VOCs by 8260B.**		

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FIELD BORING LOG

Boring ID #	B-7	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	September 30, 2015	**Site Loc.**	Front of Terminal (East Side)	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; very fine; ~15% fines; brown; moist; no odors	8.7	1.1
3.5	5.0	Sandy Silt; with clay; 50 - 70% fines; brown; moist; no odors	9.7	1.4
6.0	7.5	Silty Sand; very fine; 15% fines; tan; moist; no odors	10	1.0
8.5	10.0	Silty Sand; very fine; 15% fines; tan; moist; no odors	8.5	2.4
13.5	15.0	Silty with Clay; tan; very moist; no odors	11.8	1.6
18.5	20.0	Sand; with clay; fine; 5% fines; brown; wet; no odors	8.5	0.7
23.5	25.0	Silty Clay; Black; organic; wet; no odors	11.3	0.3
28.5	30.0	Clay; Black; organic; wet; no odors	6.1	0.3
33.5	35.0	Clay; Black; organic; wet; no odors	6.2	0.1

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FIELD BORING LOG

Boring ID #	B-8	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	September 30, 2015	**Site Loc.**	Front of Terminal (West Side)	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sand; very fine; ~15% fines; brown; moist; no odors	6.6	0.5
3.5	5.0	Clayey Sand; 10% fines; brown; moist; no odors	6.5	0.3
6.0	7.5	Silty Sand; very fine; 15% fines; tan; moist; no odors	4.4	0.2
8.5	10.0	Silty Sand; very fine; 15% fines; tan; moist; no odors	2.3	0.3
13.5	15.0	Sand; fine; tan; very moist; no odors	2.0	1.3
18.5	20.0	Sand; fine; 5% fines; brown; wet; no odors	1.8	65.0
23.5	25.0	Silty Clay; Black; organic; wet; no odors	4.3	13.0
28.5	30.0	Sand; light brown; wet; no odors	2.8	7.8
33.5	35.0	Clay; Black; organic; wet; no odors	2.2	3.5

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FIELD BORING LOG

Boring ID #	B-12	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sandy Silt; 50% fines; tan; moist; no odor	2.4	1.3
3.5	5.0	Silty Sand; very fine; 30% fines; tan; moist; no odors	2.3	1.7
6.0	7.5	Silty Sand; very fine; 40% fines; tan; moist; no odors	2.3	1.0
8.5	10.0	Clayey Silty Sand; 30% fines; orange; moist; no odors	1.1	1.5

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FIELD BORING LOG

Boring ID #	B-13	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sandy Silt; 50% fines; tan; moist; no odor	1.3	0.5
3.5	5.0	Sandy Silt; very fine; 5% fines; tan; moist; no odors	3.1	2.8
6.0	7.5	Sandy Silt; very fine; 5% fines; tan; moist; no odors	1.4	3.6
8.5	10.0	Sand; fine to medium; with clay; 5% fines; orange; moist; no odors	2.1	1.0

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FIELD BORING LOG

Boring ID #	B-14	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Silty Sand; 20% fines; grey; moist; no odor	38.7	32.7
3.5	5.0	Silty Sand; 25% fines; tan; moist; no odor	7.7	5.3
6.0	7.5	Clayey Sand; 40% fines; fine to medium; tan; very moist; no odors	6.0	0.6
8.5	10.0	Sand; fine to medium; with clay; 5% fines; orange; moist; no odors	4.9	1.0

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FIELD BORING LOG

Boring ID #	B-15	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Silty Sand; 35% fines; grey; moist; no odor	5.7	0.7
3.5	5.0	Sandy Silt; 70% fines; tan; moist; no odor	5.9	0.7
6.0	7.5	Clayey Sand; 40% fines; fine to medium; tan; very moist; no odors	5.1	1.1
8.5	10.0	Sand; fine to medium; with clay; 5% fines; orange; moist; no odors	5.9	0.3

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FIELD BORING LOG

Boring ID #	B-16	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sandy Silt; 70% fines; grey; moist; no odor	2.8	0.6
3.5	5.0	Sandy Silt; 70% fines; tan; moist; no odor	4.4	0.7
6.0	7.5	Sandy Silt; 55% fines; brown; moist; no odor	1.9	1.3
8.5	10.0	Sand; fine to medium; with silt; 40% fines; tan; moist; no odors	2.1	1.7

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FIELD BORING LOG

Boring ID #	B-17	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sandy Silt; 90% fines; grey; moist; no odor	1.5	0.9
3.5	5.0	Sandy Silt; with clay; 55% fines; brown; moist; no odor	11.8	10.1
6.0	7.5	Silty Sand; 35% fines; brown; moist; no odor	2.8	2.5
8.5	10.0	Silty Sand; 35% fines; brown; moist; no odor	1.3	2.2

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FIELD BORING LOG

Boring ID #	B-18	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Sandy Silt; 55% fines; grey; moist; no odor	5.1	3.3
3.5	5.0	Silty Sand; 55% fines; tan; moist; no odor	2.5	0.6
6.0	7.5	Silty Sand; 35% fines; brown; moist; no odor	1.8	0.8
8.5	10.0	Silty Sand; 20% fines; brown; moist; no odor	1.1	0.6

Note:
BLS - Below land surface

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FIELD BORING LOG

Boring ID #	B-19	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Silty Sand; 10% fines; brown; moist; no odor	2.2	0.4
3.5	5.0	Silty Sand; 20% fines; tan; moist; no odor	1.8	0.2
6.0	7.5	Silty Sand; 5% fines; brown; moist; no odor	5.5	3.1
8.5	10.0	Silty Sand; with clay; 25% fines; brown; moist; no odor	3.3	1.7

Note:
BLS - Below land surface

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FIELD BORING LOG

Boring ID #	B-20	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Silty Sand; 45% fines; brown; tan; no odor	0.5	0.9
3.5	5.0	Clayey Sand; 10% fines; tan; moist; no odor	1.5	1.9
6.0	7.5	Silty Sand; 30% fines; brown; moist; no odor	0.8	0.3
8.5	10.0	Silty Sand; with clay; 20% fines; brown; moist; no odor	1.2	0.8

Note:
BLS - Below land surface

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FIELD BORING LOG

Boring ID #	B-21	**Job Name**	Fayetteville Regional Airport	**Job #**	02150376.00
Date	October 1, 2015	**Site Loc.**	North of Parking Lot	**TOC EL**	NA
W&R Rep	John Palmer	**Driller**	Soil Drilling Services	**GW EL**	NA
	NC NAD83 Easting:			**NC NAD83 Northing:**	

Depth in Feet		**Soil Description**	Field VOC Readings	
From	**To**	**(Field USCS Classification)**	PID	FID
1.0	2.5	Silty Sand; 40% fines; grey brown; tan; no odor	21.8	21.0
3.5	5.0	Sandy Silt; 55% fines; tan; moist; no odor	1.8	1.8
6.0	7.5	Clayey Sand; 15% fines; brown; moist; no odor	1.9	0.3
8.5	10.0	Silty Sand; 30% fines; brown; moist; no odor	2.8	3.1

Note:
BLS - Below land surface

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APPENDIX B

LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

October 13, 2015

Withers & Ravenel Eng. - Standard

Sample Delivery Group:	L792386
Samples Received:	10/03/2015
Project Number:	02150376
Description:	Fayetteville Regional Airport

Report To:

Matt James
115 MacKenan Drive
Cary, NC 27511

Entire Report Reviewed By:

Jimmy Hunt
Technical Service Representative

TABLE OF CONTENTS

B-6 3.5-5 FT L792386-01 Solid

Collected by: Wesley Perry
Collected date/time: 10/01/15 09:00
Received date/time: 10/03/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG819851	1	10/05/15 22:54	10/06/15 18:21	CLG
Total Solids by Method 2540 G-2011	WG820136	1	10/07/15 09:19	10/08/15 05:56	MEL
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG819873	22	10/05/15 15:54	10/09/15 06:37	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG821349	1	10/12/15 13:13	10/12/15 18:15	KLO

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jimmy Hunt
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.0		1	10/08/2015 05:56	WG820136

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		2.86	22	10/09/2015 06:37	WG819873
(S) a,a,a-Trifluorotoluene(FID)	*102*		*59.0-128*		*10/09/2015 06:37*	WG819873

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0649	1	10/12/2015 18:15	WG821349
Acrylonitrile	ND		0.0130	1	10/12/2015 18:15	WG821349
Benzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Bromobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Bromodichloromethane	ND		0.00130	1	10/12/2015 18:15	WG821349
Bromoform	ND		0.00130	1	10/12/2015 18:15	WG821349
Bromomethane	ND		0.00649	1	10/12/2015 18:15	WG821349
n-Butylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
sec-Butylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
tert-Butylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Carbon tetrachloride	ND		0.00130	1	10/12/2015 18:15	WG821349
Chlorobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Chlorodibromomethane	ND		0.00130	1	10/12/2015 18:15	WG821349
Chloroethane	ND	J4	0.00649	1	10/12/2015 18:15	WG821349
2-Chloroethyl vinyl ether	ND		0.0649	1	10/12/2015 18:15	WG821349
Chloroform	ND		0.00649	1	10/12/2015 18:15	WG821349
Chloromethane	ND		0.00325	1	10/12/2015 18:15	WG821349
2-Chlorotoluene	ND		0.00130	1	10/12/2015 18:15	WG821349
4-Chlorotoluene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,2-Dibromo-3-Chloropropane	ND		0.00649	1	10/12/2015 18:15	WG821349
1,2-Dibromoethane	ND		0.00130	1	10/12/2015 18:15	WG821349
Dibromomethane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,2-Dichlorobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,3-Dichlorobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,4-Dichlorobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Dichlorodifluoromethane	ND		0.00649	1	10/12/2015 18:15	WG821349
1,1-Dichloroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,2-Dichloroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1-Dichloroethene	ND		0.00130	1	10/12/2015 18:15	WG821349
cis-1,2-Dichloroethene	ND		0.00130	1	10/12/2015 18:15	WG821349
trans-1,2-Dichloroethene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,2-Dichloropropane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1-Dichloropropene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,3-Dichloropropane	ND		0.00130	1	10/12/2015 18:15	WG821349
cis-1,3-Dichloropropene	ND		0.00130	1	10/12/2015 18:15	WG821349
trans-1,3-Dichloropropene	ND		0.00130	1	10/12/2015 18:15	WG821349
2,2-Dichloropropane	ND		0.00130	1	10/12/2015 18:15	WG821349
Di-isopropyl ether	ND		0.00130	1	10/12/2015 18:15	WG821349
Ethylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Hexachloro-1,3-butadiene	ND		0.00130	1	10/12/2015 18:15	WG821349
Isopropylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
p-Isopropyltoluene	ND		0.00130	1	10/12/2015 18:15	WG821349
2-Butanone (MEK)	ND		0.0130	1	10/12/2015 18:15	WG821349
Methylene Chloride	ND		0.00649	1	10/12/2015 18:15	WG821349

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
4-Methyl-2-pentanone (MIBK)	ND		0.0130	1	10/12/2015 18:15	WG821349
Methyl tert-butyl ether	ND		0.00130	1	10/12/2015 18:15	WG821349
Naphthalene	ND		0.00649	1	10/12/2015 18:15	WG821349
n-Propylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Styrene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1,1,2-Tetrachloroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1,2,2-Tetrachloroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
Tetrachloroethene	ND		0.00130	1	10/12/2015 18:15	WG821349
Toluene	ND		0.00649	1	10/12/2015 18:15	WG821349
1,2,3-Trichlorobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,2,4-Trichlorobenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1,1-Trichloroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1,2-Trichloroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
1,1,2-Trichlorotrifluoroethane	ND		0.00130	1	10/12/2015 18:15	WG821349
Trichloroethene	ND		0.00130	1	10/12/2015 18:15	WG821349
Trichlorofluoromethane	ND		0.00649	1	10/12/2015 18:15	WG821349
1,2,3-Trichloropropane	ND		0.00325	1	10/12/2015 18:15	WG821349
1,2,4-Trimethylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
1,3,5-Trimethylbenzene	ND		0.00130	1	10/12/2015 18:15	WG821349
Vinyl chloride	ND		0.00130	1	10/12/2015 18:15	WG821349
Xylenes, Total	ND		0.00390	1	10/12/2015 18:15	WG821349
(S) Toluene-d8	*102*		*88.7-115*		*10/12/2015 18:15*	WG821349
(S) Dibromofluoromethane	*103*		*76.3-123*		*10/12/2015 18:15*	WG821349
(S) 4-Bromofluorobenzene	*100*		*69.7-129*		*10/12/2015 18:15*	WG821349

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		5.20	1	10/06/2015 18:21	WG819851
(S) o-Terphenyl	*83.0*		*50.0-150*		*10/06/2015 18:21*	WG819851

Method Blank (MB)

(MB) 10/08/15 05:55

Analyte	MB Result	MB Qualifier	MB RDL
	%		%
Total Solids	0.000100		

L792386-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/08/15 05:56 • (DUP) 10/08/15 05:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	77.0	76.4	1	0.757		5

Laboratory Control Sample (LCS)

(LCS) 10/08/15 05:55

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 10/08/15 22:25

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	*100*		*59.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/08/15 21:19 • (LCSD) 10/08/15 21:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.72	5.92	104	108	63.5-137			3.35	20
(S) a,a,a-Trifluorotoluene(FID)				*103*	*103*	*59.0-128*				

L792291-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/08/15 22:47 • (MS) 10/08/15 23:09 • (MSD) 10/08/15 23:32

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	0.163	23.4	23.3	84.5	84.1	5	28.5-138			0.430	23.6
(S) a,a,a-Trifluorotoluene(FID)					*101*	*100*		*59.0-128*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) 10/12/15 17:50

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Acetone	ND		0.0500
Acrylonitrile	ND		0.0100
Benzene	ND		0.00100
Bromobenzene	ND		0.00100
Bromodichloromethane	ND		0.00100
Bromoform	ND		0.00100
Bromomethane	ND		0.00500
n-Butylbenzene	ND		0.00100
sec-Butylbenzene	ND		0.00100
tert-Butylbenzene	ND		0.00100
Carbon tetrachloride	ND		0.00100
Chlorobenzene	ND		0.00100
Chlorodibromomethane	ND		0.00100
Chloroethane	ND		0.00500
2-Chloroethyl vinyl ether	ND		0.0500
Chloroform	ND		0.00500
Chloromethane	ND		0.00250
2-Chlorotoluene	ND		0.00100
4-Chlorotoluene	ND		0.00100
1,2-Dibromo-3-Chloropropane	ND		0.00500
1,2-Dibromoethane	ND		0.00100
Dibromomethane	ND		0.00100
1,2-Dichlorobenzene	ND		0.00100
1,3-Dichlorobenzene	ND		0.00100
1,4-Dichlorobenzene	ND		0.00100
Dichlorodifluoromethane	ND		0.00500
1,1-Dichloroethane	ND		0.00100
1,2-Dichloroethane	ND		0.00100
1,1-Dichloroethene	ND		0.00100
cis-1,2-Dichloroethene	ND		0.00100
trans-1,2-Dichloroethene	ND		0.00100
1,2-Dichloropropane	ND		0.00100
1,1-Dichloropropene	ND		0.00100
1,3-Dichloropropane	ND		0.00100
cis-1,3-Dichloropropene	ND		0.00100
trans-1,3-Dichloropropene	ND		0.00100

Method Blank (MB)

(MB) 10/12/15 17:50

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
2,2-Dichloropropane	ND		0.00100
Di-isopropyl ether	ND		0.00100
Ethylbenzene	ND		0.00100
Hexachloro-1,3-butadiene	ND		0.00100
Isopropylbenzene	ND		0.00100
p-Isopropyltoluene	ND		0.00100
2-Butanone (MEK)	ND		0.0100
Methylene Chloride	ND		0.00500
4-Methyl-2-pentanone (MIBK)	ND		0.0100
Methyl tert-butyl ether	ND		0.00100
Naphthalene	ND		0.00500
n-Propylbenzene	ND		0.00100
Styrene	ND		0.00100
1,1,1,2-Tetrachloroethane	ND		0.00100
1,1,2,2-Tetrachloroethane	ND		0.00100
Tetrachloroethene	ND		0.00100
Toluene	ND		0.00500
1,1,2-Trichlorotrifluoroethane	ND		0.00100
1,2,3-Trichlorobenzene	ND		0.00100
1,2,4-Trichlorobenzene	ND		0.00100
1,1,1-Trichloroethane	ND		0.00100
1,1,2-Trichloroethane	ND		0.00100
Trichloroethene	ND		0.00100
Trichlorofluoromethane	ND		0.00500
1,2,3-Trichloropropane	ND		0.00250
1,2,4-Trimethylbenzene	ND		0.00100
1,3,5-Trimethylbenzene	ND		0.00100
Vinyl chloride	ND		0.00100
Xylenes, Total	ND		0.00300
(S) Toluene-d8	*105*		*88.7-115*
(S) Dibromofluoromethane	*95.4*		*76.3-123*
(S) 4-Bromofluorobenzene	*103*		*69.7-129*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/12/15 15:25 • (LCSD) 10/12/15 15:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.129	0.125	103	100	25.3-178			2.96	22.9
Acrylonitrile	0.125	0.132	0.125	106	99.9	57.8-143			5.49	20
Benzene	0.0250	0.0253	0.0237	101	94.6	72.6-120			6.62	20
Bromobenzene	0.0250	0.0252	0.0255	101	102	80.3-115			1.18	20
Bromodichloromethane	0.0250	0.0234	0.0239	93.6	95.7	75.3-119			2.20	20
Bromoform	0.0250	0.0246	0.0260	98.3	104	69.1-135			5.70	20
Bromomethane	0.0250	0.0350	0.0293	140	117	23.0-191			17.7	20
n-Butylbenzene	0.0250	0.0271	0.0250	109	100	74.2-134			8.02	20
sec-Butylbenzene	0.0250	0.0259	0.0253	104	101	77.8-129			2.45	20
tert-Butylbenzene	0.0250	0.0255	0.0253	102	101	77.2-129			0.830	20
Carbon tetrachloride	0.0250	0.0250	0.0236	100	94.6	69.4-129			5.54	20
Chlorobenzene	0.0250	0.0258	0.0256	103	102	78.9-122			0.640	20
Chlorodibromomethane	0.0250	0.0248	0.0267	99.1	107	76.4-126			7.53	20
Chloroethane	0.0250	0.0394	0.0365	158	146	47.2-147	J4		7.77	20
2-Chloroethyl vinyl ether	0.125	0.127	0.135	102	108	16.7-162			5.72	23.7
Chloroform	0.0250	0.0266	0.0243	106	97.1	73.3-122			9.10	20
Chloromethane	0.0250	0.0232	0.0200	92.7	79.9	53.1-135			14.8	20
2-Chlorotoluene	0.0250	0.0254	0.0249	102	99.8	74.6-127			1.80	20
4-Chlorotoluene	0.0250	0.0253	0.0253	101	101	79.5-123			0.0900	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0225	0.0225	89.9	89.8	64.9-131			0.0500	20
1,2-Dibromoethane	0.0250	0.0255	0.0259	102	104	78.7-123			1.78	20
Dibromomethane	0.0250	0.0255	0.0254	102	102	78.5-117			0.420	20
1,2-Dichlorobenzene	0.0250	0.0248	0.0237	99.2	94.9	83.6-119			4.49	20
1,3-Dichlorobenzene	0.0250	0.0263	0.0252	105	101	75.9-129			4.36	20
1,4-Dichlorobenzene	0.0250	0.0246	0.0227	98.5	90.6	81.0-115			8.32	20
Dichlorodifluoromethane	0.0250	0.0254	0.0228	102	91.3	50.9-139			10.6	20
1,1-Dichloroethane	0.0250	0.0251	0.0246	100	98.3	71.7-125			2.11	20
1,2-Dichloroethane	0.0250	0.0240	0.0234	95.9	93.6	67.2-121			2.41	20
1,1-Dichloroethene	0.0250	0.0256	0.0238	102	95.3	60.6-133			6.98	20
cis-1,2-Dichloroethene	0.0250	0.0249	0.0239	99.7	95.7	76.1-121			4.11	20
trans-1,2-Dichloroethene	0.0250	0.0247	0.0235	99.0	94.1	70.7-124			5.03	20
1,2-Dichloropropane	0.0250	0.0237	0.0234	94.8	93.6	76.9-123			1.35	20
1,1-Dichloropropene	0.0250	0.0250	0.0245	99.9	98.1	71.2-126			1.83	20
1,3-Dichloropropane	0.0250	0.0256	0.0247	102	98.7	80.3-114			3.70	20
cis-1,3-Dichloropropene	0.0250	0.0238	0.0244	95.3	97.6	77.3-123			2.47	20
trans-1,3-Dichloropropene	0.0250	0.0248	0.0256	99.3	103	73.0-127			3.28	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/12/15 15:25 • (LCSD) 10/12/15 15:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2,2-Dichloropropane	0.0250	0.0251	0.0239	100	95.6	61.9-132			4.97	20
Di-isopropyl ether	0.0250	0.0252	0.0246	101	98.6	67.2-131			2.23	20
Ethylbenzene	0.0250	0.0264	0.0252	106	101	78.6-124			4.91	20
Hexachloro-1,3-butadiene	0.0250	0.0256	0.0251	102	100	69.2-136			2.02	20
Isopropylbenzene	0.0250	0.0254	0.0258	102	103	79.4-126			1.50	20
p-Isopropyltoluene	0.0250	0.0276	0.0266	110	107	75.4-132			3.50	20
2-Butanone (MEK)	0.125	0.129	0.120	104	95.9	44.5-154			7.68	21.3
Methylene Chloride	0.0250	0.0254	0.0244	102	97.6	68.2-119			3.99	20
4-Methyl-2-pentanone (MIBK)	0.125	0.127	0.128	101	103	61.1-138			1.39	20
Methyl tert-butyl ether	0.0250	0.0247	0.0240	98.6	95.8	70.2-122			2.87	20
Naphthalene	0.0250	0.0244	0.0235	97.4	94.0	69.9-132			3.62	20
n-Propylbenzene	0.0250	0.0270	0.0252	108	101	80.2-124			6.74	20
Styrene	0.0250	0.0267	0.0273	107	109	79.4-124			2.37	20
1,1,1,2-Tetrachloroethane	0.0250	0.0256	0.0257	102	103	76.7-127			0.210	20
1,1,2,2-Tetrachloroethane	0.0250	0.0264	0.0251	106	100	78.8-124			5.32	20
Tetrachloroethene	0.0250	0.0251	0.0246	100	98.3	71.1-133			2.04	20
Toluene	0.0250	0.0224	0.0238	89.5	95.3	76.7-116			6.26	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0261	0.0247	105	98.9	62.6-138			5.62	20
1,2,3-Trichlorobenzene	0.0250	0.0245	0.0238	98.1	95.1	72.5-137			3.10	20
1,2,4-Trichlorobenzene	0.0250	0.0252	0.0254	101	101	74.0-137			0.650	20
1,1,1-Trichloroethane	0.0250	0.0250	0.0236	100	94.5	69.9-127			5.76	20
1,1,2-Trichloroethane	0.0250	0.0248	0.0247	99.3	98.9	81.9-119			0.440	20
Trichloroethene	0.0250	0.0230	0.0253	91.8	101	77.2-122			9.77	20
Trichlorofluoromethane	0.0250	0.0283	0.0266	113	106	51.5-151			6.33	20
1,2,3-Trichloropropane	0.0250	0.0255	0.0253	102	101	74.0-124			1.03	20
1,2,4-Trimethylbenzene	0.0250	0.0274	0.0270	110	108	77.1-124			1.68	20
1,3,5-Trimethylbenzene	0.0250	0.0256	0.0244	102	97.6	79.0-125			4.76	20
Vinyl chloride	0.0250	0.0249	0.0237	99.6	94.7	58.4-134			5.06	20
Xylenes, Total	0.0750	0.0749	0.0765	99.9	102	78.1-123			2.04	20
(S) Toluene-d8				*96.8*	*106*	*88.7-115*				
(S) Dibromofluoromethane				*102*	*101*	*76.3-123*				
(S) 4-Bromofluorobenzene				*103*	*102*	*69.7-129*				

L792821-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/12/15 18:39 • (MS) 10/12/15 19:03 • (MSD) 10/12/15 19:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.00152	0.0803	0.0822	63.0	64.6	1	10.0-130			2.38	31.5
Acrylonitrile	0.125	ND	0.0855	0.0929	68.4	74.3	1	39.3-152			8.20	27.2
Benzene	0.0250	ND	0.0162	0.0175	64.6	70.1	1	47.8-131			8.11	22.8
Bromobenzene	0.0250	ND	0.0189	0.0195	75.5	77.9	1	40.0-130			3.12	27.4
Bromodichloromethane	0.0250	ND	0.0191	0.0192	76.4	76.6	1	50.6-128			0.280	22.8
Bromoform	0.0250	ND	0.0186	0.0186	74.3	74.3	1	43.3-139			0.0200	25.9
Bromomethane	0.0250	ND	0.0236	0.0223	94.3	89.1	1	5.00-189			5.71	26.7
n-Butylbenzene	0.0250	ND	0.0173	0.0185	69.2	74.2	1	23.6-146			6.94	39.2
sec-Butylbenzene	0.0250	ND	0.0194	0.0203	77.4	81.2	1	31.0-142			4.76	34.7
tert-Butylbenzene	0.0250	ND	0.0200	0.0192	79.8	76.6	1	36.9-142			4.10	31.7
Carbon tetrachloride	0.0250	ND	0.0175	0.0183	69.8	73.3	1	46.0-140			4.84	27.2
Chlorobenzene	0.0250	ND	0.0191	0.0196	76.3	78.3	1	44.1-134			2.66	25.7
Chlorodibromomethane	0.0250	ND	0.0175	0.0192	70.0	76.7	1	49.7-134			9.10	24
Chloroethane	0.0250	ND	0.0238	0.0253	95.2	101	1	5.00-164			6.20	28.4
2-Chloroethyl vinyl ether	0.125	ND	0.0968	0.0954	77.5	76.3	1	5.00-159			1.47	40
Chloroform	0.0250	ND	0.0181	0.0193	72.4	77.1	1	51.2-133			6.28	22.8
Chloromethane	0.0250	ND	0.0123	0.0131	49.2	52.5	1	31.4-141			6.50	24.6
2-Chlorotoluene	0.0250	ND	0.0188	0.0191	75.2	76.6	1	36.1-137			1.82	28.9
4-Chlorotoluene	0.0250	ND	0.0186	0.0185	74.5	74.1	1	35.4-137			0.460	29.8
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.0159	0.0163	63.7	65.2	1	40.4-138			2.35	30.8
1,2-Dibromoethane	0.0250	ND	0.0189	0.0191	75.5	76.2	1	50.2-133			1.01	23.6
Dibromomethane	0.0250	ND	0.0182	0.0183	72.9	73.1	1	52.4-128			0.240	23
1,2-Dichlorobenzene	0.0250	ND	0.0172	0.0183	68.9	73.1	1	34.6-139			5.93	29.9
1,3-Dichlorobenzene	0.0250	ND	0.0183	0.0182	73.1	72.7	1	28.4-142			0.540	31.2
1,4-Dichlorobenzene	0.0250	ND	0.0171	0.0172	68.5	68.6	1	35.0-133			0.170	31.1
Dichlorodifluoromethane	0.0250	ND	0.0156	0.0174	62.4	69.4	1	31.2-144			10.7	30.2
1,1-Dichloroethane	0.0250	ND	0.0170	0.0191	68.0	76.2	1	49.1-136			11.3	22.9
1,2-Dichloroethane	0.0250	ND	0.0168	0.0181	67.1	72.2	1	47.1-129			7.32	22.7
1,1-Dichloroethene	0.0250	ND	0.0156	0.0178	62.6	71.1	1	36.1-142			12.8	25.6
cis-1,2-Dichloroethene	0.0250	ND	0.0169	0.0191	67.4	76.2	1	50.6-133			12.2	23
trans-1,2-Dichloroethene	0.0250	ND	0.0152	0.0169	61.0	67.7	1	43.8-135			10.5	24.8
1,2-Dichloropropane	0.0250	ND	0.0184	0.0183	73.4	73.2	1	50.3-134			0.290	22.7
1,1-Dichloropropene	0.0250	ND	0.0160	0.0174	63.9	69.4	1	43.0-137			8.30	26.4
1,3-Dichloropropane	0.0250	ND	0.0178	0.0186	71.4	74.4	1	51.4-127			4.09	23.1
cis-1,3-Dichloropropene	0.0250	ND	0.0181	0.0188	72.5	75.1	1	48.4-134			3.48	23.6
trans-1,3-Dichloropropene	0.0250	ND	0.0187	0.0186	74.7	74.3	1	46.6-135			0.520	25.3

L792821-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/12/15 18:39 • (MS) 10/12/15 19:03 • (MSD) 10/12/15 19:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,2-Dichloropropane	0.0250	ND	0.0183	0.0194	73.3	77.6	1	45.2-141			5.67	26.6
Di-isopropyl ether	0.0250	ND	0.0178	0.0190	71.2	76.1	1	46.7-140			6.56	23.5
Ethylbenzene	0.0250	ND	0.0179	0.0189	71.6	75.7	1	44.8-135			5.55	26.9
Hexachloro-1,3-butadiene	0.0250	ND	0.0164	0.0174	65.6	69.5	1	10.0-149			5.76	40
Isopropylbenzene	0.0250	ND	0.0183	0.0189	73.1	75.5	1	41.9-139			3.19	29.3
p-Isopropyltoluene	0.0250	ND	0.0189	0.0183	75.6	73.1	1	27.3-146			3.31	35.1
2-Butanone (MEK)	0.125	ND	0.0796	0.0827	63.7	66.2	1	23.9-170			3.81	28.3
Methylene Chloride	0.0250	ND	0.0167	0.0179	67.0	71.4	1	46.7-125			6.45	22.2
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.0952	0.0896	76.2	71.7	1	42.4-146			6.12	26.7
Methyl tert-butyl ether	0.0250	ND	0.0175	0.0195	70.1	77.8	1	50.4-131			10.4	24.8
Naphthalene	0.0250	ND	0.0167	0.0172	67.0	69.0	1	18.4-145			2.94	34
n-Propylbenzene	0.0250	ND	0.0188	0.0190	75.1	75.8	1	35.2-139			0.960	31.9
Styrene	0.0250	ND	0.0187	0.0192	74.9	76.6	1	39.7-137			2.26	28.2
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0196	0.0202	78.6	80.7	1	48.8-136			2.66	25.5
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0180	0.0191	72.1	76.5	1	45.7-140			5.92	26.4
Tetrachloroethene	0.0250	ND	0.0173	0.0173	69.1	69.1	1	37.7-140			0.0900	29.2
Toluene	0.0250	0.0000812	0.0173	0.0171	68.9	68.0	1	47.8-127			1.38	24.3
1,1,2-Trichlorotrifluoroethane	0.0250	ND	0.0177	0.0187	70.9	74.7	1	35.7-146			5.14	28.8
1,2,3-Trichlorobenzene	0.0250	ND	0.0167	0.0180	66.6	72.0	1	10.0-150			7.77	38.5
1,2,4-Trichlorobenzene	0.0250	ND	0.0173	0.0188	69.4	75.3	1	10.0-153			8.21	39.3
1,1,1-Trichloroethane	0.0250	ND	0.0180	0.0193	72.1	77.1	1	49.0-138			6.70	25.3
1,1,2-Trichloroethane	0.0250	ND	0.0189	0.0189	75.6	75.7	1	52.3-132			0.0600	23.4
Trichloroethene	0.0250	ND	0.0190	0.0178	76.0	71.2	1	48.0-132			6.56	24.8
Trichlorofluoromethane	0.0250	ND	0.0180	0.0198	72.1	79.2	1	12.8-169			9.48	29.7
1,2,3-Trichloropropane	0.0250	ND	0.0200	0.0195	79.8	77.8	1	44.4-138			2.58	26.3
1,2,4-Trimethylbenzene	0.0250	ND	0.0192	0.0192	76.7	76.7	1	32.9-139			0.100	30.6
1,3,5-Trimethylbenzene	0.0250	ND	0.0188	0.0194	75.2	77.4	1	37.1-138			2.88	30.6
Vinyl chloride	0.0250	ND	0.0150	0.0160	60.1	64.2	1	32.0-146			6.60	26.3
Xylenes, Total	0.0750	ND	0.0541	0.0557	72.2	74.3	1	42.7-135			2.85	26.6
(S) Toluene-d8					*107*	*102*		*88.7-115*				
(S) Dibromofluoromethane					*98.4*	*104*		*76.3-123*				
(S) 4-Bromofluorobenzene					*105*	*103*		*69.7-129*				

Method Blank (MB)

(MB) 10/06/15 12:24

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
TPH (GC/FID) High Fraction	ND		4.00
(S) o-Terphenyl	*73.0*		*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/06/15 12:35 • (LCSD) 10/06/15 12:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	60.0	42.5	48.3	70.9	80.4	50.0-150			12.6	20
(S) o-Terphenyl				*77.6*	*89.6*	*50.0-150*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J4	The associated batch QC was outside the established quality control range for accuracy.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

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Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

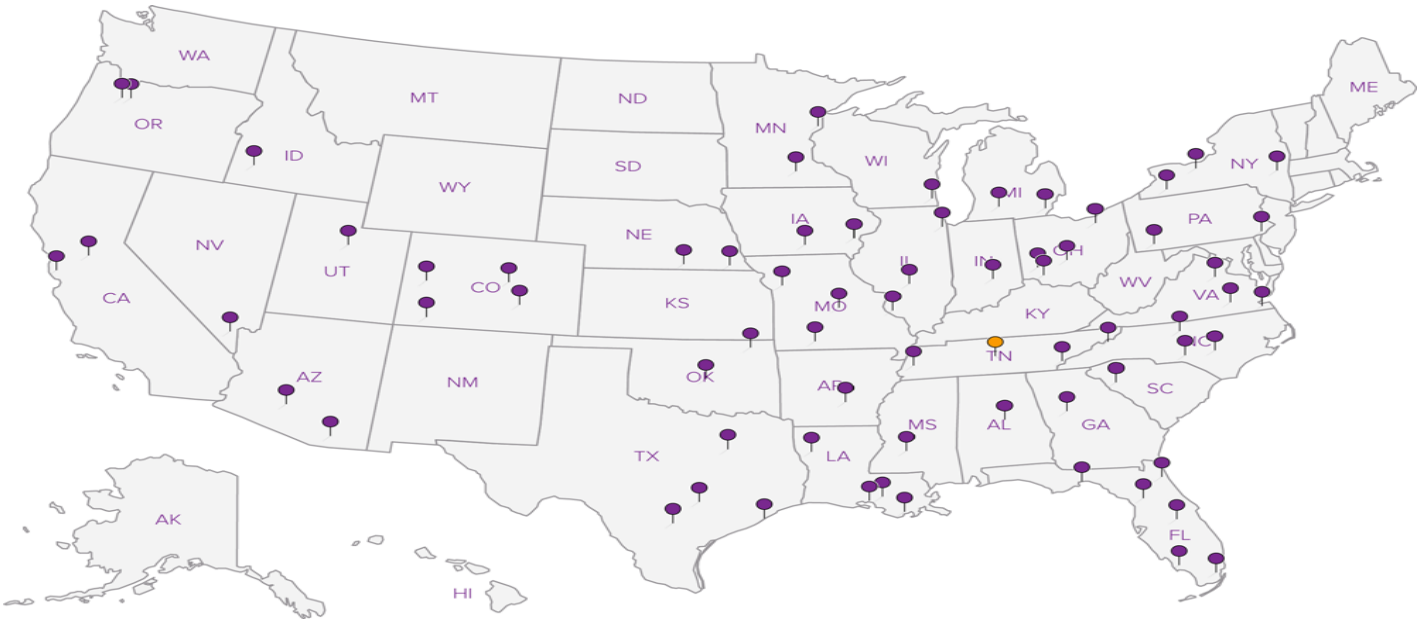
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Withers & Ravenel Eng.
111 MacKenan Drive
Cary, NC 27511

Alternate billing information:
WITHRAVS - Regular
WITHRAVS - 6200FULL
WITHRAVS - STATELEAD

Report to: MJames @withersravenel.com
Email to: Matt James

Project Description: Fayetteville Regional Airport
City/Sate Collected: Fayetteville/NC

Phone: (919) 469-3340
FAX:

Client Project #: 02150376
ESC Key: see above

Collected by: Wesley Berry
Site/Facility ID#:
P.O.#:

Collected by (signature):
Packed on Ice: N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%
____ Three Day.....25%

Date Results Needed:
Email? __No__Yes
FAX? __No__Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	8260 - VOC	TPH DRO/GRO	Remarks/Contaminant	Sample # (lab only)
B-6	G	SS	3.5-5.0	10/1/15	0900	5	X	X		792386-1

Analysis/Container/Preservative

Chain of Custody Page 1 of 1

Prepared by:

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Mt. Juliet, TN 37122
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Phone (800) 767-5859
FAX (615) 758-5859

C175

CoCode WITHRAVS (lab use only)
Template/Prelogin
Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	10/2/15	1340	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)
	10/2/15	1720	

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Condition: 1F (lab use only)

Temp: 3.2 °C

Bottles Received: 5

Date: 10/03/15

Time: 0900

pH Checked:

NCF: