NC Department of Transportation
Preliminary Site Assessment
State Project: U-5132
WBS Element: 45155.1.1

Former Crumbley Property
Parcel #905
December 16, 2011

AMEC Earth and Environmental, Inc. of North Carolina
AMEC Project: 6470-11-0529

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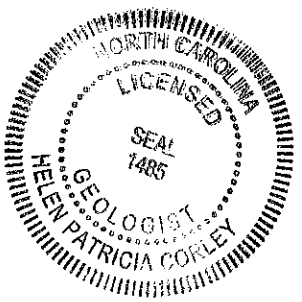

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1.0 INTRODUCTION

In accordance with the North Carolina Department of Transportation (NCDOT) Request for Proposal, dated October 11, 2011, AMEC of North Carolina, Inc. (AMEC) has performed a Preliminary Site Assessment (PSA) for the Former Crumbley Property (the Site) to be effected by a road improvement project along NC 24, Trumpet interchange between SR 1308 and the US 17 Bypass. The Site, which is located at 1551 Lejeune Boulevard, currently houses a vacant service station building and is identified as Parcel #905. The property is located approximately 950 feet west of the corner of the intersection of Lejeune Boulevard and Bell Fork Road in the city of Jacksonville of Onslow County, North Carolina. The investigation was conducted in accordance with AMEC's Technical and Cost proposal dated October 21, 2011.

NCDOT contracted AMEC to perform a PSA on the Former Crumbley Property because historically the site operated as a gas station. The PSA was performed to determine the extent of soils, which have been impacted by petroleum compounds as a result of uses of the property within the proposed design project area. This parcel will be affected by construction activities associated with the trumpet interchange addition along NC 24.

The following report summarizes the site history, geophysical survey, location and capacities of any USTs, and describes our field investigation with results of chemical analyses. The report includes the evaluation of the analytical data with regards to the presence or absence of soil contamination within the NCDOT design area of parcel #905 and estimates the extent of soil contamination.

1.1 Site Location and Vicinity

The Former Crumbley Property parcel is located approximately 950 feet west of the corner of the intersection of Lejeune Boulevard with Bell Fork Road in Jacksonville of Onslow County, North Carolina, as shown in Figure 1. The site is bound to the north by wooded, undeveloped land and railroad tracks; to the east by wooded, undeveloped land and railroad tracks, across which is a single-family residence; to the south by Lejeune Boulevard, across which is wooded, undeveloped land; and to the west by the Ronnie Henderson Property Parcel #906 and wooded, undeveloped land (Figure 2).

1.2 Site Description and History

During September 2010, AMEC formerly MACTEC Engineering and Consulting, Inc., conducted a preliminary ESA at the property, which consisted of a geophysical survey and conduct of soil borings SB-1 through SB-14 with sample collection and analysis. At the time the Site was significantly covered with piles of tires. In the accessible areas surveyed, the geophysics data did not indicated the presence of any metallic USTs. Samples from three of the 14 soil borings indicated petroleum hydrocarbon from 10 to 265 mg/kg, with the most impact identified near the canopy (Table 1 and Figure 3). Appendix A includes the September 2010 Former Crumbley Report.

The Site was most recently a tire business called Chico's Tires. Sometime within the last year, the piles of tires observed in the 2010 ESA were removed. The Site currently consists of a vacant service station building, which historically was a gas station. The Site has three inactive raised-concrete dispenser islands, a canopy and a vacant service station. The proposed NCDOT project will encompass the entire property. Appendix B includes a recent photo log for Parcel #905.

AMEC studied the North Carolina Department of Environment and Natural Resources (NCDENR) UST Registered Tanks Database and the NCDENR Incident Management Database. Through these efforts it was discovered that the NCDENR has identified this parcel as a site with existing groundwater contamination but has rated this site as a "Low" priority, indicating that known contamination is unlikely to impact off-site concerns.

2.0 GEOLOGY

2.1 Regional Geology

The Former Crumbley Property is located within the River Bend Formation of the Tertiary sediments located in the Coastal Plain Physiographic Province of eastern North Carolina. The River Bend Formation rocks comprise limestone, calcarenite overlain by and intercalated with indurated, sandy, molluscan-mold limestone.

2.2 Site Geology

Site geology was observed through the sampling of 25 shallow direct push probe soil borings (SB) onsite. Borings ranged in total depth from eight to 12 feet below ground surface (bgs). Native soils generally consisted of orange, well sorted and clayey fine- to medium-grained sand. Boring logs are presented in Appendix C. Moist soil conditions were typically first encountered at a depth of 10 feet (ft) bgs.

One previously installed monitoring well was discovered onsite in the center of the former UST bed. This area had not been visible during the 2010 ESA due to its location under a pile of tires. Depth to water was measured at 10.88 ft bgs during this PSA. The well had a tag and was identified as MW-1 with a total depth of 14.5 ft bgs, installation date of March 30, 2004 and screen interval from 5 to 15 ft bgs.

3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the site, several tasks were accomplished in preparation for the subsurface investigation. The Health and Safety Plan (HSP) was modified to include the site-specific health and safety information. On November 10, 2011 a private utility locating company, Priority Underground Locating of Huntersville, North Carolina cleared the proposed drilling locations that were marked in the field by AMEC personnel. North Carolina-1-Call was contacted on November 8, 2011 to report the proposed drilling activities and subsequently notify all affected utilities for the parcel. Troxler Geologic Services, Inc. of Raleigh, North Carolina was retained by AMEC to perform the direct push drilling and sampling. AMEC performed a geophysical survey (electromagnetic and ground penetrating radar) onsite on November 1 and 2, 2011. The geophysical results were reviewed and discussed at the completion of each survey. SGS North America, Inc. was contacted for acquisition of sample containers. Soil boring locations were focused in areas previously obstructed due to piles of tires, as well as near the former UST and canopy areas.

3.2 Site Reconnaissance

AMEC personnel completed site reconnaissance on November 1, 2, and 10, 2011. During reconnaissance, the area was visually examined for the presence of any UST or areas/obstructions that could potentially affect the subsurface investigation and the number of boring locations was discussed. Boring locations were marked on November 16, 2011.

3.3 Geophysical Survey

AMEC performed the geophysical surveys on November 1 and 2, 2011. AMEC utilized a Geophex, Ltd. GEM -2 (GEM) to perform the electromagnetic induction surveys and a Geophysical Survey Systems SIR-3000 to conduct the ground-penetrating radar (GPR) investigations. Based on the geophysical data interpretations presented in the attached report (Appendix D), combined with limited subsurface data that exist for the Site, and observations made by personnel during geophysical data collection, the following has been concluded: there appears to be minimal anomalous subsurface targets at the Site other than those targets that correspond to known utility alignments, areas of reinforced concrete, and above-ground sources of interference such as the service station and dispenser station, metal signage and barbed wire fencing. However, there was an anomalous reading in the vicinity of a surficial void in the northeast section of the geophysical survey area. Further investigation by GPR didn't indicate any USTs in the vicinity of the void space. Regarding buried utility alignments, there were two utility alignments corresponding with surface cuts and repairs trending from the service station to the dispenser station. There was one subsurface utility alignment trending south of the service station towards Lejeune Boulevard and another trending north from the service station and then turning west, neither of these showed any surficial indications of a utility line. There were no identified subsurface utility alignments along the western side of the service station.

3.4 Well Survey

No well survey was performed as part of this PSA. One monitoring well was observed during the geophysical survey, as described above in Section 2.2.

3.5 Soil Sampling

Soil boring occurred on November 16 and 17 at Parcel #905. A total of 25 direct push soil borings were conducted within the NCDOT design project on Parcel #905, which encompasses the entire site.

Figure 2 presents the Site Map with boring locations and identifications. These samples were located to optimize the likelihood of intercepting any potential soil contamination by targeting the previous inaccessible areas and to delineate the extent of contamination around the canopy. Soil borings, SB-15 through SB-30 were placed in previously inaccessible areas. Soil borings SB-31 through SB-39 targeted the UST area, the canopy, the service station storefront and along NC 24. Soil Boring locations SB-33 through SB-39 exhibited elevated Photo Ionized Detector (PID) readings.

Soil samples were collected in accordance with EPA protocols in laboratory-supplied containers. The soil samples for Total Petroleum Hydrocarbons (TPH) –Gasoline Range Organics (GRO) analysis were collected using the 5030 prep method with methanol preservation. Samples for TPH-Diesel Range Organics (DRO) analysis were collected in 4oz. glass containers. Once placed in the containers, the samples were labeled with the sample number, time of collection, date of collection, name of the collector, and the requested analysis. The samples were packed on ice, and then hand delivered to SGS North America, Inc. in Wilmington, a North Carolina Certified Laboratory following proper chain-of-custody procedures.

3.6 Groundwater Sampling

On November 17, 2011, AMEC recorded field measurements of groundwater pH, temperature, specific conductivity, dissolved oxygen (DO), and oxygen reduction potential (ORP) during well-purging activities. The field measurements were collected from the monitoring well until the field measurements of water quality parameters, pH, specific conductivity and DO had stabilized in accordance with the guidelines presented in the EPA's *Ground Water Issue Concerning Low-Flow (minimal drawdown) Ground-Water Sampling Procedures*, dated April 1996 (US EPA/540/S-95/504). This method confirms that the standing water within the well had been removed such that the sample would be representative of the groundwater in the aquifer beneath the site. A Monitoring Well Sampling Worksheet with these data is included as Appendix E.

On November 17, 2011, AMEC collected a groundwater sample from the monitoring well using a peristaltic pump and new, dedicated, disposable tubing. Prior to sample collection, AMEC purged groundwater AMEC measured and recorded field parameters while we purged the well.

AMEC decanted samples directly from the dedicated tubing for each well into pre-labeled, laboratory-supplied sample containers. The sample containers were placed into a cooler filled with ice and delivered under chain-of-custody to SGS in Wilmington, North Carolina. AMEC instructed SGS to test the groundwater sample for volatile organic compounds (VOCs) according to EPA Method 8260B, for semi-volatile organic compounds (SVOCs) according to EPA Method 8270D, and for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) according to the method of the Massachusetts Department of Environmental Protection (MADEP).

4.0 SOIL SAMPLING RESULTS

AMEC conducted soil sampling at the Site on November 16 and 17, 2011. The purpose of the sampling was to determine if releases of petroleum hydrocarbons had occurred, and if so, to estimate the volume of soil that might require special handling during construction activities. The sampling was accomplished using direct push methods accompanied by field screening for organic vapors with a PID. The laboratory results are tabulated in Table 1 along with the results from the September 2010 ESA.

A minimum of one soil sample was collected from each of the 25 newly completed soil borings from Parcel #905. If impacted soil was identified, then additional soil samples were obtained. Since soil borings SB-33 through SB-36, SB-38, and SB-39 had elevated PID readings ranging from 4.3 to 1792 ppm at the 7-9 foot interval, additional shallower samples were collected and analyzed. No other soil borings exhibited elevated PID readings; consequently additional soil samples were not warranted. Results from 11 of the 31 samples analyzed for DRO and GRO analyses reported detections of TPH. The laboratory detected TPH DRO in the soil samples collected from four soil borings in samples SB-16, SB-22, SB-35B, SB-36A, and SB-36B at concentrations that exceed NCDENR's Action Level of 10 mg/Kg. Soil boring SB-22 is located on western side of the Site away from the source areas of the canopy and former UST bed. The laboratory detected TPH GRO in the soil samples collected from five soil borings in samples SB-33A, SB-33B, SB-35A, SB-35B, SB-36A, SB-36B, SB-37, and SB-38B at concentrations that

exceed the NCDENR Action Level of 10 mg/Kg. The laboratory detected TPH GRO in soil boring SB-39B at a concentration above the laboratory reporting limit but not above the Action Level of 10 mg/Kg. The remaining soil boring sample results were all below reporting limits. Figure 3 shows the Site Map with Analytical Data and incorporates the 2010 ESA data and boring location'.

Based on the previous and recent field investigation and laboratory data, AMEC drew an estimated area of contamination as shown on Figure 4. The canopy area and the southern side of the service station storefront appear to be the source of impacted soil as nearby borings exhibited TPH concentrations that exceed the Action Level of 10 mg/Kg from depths ranging from 2 ft bgs to the total boring depth at 9 ft bgs. This estimated contamination area equals 11,200 square ft and has a thickness from 2 ft bgs to at least 9 ft bgs. Using a thickness of 7 ft, the resultant volume of estimated contamination would be 78,400 cubic feet, which is roughly 2,500-3,000 cubic yards.

Copies of the laboratory report and chain-of-custody documentation are included as Appendix F.

4.1 GROUNDWATER SAMPLING RESULTS

The laboratory detected several analytes in the groundwater sample collected from monitoring well MW-1 at concentrations that exceeded the laboratory reporting limits, but not the respective NC 2L Standard. The detected analytes include benzene isomers, naphthalene and 2-methylnaphthalene typical of a gasoline release. Laboratory analytical results are summarized in Table 2 and on Figure 3. Copies of the laboratory report and chain-of-custody documentation are included as Appendix F.

5.0 CONCLUSIONS

The following conclusions are based upon AMEC's evaluation of field observations and laboratory analyses of samples collected from the Site on January 28, 2011 while incorporating results from the 2010 ESA.

- The property is presently vacant however most recently was a tire business and historically was a gas station.

- The NCDENR's UST Registered Tanks Database and NCDENR's Incident Management Database has identified this parcel as a site with existing groundwater contamination and has rated this site as a "Low" priority, indicating that known contamination is unlikely to impact off-site concerns.

- The geophysical data did not indicate the presence of USTs.

- A total of 31 soil samples were collected and analyzed for TPH GRO and DRO.

- One groundwater sample was collected and analyzed for VOCs, SVOCs, MADEP VPH and EPH.

- Laboratory analyses indicated DRO and/or GRO detections above the analytical method reporting level in 11 of the 31 soil samples.

- An estimated volume of at least 2,500-3,000 cubic yards of petroleum contaminated soil has been calculated as being onsite. This soil is predominantly located in the vicinity of the canopy (i.e. former dispensers/pump islands) and to the west in front of the service station building.

6.0 RECOMMENDATIONS

Since soil contamination was identified on the Site, NCDOT should remain cautious of intercepting contaminated soil during road construction activities. If potentially impacted soils are intercepted, AMEC recommends the following action:

- Segregation, followed by proper assessment and handling, of potentially petroleum-impacted soil during roadway improvement construction operations.

AMEC recommends that well MW1 be properly abandoned by a certified NC driller prior to road construction activities.

AMEC recommends further investigation of the void, located in the northeast portion of the geophysical survey area approximately 85 feet north of the service station and 120 feet east of the western property boundary, via intrusive methods.

Table 1
Soil Sampling Analytical Results
Former Crumbley Property, Parcel #905
State Project: U-5132, WBS Element: 45155.1.1
Jacksonville, North Carolina
AMEC Job No. 6470-11-0529

Analytical Method →			*EPA 8015*	*EPA 8015*
Contaminant of Concern →			*TPH-DRO*	*TPH-GRO*
Sample ID	**Date Collected**	**Sample Depth**		
SB-1	9/20/2010	7'-8'	<7.43	<4.96
SB-2	9/20/2010	7'-8'	<7.90	<5.98
SB-3	9/20/2010	7'-8'	<7.77	<5.55
SB-4	9/20/2010	7'-8'	**10.4**	<5.44
SB-5	9/20/2010	7'-8'	<8.39	<5.95
SB-6	9/20/2010	7'-8'	<7.62	<5.30
SB-7	9/20/2010	7'-8'	<6.46	<6.45
SB-8	9/20/2010	0'-1'	**21.7**	**26.1**
SB-9	9/20/2010	5'-6'	**27.0**	**265**
SB-10	9/20/2010	7'-8'	<7.80	<5.40
SB-11	9/20/2010	7'-8'	<7.16	<4.74
SB-12	9/20/2010	7'-8'	<7.64	<6.33
SB-13	9/20/2010	7'-8'	<6.76	<5.71
SB-14	9/20/2010	7'-8'	<7.90	<5.68
SB-15	11/16/2011	7'-8'	<7.92	<3.69
SB-16	11/16/2011	7'-8'	**12.1**	<3.52
SB-17	11/16/2011	7'-8'	<8.05	<3.74
SB-18	11/16/2011	7'-8'	<7.69	<3.49
SB-19	11/16/2011	7'-8'	<7.24	<3.34
SB-20	11/16/2011	7'-8'	<7.54	<3.85
SB-21	11/16/2011	7'-8'	<6.77	<3.59
SB-22	11/16/2011	7'-8'	**22.2**	<3.88
SB-23	11/16/2011	5'-6'	<6.69	<3.77
SB-24	11/16/2011	7'-8'	<7.51	<4.05
SB-25	11/16/2011	7'-8'	<7.32	<3.43
SB-26	11/16/2011	7'-8'	<6.82	<3.65
SB-27	11/16/2011	6'-7'	<7.52	<3.23
SB-28	11/16/2011	7'-8'	<7.03	<3.46
SB-29	11/16/2011	7'-8'	<7.45	<3.52
SB-30	11/16/2011	7'-8'	<7.60	<3.49
SB-31	11/16/2011	8'-9'	<7.86	<3.75
SB-32	11/16/2011	8'-9'	<7.46	<3.32
SB-33A	11/16/2011	5'-6'	<8.08	**4.30**
SB-33B	11/16/2011	8'-9'	<7.84	**12.2**
SB-34A	11/17/2011	5'-6'	<8.00	<3.82
SB-34B	11/17/2011	7'-8'	<7.44	<3.68
SB-35A	11/17/2011	2'-3'	<7.38	**47.0**
SB-35B	11/17/2011	7'-8'	**1,360**	**7,270**
SB-36A	11/17/2011	2'-3'	**34.4**	**16.4**
SB-36B	11/17/2011	7'-8'	**45.2**	**72.3**
SB-37	11/17/2011	7'-8'	<8.00	**104**
SB-38A	11/17/2011	4'-5'	<8.24	<3.86
SB-38B	11/17/2011	7'-8'	<8.19	**17.9**
SB-39A	11/17/2011	2'-3'	<7.40	<3.62
SB-39B	11/17/2011	7'-8'	<8.03	**7.46**
NCDENR Action Level			*10*	*10*

Notes:

NCDENR	North Carolina Department of Environment and Natural Resources
Bold	Concentration exceeds Reporting Limit (RL)
Bold	Concentration exceeds the NCDENR Action Level
<#	Analyte not detected above the RL

Prepared by: MJG Date: 12/12/11

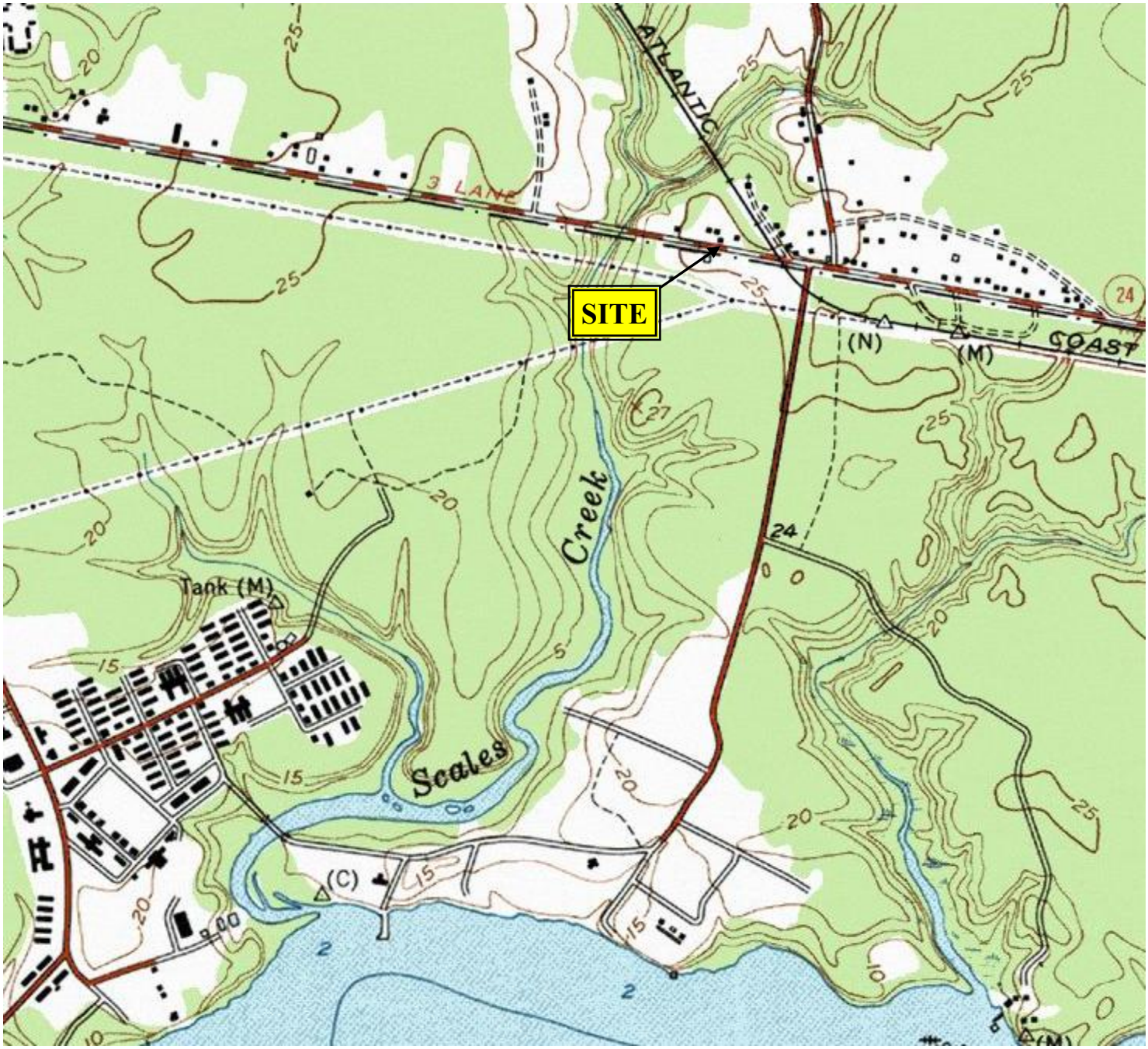
Checked by: HPC Date: 12/15/11

Table 2
Groundwater Sampling Analytical Detections
Former Crumbley Property, Parcel #905
State Project: U-5132, WBS Element: 45155.1.1
Jacksonville, North Carolina
AMEC Project No. 6470-11-0529

Sample ID	Sample Date	*EPA Method 8260B*								*EPA Method 8270D*		*MADEP VPH*		
		1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	Ethylbenzene	Isopropylbenzene	Naphthalene	n-Propylbenzene	sec-Butylbenzene	2-Methylnapthalene	Naphthalene	C5-C8 Aliphatics	C9-C10 Aromatics	C9-C12 Aliphatics
MW-1	11/17/2011	**6.57**	**3.12**	**2.13**	**11**	**3.84**	**7.22**	**11.8**	**1.15**	**6.08**	**7.95**	**306**	**103**	**156**
2L Standards		***350***	***350***	***70***	***550***	***70***	***21***	***70***	***70***	***14***	***21***	***420***	***210***	***4200***

Concentrations reported in micrograms per kilogram (ug/L)
2L Standard Groundwater Quality Standard, codified in the NC Administrative Code (15A NCAC 2L.0202)
Bold Analyte detected at a concentration that exceeds the RL
MADEP EPH analysis performed and all carbon ranges were ND

Prepared By: MJG Date: 12/12/11
Checked By: HPC Date: 12/15/11



NORTH

JACKSONVILLE SOUTH, NC

1997

NIMA 5553 III NW-Series V 842

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
1000 0 1000 2000

QUADRANGLE LOCATION

NOTE: SITE LOCATION IS APPROXIMATE

AMEC EARTH AND ENVIRONMENTAL, INC.
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA 27703

TOPOGRAPHIC SITE MAP
FORMER CRUMBLEY PROPERTY,PARCEL #905
STATE PROJECT: U-5132, WBS ELEMENT: 45155.1.1
JACKSONVILLE, NORTH CAROLINA

DRAWN: MJG	DATE: DECEMBER 2011	FIGURE
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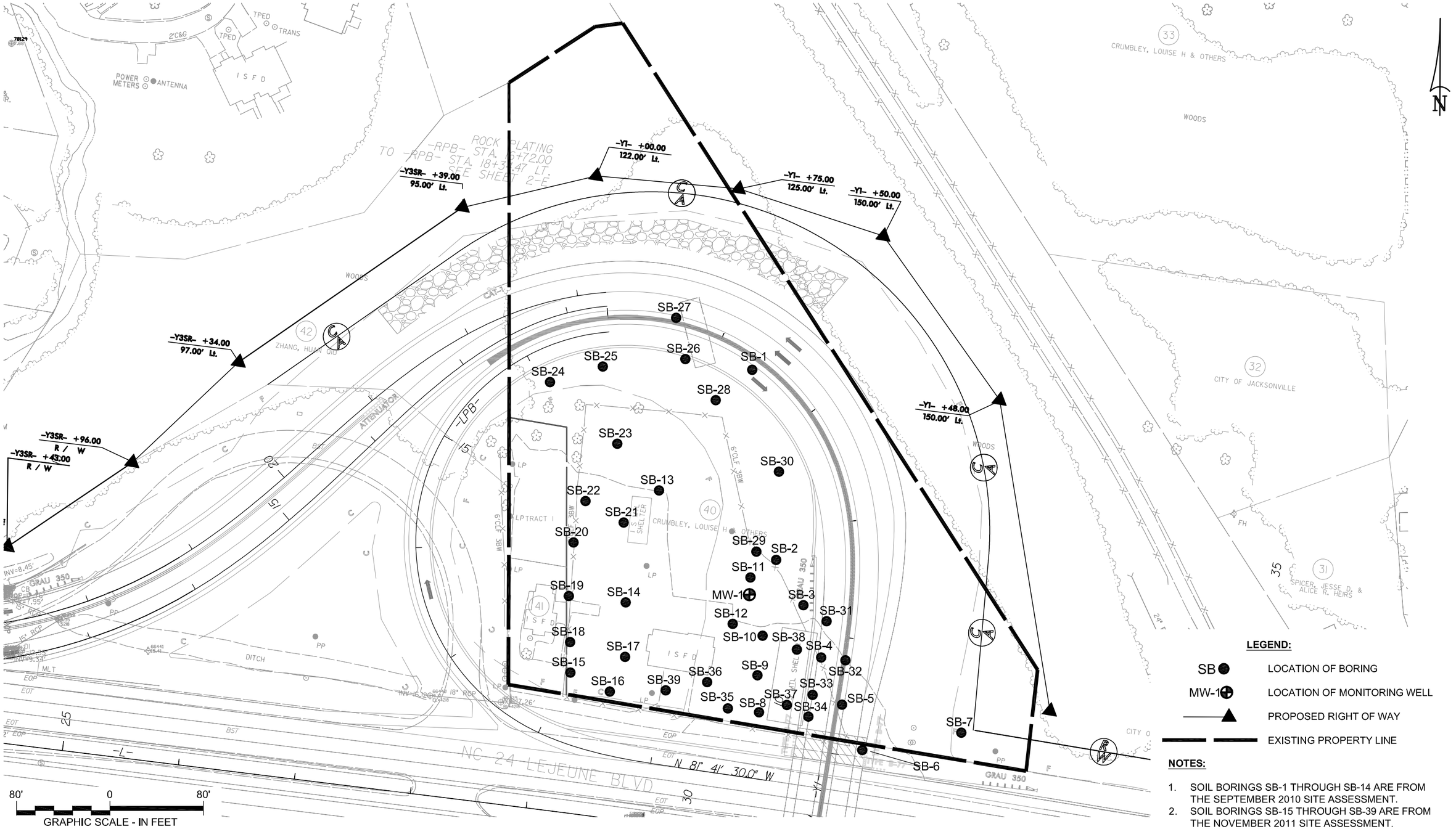
APPROVAL:	JOB: 6470-11-0529	



LEGEND:

SB ●	LOCATION OF BORING
MW-1 ⊕	LOCATION OF MONITORING WELL
——▲——	PROPOSED RIGHT OF WAY
——— ———	EXISTING PROPERTY LINE

NOTES:

1. SOIL BORINGS SB-1 THROUGH SB-14 ARE FROM THE SEPTEMBER 2010 SITE ASSESSMENT.
2. SOIL BORINGS SB-15 THROUGH SB-39 ARE FROM THE NOVEMBER 2011 SITE ASSESSMENT.

AMEC E&I, Inc.
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA

SITE MAP WITH SAMPLE LOCATIONS
FORMER CRUMBLEY PROPERTY, PARCEL #905
PROJECT No. U-5132 TIP No. 45155.1.1
JACKSONVILLE, NORTH CAROLINA

DRAWN:	R.R.	DATE:	DECEMBER 2011
ENG CHECK:		SCALE:	AS SHOWN
APPROVAL:		JOB No.:	6470-11-0529

FIGURE 2

REFERENCE: AMEC FIELD NOTES.

MW-1 (concentration unit is (µg/L)	
1,2,4-Trimethylbenzene	6.57
1,3,5-Trimethylbenzene	3.12
n-Butylbenzene	2.13
Ethylbenzene	11
Isopropylbenzene	3.84
n-Propylbenzene	11.8
sec-Butylbenzene	1.15
2-Methylnaphthalene	6.08
Naphthalene	7.95
C5-C8 Aliphatics	306
C9-C10 Aromatics	103
C9-C12 Aliphatics	156

SB-22	7'-8'
TPH-DRO	22.2
TPH-GRO	ND

SB-36	2'-3'	7'-8'
TPH-DRO	34.4	45.2
TPH-GRO	16.4	72.3

SB-39	2'-3'	7'-8'
TPH-DRO	ND	ND
TPH-GRO	ND	7.46

SB-16	7'-8'
TPH-DRO	12.1
TPH-GRO	ND

SB-9	5'-6'
TPH-DRO	27.0
TPH-GRO	265

SB-8	0-1'
TPH-DRO	21.7
TPH-GRO	26.1

SB-35	2'-3'	7'-8'
TPH-DRO	ND	1,360
TPH-GRO	47.0	7,270

SB-37	7'-8'
TPH-DRO	ND
TPH-GRO	104

SB-4	7'-8'
TPH-DRO	10.4

SB-38	4'-5'	7'-8'
TPH-DRO	ND	ND
TPH-GRO	ND	17.9

SB-33	5'-6'	8'-9'
TPH-DRO	ND	ND
TPH-GRO	4.30	12.2

LEGEND:

- SB● — LOCATION OF BORING
- MW-1⊕ — LOCATION OF MONITORING WELL
- SB-35 | 2'-3' | 7'-8' | TPH-DRO | ND | 1,360 | TPH-GRO | 47.0 | 7,270 — SAMPLE DEPTH / CONCENTRATION UNIT is mg/Kg
- ND — NOT DETECTED
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

NOTES:

1. SOIL BORINGS SB-1 THROUGH SB-14 ARE FROM THE SEPTEMBER 2010 SITE ASSESSMENT.
2. SOIL BORINGS SB-15 THROUGH SB-39 ARE FROM THE NOVEMBER 2011 SITE ASSESSMENT.

80' 0 80'
GRAPHIC SCALE - IN FEET

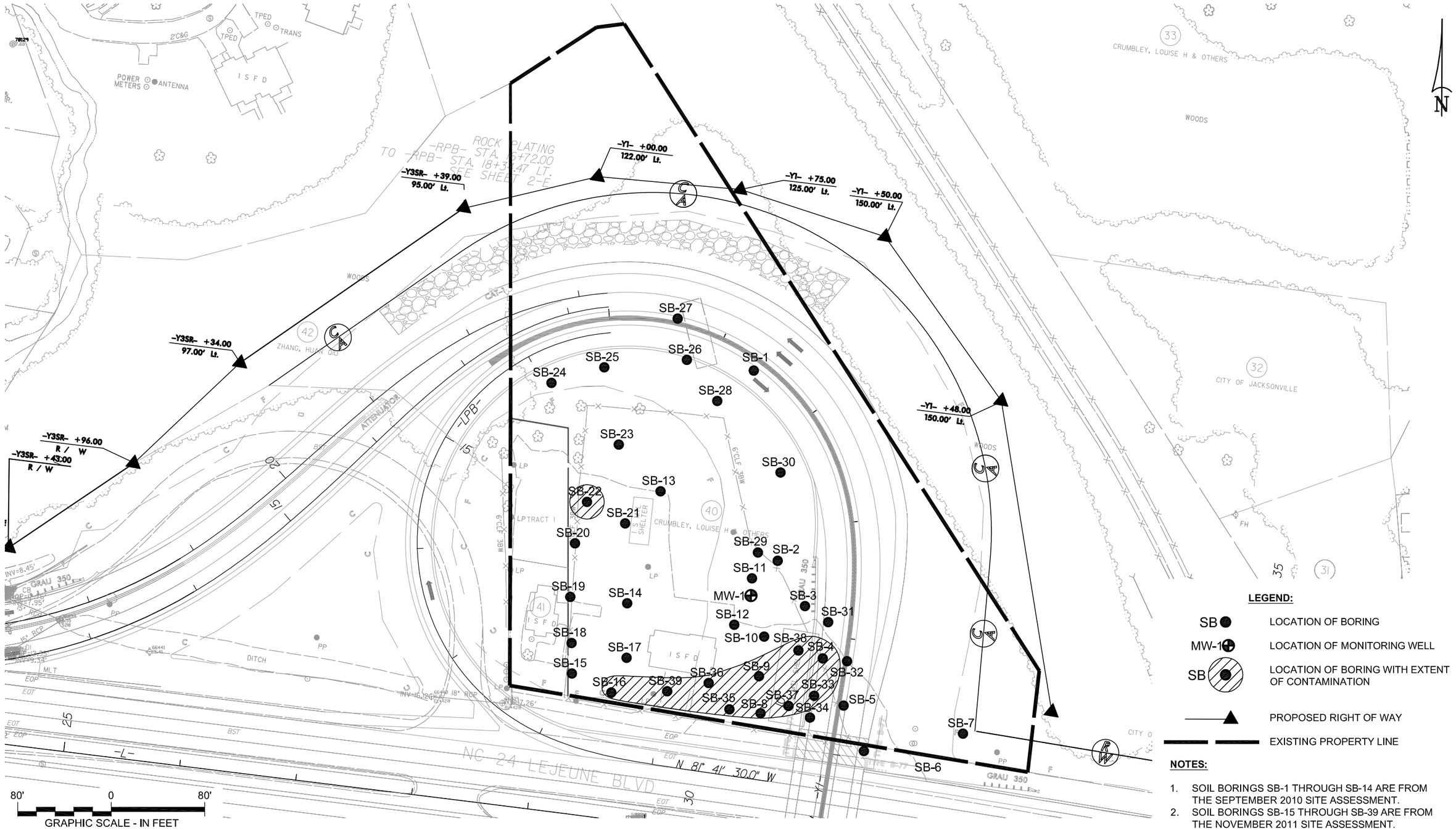
AMEC E&I, Inc.
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA

SITE MAP AND ANALYTICAL DATA
FORMER CRUMBLEY PROPERTY, PARCEL #905
PROJECT No. U-5132 TIP No. 45155.1.1
JACKSONVILLE, NORTH CAROLINA

DRAWN:	R.R.	DATE:	DECEMBER 2011
ENG CHECK:		SCALE:	AS SHOWN
APPROVAL:		JOB No.:	6470-11-0529

FIGURE 3

REFERENCE: AMEC FIELD NOTES; LABORATORY TEST RESULTS.



LEGEND:

SB ●	LOCATION OF BORING
MW-1 ⊕	LOCATION OF MONITORING WELL
SB ⊘	LOCATION OF BORING WITH EXTENT OF CONTAMINATION
——▲——	PROPOSED RIGHT OF WAY
———	EXISTING PROPERTY LINE

NOTES:

1. SOIL BORINGS SB-1 THROUGH SB-14 ARE FROM THE SEPTEMBER 2010 SITE ASSESSMENT.
2. SOIL BORINGS SB-15 THROUGH SB-39 ARE FROM THE NOVEMBER 2011 SITE ASSESSMENT.

AMEC E&I, Inc.
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA

SITE MAP WITH ESTIMATED AREA OF CONTAMINATION
FORMER CRUMBLEY PROPERTY, PARCEL #905
PROJECT No. U-5132 TIP No. 45155.1.1
JACKSONVILLE, NORTH CAROLINA

DRAWN:	R.R.	DATE:	DECEMBER 2011
ENG CHECK:		SCALE:	AS SHOWN
APPROVAL:		JOB No.:	6470-11-0529

FIGURE 4

REFERENCE: AMEC FIELD NOTES.

P:\6470\11\0529 NCDOT PSA Chico Tires Jacksonville\Drawings\Site Location Map- Parcel 905.dwg Fri, 16 Dec 2011 - 9:39am roya.rahie

APPENDIX A

2010 FORMER CRUMBLEY REPORT

REPORT OF PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT

LOUISE CRUMBLEY PROPERTY, PARCEL # 905
STATE PROJECT U-5132, TIP NO. 45155.1.1
1551 LEJEUNE BOULEVARD
JACKSONVILLE, NORTH CAROLINA

Prepared for:

North Carolina Department of Transportation
Professional Services Management Unit
1592 Mail Service Center
Raleigh, North Carolina 27699

Prepared by:

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

MACTEC Project No. 6470-10-0207

October 29, 2010

MACTEC

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engineering and constructing a better tomorrow

October 29, 2010

Mr. Cathy Houser, P.E.
NCDOT Professional Services Management Unit
1592 Mail Service Center
Raleigh, North Carolina 27699

Subject: **Report of Preliminary Environmental Site Assessment**
Louise Crumbley Property, Parcel #905
State Project U-5132, Tip No. 45155.1.1
1551 Lejeune Boulevard
Jacksonville, North Carolina
MACTEC Project No. 6470-10-0207

Dear Ms. Houser:

As authorized by your acceptance of MACTEC Proposal No. PROP 10-RAL-385 dated September 10, 2010, MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to submit the attached Report of Preliminary Environmental Site Assessment for the above-referenced site.

This report is intended for the use of NCDOT subject to contractual terms between NCDOT and MACTEC. Reliance on this document by any other party is not allowed without the expressed, written consent of MACTEC. Use of this report for purposes beyond those reasonably intended by NCDOT and MACTEC will be at the sole risk of the user.

This report presents project information and assessment activities conducted, along with our findings, conclusions and recommendations. We appreciate your selection of MACTEC for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Matthew J. Gillis
Staff Scientist

Robert M. Miller, P.E.
Senior Project Manager/Principal Engineer

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue, Raleigh, NC 27604 • Phone: 919.876.0416 • Fax:
License Number: NC Engineering F-0653 NC Geology C-247

www.mactec.com

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1.0 INTRODUCTION

MACTEC Engineering and Consulting, Inc. (MACTEC) was contracted by North Carolina Department of Transportation (NCDOT) to perform a Preliminary Environmental Site Assessment of the property owned by Louise Crumbley located at 1551 Lejeune Boulevard in Jacksonville, Onslow County, North Carolina (Figure 1). This property was one of two sites that were investigated by MACTEC in conjunction with State Project U-5132. MACTEC understands that NCDOT is planning road improvements to the area. The entire property is being acquired by NCDOT for this project. NCDOT requested that MACTEC assess the subject site to evaluate the extent (if any) of soil contamination related to activity (past or present) at this location and the impact (if any) on the proposed road improvements. This report presents MACTEC's assessment activities, findings, conclusions and recommendations.

1.1 Site Location

The Louise Crumbley (Crumbley) property is located at 1551 Lejeune Boulevard in Jacksonville, Onslow County, North Carolina. The site consists of approximately 3.75 acres of land and is developed as Chico's New and Used Tires. The Onslow County Geographic Information Services (GIS) identifies the site as parcel identification number (PIN) 438610365121. The site is bound to the north by wooded, undeveloped land and railroad tracks; to the east by wooded, undeveloped land and railroad tracks, across which is a single-family residence; to the south by Lejeune Boulevard, across which is wooded, undeveloped land; and to the west by the Ronnie Henderson Property Parcel #906 and wooded, undeveloped land (Figure 2).

1.2 Background Information

The Crumbley property building is 1,450 square feet in area and is constructed with a concrete slab foundation and concrete block exterior. MACTEC observed a storage garage and a canopy area used to store tires. The asphalt parking lot provides access to Lejeune Boulevard. MACTEC observed a gas station canopy and three former dispenser islands to the east of the building.

During performance of another project, MACTEC learned that the North Carolina Department of Environment and Natural Resources (NCDENR) has identified this parcel as a site with existing groundwater contamination and has rated this site as a "Low" priority, indicating that known contamination is unlikely to impact off-site concerns.

2.0 ASSESSMENT ACTIVITIES

Prior to field activities, MACTEC prepared a site health and safety plan in accordance with OSHA 1910.120 requirements. MACTEC contacted ULOCO and contracted Priority Underground Locating to mark the locations of underground utilities at the site. NCDOT contracted with Schnabel Engineering (Schnabel) to perform a geophysical survey to identify suspected USTs on the property and to identify buried utilities at the site. Schnabel provided paint mark outs of buried utilities and suspected UST locations to MACTEC prior to our assessment activities. Schnabel did not identify anomalies that may be USTs. Schnabel's Geophysics Report is included in Appendix A.

2.1 Soil Assessment

On September 20, 2010, Troxler Geologic Services, Inc. (Troxler), under contract to MACTEC, advanced 14 soil borings (Nos. SB-1 through SB-14) at the subject site using a Geoprobe™ direct-push technology. Soil boring locations were selected based on the results of the geophysical investigation and field observations. Figure 2 shows a site layout and the locations of the soil borings. Coordinates of the soil boring locations were recorded using a hand-held GPS.

MACTEC collected soil samples from each boring using the procedures outlined in Appendix B. Copies of soil boring records are included in Appendix C.

MACTEC instructed Troxler to advance each soil boring to approximately eight feet below ground surface (bgs), due to the shallow groundwater table. MACTEC screened soil samples from each boring at one-foot intervals for volatile organic vapors using a photoionization detector (PID) and selected one soil sample from each boring for laboratory testing. MACTEC selected the soil sample that exhibited the highest PID measurement or the deepest, unsaturated soil sample if the PID did not detect organic vapors. Soil borings SB-1 through SB-14 were backfilled with the excess soil cuttings and bentonite chips.

2.2 Soil Analysis

MACTEC submitted the soil samples to SGS North America, Inc. (SGS) of Wilmington, North Carolina for analysis for total petroleum hydrocarbons (TPH) diesel range organics (DRO) according to EPA Preparation/Test Methods 3550/8015, and TPH gasoline range organics (GRO) according to EPA Preparation/Testing Methods 5035/8015.

3.0 LABORATORY RESULTS

The laboratory test results are summarized on Table 1. The laboratory test reports and chain-of-custody records are included in Appendix D.

3.1 Soil Sample Analytical Results

The laboratory detected TPH DRO in the soil samples collected from soil borings SB-4, SB-8, and SB-9 at concentrations that exceed NCDENR's Action Level of 10 mg/Kg. The laboratory detected TPH GRO in the soil samples collected from soil borings SB-8 and SB-9 at concentrations that exceed the NCDENR Action Level of 10 mg/Kg.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the Preliminary Environmental Site Assessment, MACTEC offers the following conclusions and recommendations:

- The laboratory detected TPH DRO in three soil samples (SB-4, SB-8 and SB-9) and TPH GRO in two soil samples (SB-8 and SB-9) at concentrations which exceed NCDENR's Action Level of 10 mg/Kg.

- If the impacted soil at the location of SB-4 extends up to five feet horizontally in all directions and five feet vertically from the boring location, an estimated total of 15 cubic yards of impacted soil is present at this location. Figure 2 shows the extent of impacted soil.

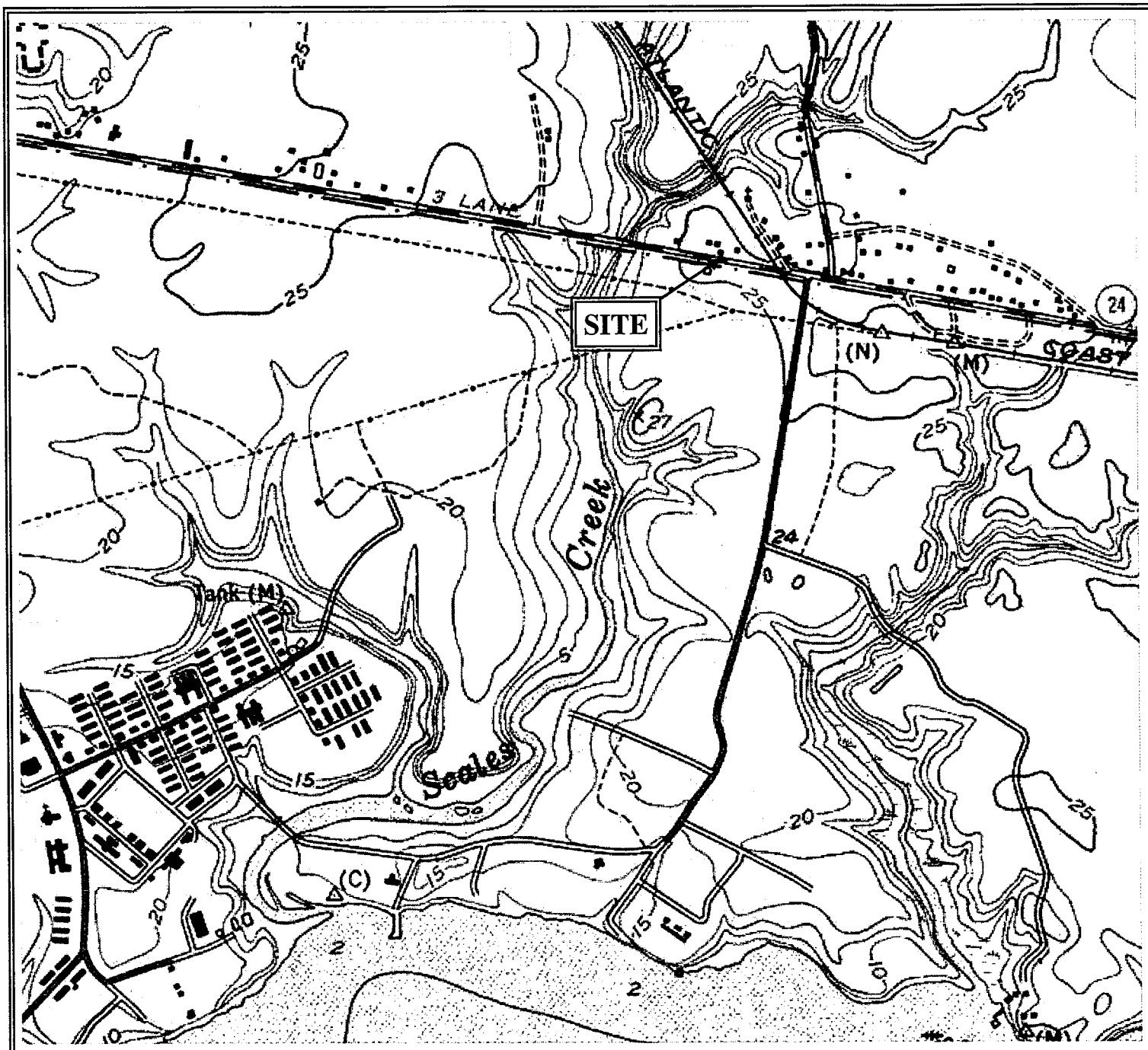
- Soil borings SB-8 and SB-9 are contiguous. If all soil between these borings is considered impacted to a depth of five vertical feet, and for a width of five feet on either side of the boring extending five feet beyond each boring, a total of approximately 47 cubic yards of soil is impacted in this area. Figure 2 shows the extent of impacted soil.

- The presence of TPH is evidence of a release of petroleum. MACTEC recommends notifying the property owner of this finding, who should then report this evidence to the Wilmington Regional Office of NCDENR.

5.0 QUALIFICATIONS

This assessment was performed under a limited scope for those purposes described above. The conclusions and recommendations presented in this report are based upon the data that were reviewed and documented in this report along with our experience on similar projects. The discovery of any additional information concerning environmental conditions at the site should be reported to MACTEC for additional review so that potential environmental impacts can be reassessed and the conclusions and recommendations modified, if appropriate.

FIGURES



NORTH

JACKSONVILLE SOUTH, NC

1997

NIMA 5553 III NW-Series V 842

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
1000 0 1000 2000

QUADRANGLE LOCATION

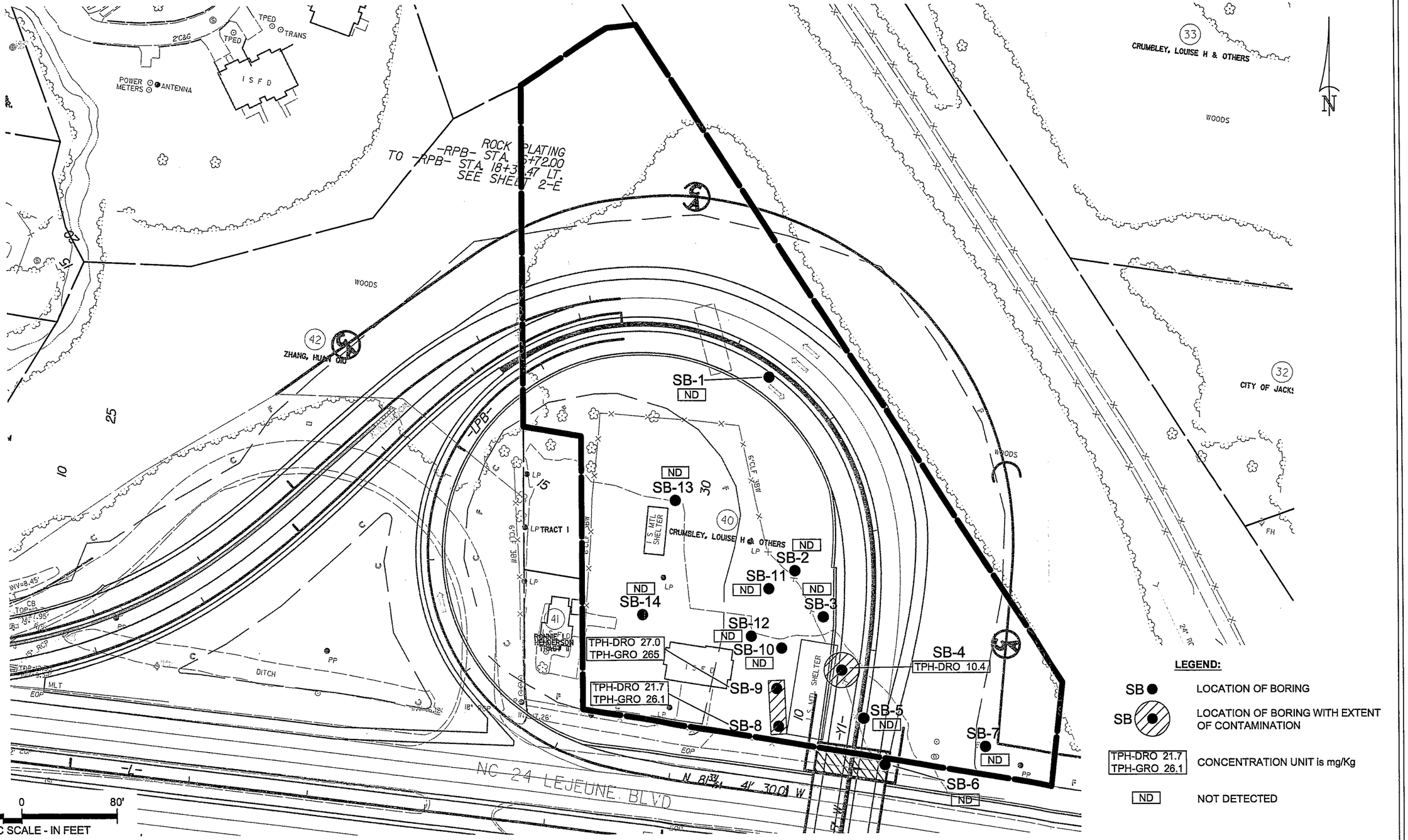
NOTE: SITE LOCATION IS APPROXIMATE

MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
3301 ATLANTIC AVENUE
RALEIGH, NORTH CAROLINA

TOPOGRAPHIC SITE MAP
LOUISE CRUMBLEY PROPERTY
PARCEL #905
JACKSONVILLE, NORTH CAROLINA

DRAWN: MJG	DATE: OCTOBER 2010	FIGURE
ENG CHECK: CBS	SCALE: 1 : 12000	1
APPROVAL:	JOB: 6470-10-0207	



MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
3301 ATLANTIC AVENUE
RALEIGH, NORTH CAROLINA

SITE LOCATION MAP
LOUISE CRUMBLEY PROPERTY, PARCEL #905
PROJECT No. U-5132 TIP No. 45155.1.1
JACKSONVILLE, NORTH CAROLINA

DRAWN:	R.R.	DATE:	OCTOBER 2010
ENG CHECK:	MJG	SCALE:	AS SHOWN
APPROVAL:		JOB No.:	6470-10-0207

FIGURE 2

REFERENCE: MACTEC FIELD NOTES; LABORATORY TEST RESULTS.

P:\6470\10\0207 U-5132 PSAs in Onslow County\Drawings\Site Location Map- Parcel 905.dwg Thu, 28 Oct 2010 - 10:20am mahle

TABLE

Table 1
Summary of Laboratory Test Results
State Project U-5132, TIP No. 45155.1.1
Louise Crumbley Property, Parcel #905
Jacksonville, North Carolina
MACTEC Job No. 6470-10-0207

Analytical Method →			*EPA 8015*	*EPA 8015*
Contaminant of Concern →			*TPH-DRO*	*TPH-GRO*
Sample ID	**Date Collected**	**Sample Depth**		
			mg/Kg	
SB-1	9/20/2010	7'-8'	<7.43	<4.96
SB-2	9/20/2010	7'-8'	<7.90	<5.98
SB-3	9/20/2010	7'-8'	<7.77	<5.55
SB-4	9/20/2010	7'-8'	**10.4**	<5.44
SB-5	9/20/2010	7'-8'	<8.39	<5.95
SB-6	9/20/2010	7'-8'	<7.62	<5.30
SB-7	9/20/2010	7'-8'	<6.46	<6.45
SB-8	9/20/2010	0'-1'	**21.7**	**26.1**
SB-9	9/20/2010	5'-6'	**27.0**	**265**
SB-10	9/20/2010	7'-8'	<7.80	<5.40
SB-11	9/20/2010	7'-8'	<7.16	<4.74
SB-12	9/20/2010	7'-8'	<7.64	<6.33
SB-13	9/20/2010	7'-8'	<6.76	<5.71
SB-14	9/20/2010	7'-8'	<7.90	<5.68
NCDENR Action Level			*10*	*10*

Notes:

NCDENR	North Carolina Department of Environment and Natural Resources
Bold	Concentration exceeds Reporting Limit (RL)
Bold	Concentration exceeds the NCDENR Action Level
<#	Analyte not detected above the RL

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

APPENDIX A

SCHNABEL GEOPHYSICS REPORT

Schnabel
ENGINEERING

October 14, 2010

Terry W. Fox, LG
NCDOT, Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

RE:
State Project: U-5132
WBS Element: 45155.1.1
County: Onslow
Description: Jacsonville – NC 24 (Lejeune Blvd) Trumpet Interchange between SR 1308 (Bell Fork Road) and the US 17 Bypass

Subject: Project 09210013.28 Report on Geophysical Surveys
Parcels 905 and 906, Onslow County, North Carolina

Dear Mr. Fox:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we conducted on the subject site. The report includes two 8.5x11 and two 11x17 color figures.

INTRODUCTION

The work described in this report was conducted on September 13, 14, and 15, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted over the accessible areas of the parcels as indicated by the NCDOT to support their environmental assessment of the subject properties (Louise Crumbley Property and Ronnie Henderson Property). Photographs of the parcels are included on Figure 1. The properties are located on the north side of NC 24 between SR 1308 (Bell Fork Road) and the US 17 Bypass in Jacksonville, NC. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) and associated metal product lines in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies, including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (monitoring wells, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of UST's. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcels 905 and 906 are shown on Figures 3 and 4. The EM61 early time gate results are plotted on Figure 3. The early time gate data provide the more sensitive detection of metal objects. Figure 4 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show anomalies apparently caused by buried utilities and known site features (Figures 3 and 4). The GPR data collected at the site do not indicate the presence of metallic UST's within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject properties on Project U-5132 in Jacksonville, NC indicates the following:

The geophysical data do not indicate the presence of metallic UST's in the areas surveyed on the subject properties.

LIMITATIONS

These services have been performed and this report prepared for the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

Jeremy S Strohmeyer, LG
Project Manager

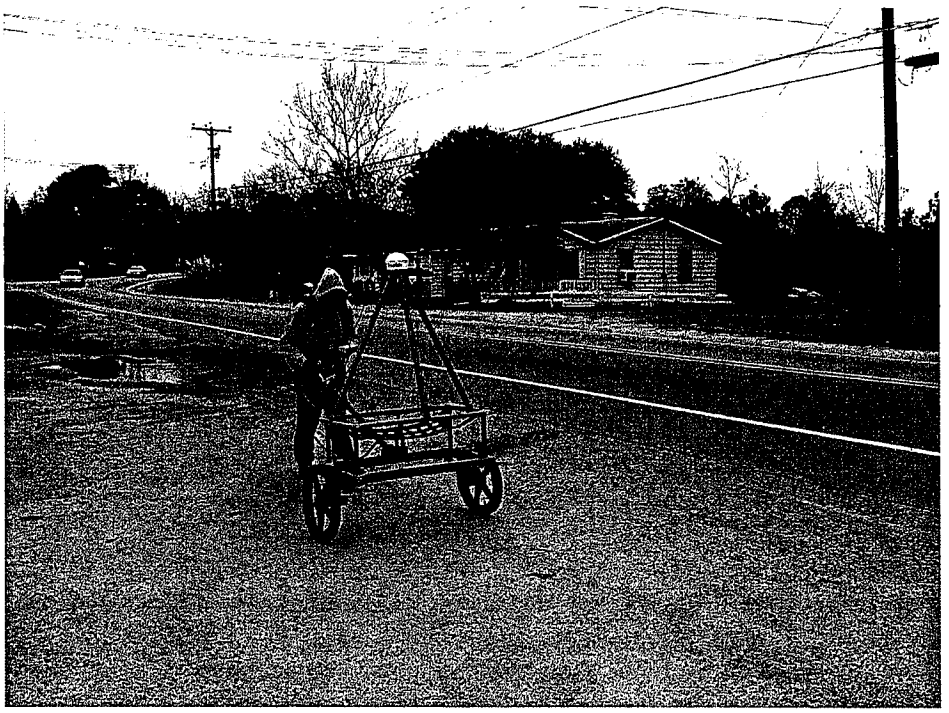
Edward D Billington, LG
Senior Vice President

JW:JS:NB
Attachments: Figures (4)
FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.28 (U-5132, ONSLOW COUNTY)\REPORT\SCHNABEL GEOPHYSICAL REPORT ON U-5132.DOCX

Parcel 905 – Louise Crumbley Property, looking east

Parcel 906 – Ronnie Henderson Property, looking north

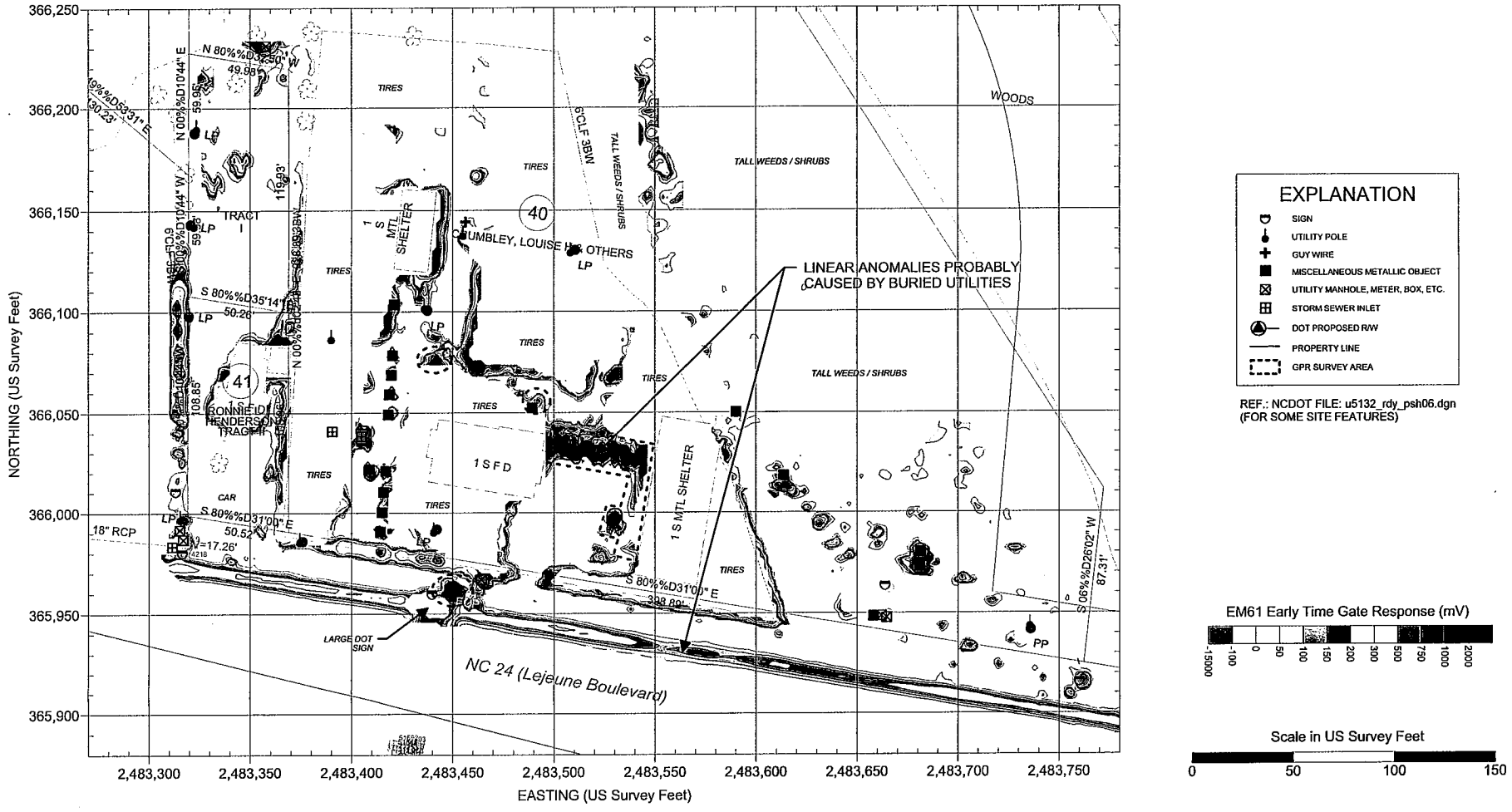
Schnabel ENGINEERING	STATE PROJECT U-5132 NC DEPT. OF TRANSPORTATION ONSLOW COUNTY, NORTH CAROLINA PROJECT NO. 09210013.28	PARCELS 905 AND 906 SITE PHOTOS FIGURE 1



Geonics EM61-MK2

GSSI SIR-3000

Schnabel ENGINEERING	STATE PROJECT U-5132 NC DEPT. OF TRANSPORTATION ONSLOW COUNTY, NORTH CAROLINA PROJECT NO. 09210013.28	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2



EXPLANATION

- SIGN
- UTILITY POLE
- GUY WIRE
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- STORM SEWER INLET
- DOT PROPOSED R/W
- PROPERTY LINE
- GPR SURVEY AREA

REF.: NCDOT FILE: u5132_rdy_psh06.dgn
(FOR SOME SITE FEATURES)

EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet

0 50 100 150

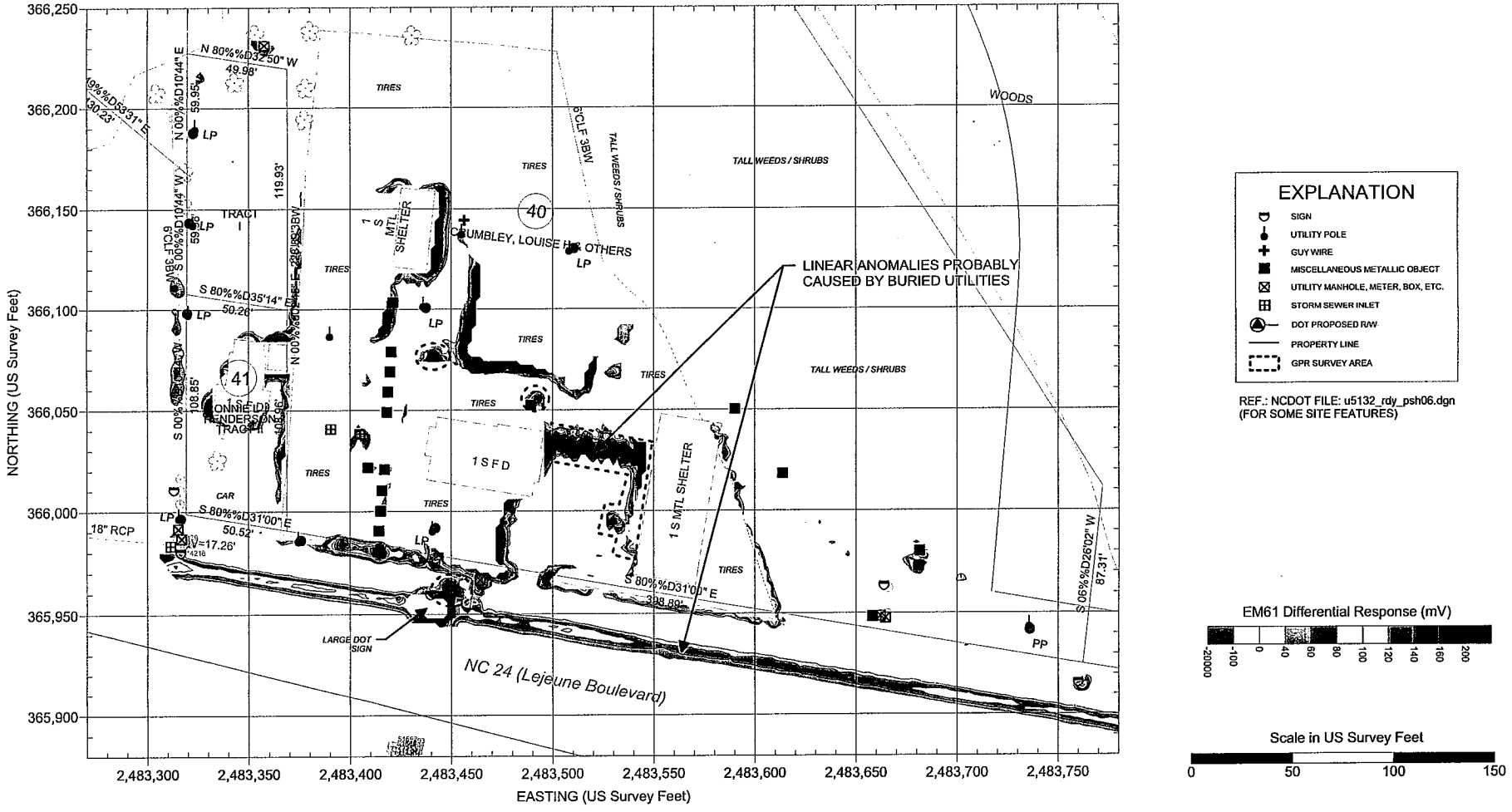
Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on September 13 through 15, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on September 15, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-5132
NC DEPARTMENT OF TRANSPORTATION
ONSLOW COUNTY, NORTH CAROLINA
PROJECT NO. 09210013.28

PARCELS 905 & 906
EM61 EARLY TIME GATE RESPONSE

FIGURE 3



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on September 13 through 15, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on September 15, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-5132
NC DEPARTMENT OF TRANSPORTATION
ONSLOW COUNTY, NORTH CAROLINA
PROJECT NO. 09210013.28

PARCELS 905 & 906
EM61 DIFFERENTIAL RESPONSE
FIGURE 4

APPENDIX B

PROCEDURES FOR COLLECTING SOIL SAMPLES

Procedure for Collecting Soil Samples
for Laboratory Testing Using the Geoprobe

- MACTEC will collect the soil samples using the Geoprobe hammer impact system. Downforce or percussion will be utilized to advance the sampler to the desired depth to obtain the soil sample.

- Soil cores will be retrieved from the sampler and classified by an on-site geologist or engineer. The one-inch diameter cores are approximately four feet in length and are contained within a pre-cleaned, disposable plastic sleeve.

- Soil samples from the boring soil cores will be placed in pre-labeled, airtight, plastic "twin" bags.

- After several minutes, the gas contained in the "headspace" or void area within one of the twin bags will be tested with a photoionization detector (PID) or flame ionization detector (FID).

- The duplicate of the sample that exhibits the highest headspace reading will be submitted to the laboratory for testing. The remaining portion of the soil core will be utilized for classification purposes.

- The soils will be classified in accordance with the Unified Soils Classification System.

- The soil sample will be placed into laboratory-supplied bottles.

- Sample bottles will be labeled prior to sample collection.

- Caps will be secured on bottles.

- All sample containers will be placed in plastic bags and the bags sealed.

- Documentation, including chain-of-custody record and laboratory analytical request form, will be completed for all samples.

- Samples will be packed in coolers with "bubble wrap" and ice packs for shipment to the laboratory.

- The chain-of-custody record and analytical request form will be placed inside the cooler, which will be sealed with security tape.

- Samples will be sent to the analytical laboratory by overnight courier.

APPENDIX C

SOIL BORING RECORDS

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-1	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Dark brown clayey, silty fine to medium sand		0.0	
1-2	Dark brown clayey, silty fine to medium sand		0.0	
2-3	Light brown clayey, silty fine to medium sand		0.0	
3-4	Light brown clayey, silty fine to medium sand		0.0	
4-5	Light brown clayey, silty fine to medium sand		0.0	
5-6	Light brown clayey, silty fine to medium sand		0.0	
6-7	Light brown clayey, silty fine to medium sand		0.0	
7-8	Light brown clayey, silty fine to medium sand	1050	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-2	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Dark brown silty fine to medium sand		0.0	
1-2	Dark brown silty fine to medium sand		0.0	
2-3	Brown clayey, silty fine to medium sand		0.0	
3-4	Brown clayey, silty fine to medium sand		0.0	
4-5	Brown clayey, silty fine to medium sand		0.0	
5-6	Brown clayey, silty fine to medium sand		0.0	
6-7	Brown clayey, silty fine to medium sand		0.0	
7-8	Brown clayey, silty fine to medium sand	1100	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-3	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm) PID	Comments
0-1	Brown silty fine to medium sand		0.0	
1-2	Brown silty fine to medium sand		0.0	
2-3	Light brown clayey, silty fine to medium sand		0.0	
3-4	Light brown clayey, silty fine to medium sand		0.0	
4-5	Light brown clayey fine to medium sand		0.0	
5-6	Light brown clayey fine to medium sand		0.0	
6-7	Light brown clayey fine to medium sand		0.0	
7-8	Light brown clayey fine to medium sand	1120	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-4	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Brown clayey, silty fine to medium sand		0.0	
1-2	Brown clayey, silty fine to medium sand		0.0	
2-3	Brown clayey, silty fine to medium sand		0.0	
3-4	Light brown clayey fine to medium sand		0.0	
4-5	Light brown clayey fine to medium sand		0.0	
5-6	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gray clayey fine to medium sand	1140	5.3	Sample

Prepared by: MJO Date: 10/29/10

Checked by: CBS Date: 10/29/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-5	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Light brown clayey, silty fine to medium sand		0.0	
1-2	Light brown clayey, silty fine to medium sand		0.0	
2-3	Light brown clayey, silty fine to medium sand		0.0	
3-4	Light brown clayey, silty fine to medium sand		0.0	
4-5	Light brown to gray clayey fine to medium sand		0.0	
5-6	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gray clayey fine to medium sand	1145	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-6	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Light brown clayey, silty fine to medium sand		0.0	
1-2	Light brown clayey, silty fine to medium sand		0.0	
2-3	Light brown clayey, silty fine to medium sand		0.0	
3-4	Light brown to gray clayey fine to medium sand		0.0	
4-5	Light brown to gray clayey fine to medium sand		0.0	
5-6	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gray clayey fine to medium sand	1155	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-7	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Light brown clayey, silty fine to medium sand		0.0	
1-2	Light brown clayey, silty fine to medium sand		0.0	
2-3	Light brown clayey fine to medium sand		0.0	
3-4	Light brown clayey fine to medium sand		0.0	
4-5	Light brown clayey fine to medium sand		0.0	
5-6	Brown silty fine to medium sand		0.0	
6-7	White fine sand		0.0	
7-8	White fine sand	1210	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-8	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Black silty fine to medium sand	1225	31.6	Sample
1-2	Light brown to gray clayey fine to medium sand		2.5	
2-3	Light brown to gray clayey fine to medium sand		1.0	
3-4	Light brown to gray clayey fine to medium sand		2.5	
4-5	Light brown to gray clayey fine to medium sand		0.5	
5-6	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gray clayey fine to medium sand		0.0	

Prepared by: NJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-9	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Black silty fine to medium sand		17.1	
1-2	Brown to light brown clayey fine to medium sand		4.2	
2-3	Brown to light brown clayey fine to medium sand		15.5	
3-4	Brown to light brown clayey fine to medium sand		401	
4-5	Brown to light brown clayey fine to medium sand		418	
5-6	Brown to light brown clayey fine to medium sand	1240	1,004	Sample
6-7	Brown to light brown clayey fine to medium sand		75.4	
7-8	Brown to light brown clayey fine to medium sand		299	

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-10	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Black silty fine to medium sand		3.2	
1-2	Light brown clayey fine to medium sand		6.4	
2-3	Light brown clayey fine to medium sand		0.5	
3-4	Light brown clayey fine to medium sand		0.2	
4-5	Light brown to gray clayey fine to medium sand		0.8	
5-6	Light brown to gray clayey fine to medium sand		1.1	
6-7	Light brown to gray clayey fine to medium sand		2.0	
7-8	Light brown to gray clayey fine to medium sand	1255	8.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-11	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Brown silty fine to medium sand		0.0	
1-2	Brown silty fine to medium sand		0.0	
2-3	Light brown to gray clayey fine to medium sand		0.0	
3-4	Light brown to gray clayey fine to medium sand		0.0	
4-5	Light brown to gray clayey fine to medium sand		0.0	
5-6	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gray clayey fine to medium sand	1410	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-12	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Light brown fine to medium sand (Fill)		0.0	
1-2	Light brown fine to medium sand (Fill)		0.0	
2-3	Light brown fine to medium sand (Fill)		0.0	
3-4	Light brown fine to medium sand (Fill)		0.0	
4-5	Light brown fine to medium sand (Fill)		0.0	
5-6	Light brown fine to medium sand (Fill)		0.0	
6-7	Light brown fine to medium sand (Fill)		0.0	
7-8	Light brown fine to medium sand (Fill)	1420	0.0	Sample

Prepared by: MJO Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-13	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Brown silty fine to medium sand		0.0	
1-2	Brown silty fine to medium sand		0.0	
2-3	Light brown clayey fine to medium sand		0.0	
3-4	Light brown clayey fine to medium sand		0.0	
4-5	Light brown clayey fine to medium sand		0.0	
5-6	Light brown to gray fine to medium sand		0.0	
6-7	Light brown to gray fine to medium sand		0.0	
7-8	Light brown to gray fine to medium sand	1430	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	Soil Boring Sample Record

MACTEC Project ID: Louise Crumbley Property, Parcel #905	**MACTEC Field Representative**
MACTEC Project #: 6470-10-0207	Gillis
Date: 9-20-10	
Boring ID: SB-14	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Brown silty fine to medium sand		0.0	
1-2	Brown silty fine to medium sand		0.0	
2-3	Brown silty fine to medium sand		0.0	
3-4	Brown silty fine to medium sand		0.0	
4-5	Light brown to gray clayey fine to medium sand		0.0	
5-6	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gray clayey fine to medium sand	1445	0.0	Sample

Prepared by: MJG Date: 10-1-10

Checked by: CBS Date: 10/28/10

APPENDIX D

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

Matt Gillis
Mactec
3301 Atlantic Ave.
Raleigh, NC 27604

Report Number: G132-2239

Client Project: NCDOT Jacksonville

Dear Matt Gillis,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Barbara Hager at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America, Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America, Inc.

Barbara Hager 28-Sept.-10

Project Manager
Barbara Hager

Date

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

UJ = Target analytes with recoveries that are 10% < %R < LCL; # of MEs are allowable and compounds are not detected in the sample.

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:
1) Metals and mercury samples are digested with a hot block; see the standard operating procedure document for details.
2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.021808.4

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-1
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-1D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 10:50
Date Received: 9/22/2010
Matrix: Soil
Solids 82.89
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.43	mg/Kg	1	09/24/10 12:46

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.3	80.8

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.49 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-2
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-2D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 11:00
Date Received: 9/22/2010
Matrix: Soil
Solids 75.66
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.90	mg/Kg	1	09/23/10 19:50

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	28.1	70.1

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 33.44 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-3
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-3D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 11:20
Date Received: 9/22/2010
Matrix: Soil
Solids 77.16
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.77	mg/Kg	1	09/23/10 21:15

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.6	76.6

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 33.34 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-4
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-4D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 11:40
Date Received: 9/22/2010
Matrix: Soil
Solids 76.32
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**10.4**	7.88	mg/Kg	1	09/23/10 21:43

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	29.7	74.3

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 33.27 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-5
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-5D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 11:45
Date Received: 9/22/2010
Matrix: Soil
Solids 74.09
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	8.39	mg/Kg	1	09/23/10 22:12

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.9	77.3

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.17 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-6
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-6D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 11:55
Date Received: 9/22/2010
Matrix: Soil
Solids 81.85
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.62	mg/Kg	1	09/23/10 22:40

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.6	76.5

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.06 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By: DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-7
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-7D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 12:10
Date Received: 9/22/2010
Matrix: Soil
Solids 91.67
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.46	mg/Kg	1	09/24/10 09:53

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	33.2	82.9

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 33.78 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-8
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-8D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 12:25
Date Received: 9/22/2010
Matrix: Soil
Solids 83.83
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**21.7**	7.10	mg/Kg	1	09/23/10 23:08

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31	77.6

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 33.62 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-9
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-9D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 12:40
Date Received: 9/22/2010
Matrix: Soil
Solids 76.54
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**27.0**	8.08	mg/Kg	1	09/23/10 23:36

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.2	75.5

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.32 G
Prep Final Vol: 10 mL

Analyst: FX

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-10
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-10D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 12:55
Date Received: 9/22/2010
Matrix: Soil
Solids 78.88
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.80	mg/Kg	1	09/24/10 00:04

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.4	78.6

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.5 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-11
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-11D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 14:10
Date Received: 9/22/2010
Matrix: Soil
Solids 87.09
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.16	mg/Kg	1	09/24/10 00:32

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	33.1	82.7

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.08 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-12
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-12D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 14:20
Date Received: 9/22/2010
Matrix: Soil
Solids 79.59
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.64	mg/Kg	1	09/24/10 01:00

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.2	80.5

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.9 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-13
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-13D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 14:30
Date Received: 9/22/2010
Matrix: Soil
Solids 90.52
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.76	mg/Kg	1	09/24/10 01:28

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.5	81.3

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.67 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-14
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-14D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 14:45
Date Received: 9/22/2010
Matrix: Soil
Solids 77.67
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.90	mg/Kg	1	09/24/10 01:56

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.8	81.9

Comments:

Batch Information

Analytical Batch: EP092310
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17426
Prep Method: 3541
Prep Date: 09/23/10
Initial Prep Wt/Vol: 32.6 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-15
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-15D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 15:10
Date Received: 9/22/2010
Matrix: Soil
Solids 79.22
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**17.9**	7.63	mg/Kg	1	09/24/10 16:02

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.7	76.7

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17435
Prep Method: 3541
Prep Date: 09/24/10
Initial Prep Wt/Vol: 33.07 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-16
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-16D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 15:20
Date Received: 9/22/2010
Matrix: Soil
Solids 78.26
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.78	mg/Kg	1	09/24/10 16:30

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.2	75.4

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17435
Prep Method: 3541
Prep Date: 09/24/10
Initial Prep Wt/Vol: 32.84 G
Prep Final Vol: 10 mL

Analyst: FX

NC Certification #481

Reviewed By:

DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-17
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-17D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 15:30
Date Received: 9/22/2010
Matrix: Soil
Solids 77.25
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**17.2**	7.91	mg/Kg	1	09/24/10 16:58

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.5	76.3

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17435
Prep Method: 3541
Prep Date: 09/24/10
Initial Prep Wt/Vol: 32.75 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-18
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-18D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 15:40
Date Received: 9/22/2010
Matrix: Soil
Solids 83.46
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.37	mg/Kg	1	09/24/10 17:26

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	28.4	71.1

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17435
Prep Method: 3541
Prep Date: 09/24/10
Initial Prep Wt/Vol: 32.53 G
Prep Final Vol: 10 mL

Analyst: FA

NC Certification #481

Reviewed By:

DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-19
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-19D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 15:50
Date Received: 9/22/2010
Matrix: Soil
Solids 88.32
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.96	mg/Kg	1	09/24/10 17:55

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	33.7	84.4

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17435
Prep Method: 3541
Prep Date: 09/24/10
Initial Prep Wt/Vol: 32.55 G
Prep Final Vol: 10 mL

Analyst: EM

NC Certification #481

Reviewed By:

DRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-20
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-20D
Lab Project ID: G132-2239

Date Collected: 9/20/2010 16:00
Date Received: 9/22/2010
Matrix: Soil
Solids 84.56
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.34	mg/Kg	1	09/24/10 18:23

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	29.5	73.7

Comments:

Batch Information

Analytical Batch: EP092410
Analytical Method: 8015
Instrument: GC6
Analyst: BWS

Prep batch: 17435
Prep Method: 3541
Prep Date: 09/24/10
Initial Prep Wt/Vol: 32.22 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-1
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-1A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 9/20/2010 10:50
Date Received: 9/22/2010
Matrix: Soil
Solids 82.89

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.96	mg/Kg	1	09/23/10 17:43

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	108.0	108.0		70-130

Comments:

Batch Information

Analytical Batch: VP092310
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 7.3 g
Final Volume: 5 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID:	SB-2	Analyzed By:	BAO
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 11:00
Lab Sample ID:	G132-2239-2A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	75.66

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.98	mg/Kg	1	09/23/10 18:10

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	104.0	104.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092310	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.63 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	BAO		

Analyst: _____

NC Certification #481

Reviewed By: _____

GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-3
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-3A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 9/20/2010 11:20
Date Received: 9/22/2010
Matrix: Soil
Solids 77.16

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.55	mg/Kg	1	09/23/10 18:37

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	109.0	109.0		70-130

Comments:

Batch Information

Analytical Batch: VP092310
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 7.01 g
Final Volume: 5 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID:	SB-4	Analyzed By:	BAO
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 11:40
Lab Sample ID:	G132-2239-4A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	76.32

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.44	mg/Kg	1	09/23/10 19:03

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092310	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	7.22 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	BAO		

Analyst: _____

NC Certification #481

Reviewed By: _____

GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: SB-5
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-5A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 9/20/2010 11:45
Date Received: 9/22/2010
Matrix: Soil
Solids 74.09

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.95	mg/Kg	1	09/23/10 19:30

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	105.0	105.0		70-130

Comments:

Batch Information

Analytical Batch: VP092310
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.8 g
Final Volume: 5 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-6
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-6A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 11:55
Date Received: 9/22/2010
Matrix: Soil
Solids 81.85

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.30	mg/Kg	1	09/24/10 13:49

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	113.0	113.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.92 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By:

GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: SB-7
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-7A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 12:10
Date Received: 9/22/2010
Matrix: Soil
Solids 91.67

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.45	mg/Kg	1	09/24/10 14:16

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	107.0	107.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 5.07 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: SB-8
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-8A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 12:25
Date Received: 9/22/2010
Matrix: Soil
Solids 83.83

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	**26.1**	5.53	mg/Kg	1	09/24/10 14:43

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	107.0	107.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.47 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID:	SB-9	Analyzed By:	LMC
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 12:40
Lab Sample ID:	G132-2239-9A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	76.54

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	**265**	5.89	mg/Kg	10	09/27/10 21:12

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	107.0	107.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092710	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.65 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	LMC		

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: SB-10
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-10A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 12:55
Date Received: 9/22/2010
Matrix: Soil
Solids 78.88

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.40	mg/Kg	1	09/24/10 15:37

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	111.0	111.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.04 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID:	SB-11	Analyzed By:	LMC
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 14:10
Lab Sample ID:	G132-2239-11A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	87.09

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.74	mg/Kg	1	09/24/10 16:04

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092410	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	7.27 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	LMC		

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID:	SB-12	Analyzed By:	LMC
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 14:20
Lab Sample ID:	G132-2239-12A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	79.59

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.33	mg/Kg	1	09/24/10 16:31

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092410	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	5.95 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	LMC		

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID:	SB-13	Analyzed By:	LMC
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 14:30
Lab Sample ID:	G132-2239-13A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	90.52

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.71	mg/Kg	1	09/24/10 16:58

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	109.0	109.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092410	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	5.8 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	LMC		

Analyst: LMC

NC Certification #481

Reviewed By:

GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-14
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-14A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 14:45
Date Received: 9/22/2010
Matrix: Soil
Solids 77.67

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.68	mg/Kg	1	09/24/10 17:25

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.8 g
Final Volume: 5 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID:	SB-15	Analyzed By:	LMC
Client Project ID:	NCDOT Jacksonville	Date Collected:	9/20/2010 15:10
Lab Sample ID:	G132-2239-15A	Date Received:	9/22/2010
Lab Project ID:	G132-2239	Matrix:	Soil
Report Basis:	Dry Weight	Solids	79.22

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.06	mg/Kg	1	09/24/10 17:52

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	105.0	105.0		70-130

Comments:

Batch Information

Analytical Batch:	VP092410	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	7.49 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	LMC		

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: SB-16
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-16A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 15:20
Date Received: 9/22/2010
Matrix: Soil
Solids 78.26

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.51	mg/Kg	1	09/24/10 18:19

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	108.0	108.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.96 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-17
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-17A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 15:30
Date Received: 9/22/2010
Matrix: Soil
Solids 77.25

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.28	mg/Kg	1	09/24/10 18:46

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.35 g
Final Volume: 5 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-18
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-18A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 15:40
Date Received: 9/22/2010
Matrix: Soil
Solids 83.46

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.58	mg/Kg	1	09/24/10 19:13

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.84 g
Final Volume: 5 mL

Analyst: WML

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-19
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-19A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 15:50
Date Received: 9/22/2010
Matrix: Soil
Solids 88.32

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.72	mg/Kg	1	09/24/10 19:40

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106.0	106.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.2 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: SB-20
Client Project ID: NCDOT Jacksonville
Lab Sample ID: G132-2239-20A
Lab Project ID: G132-2239
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 9/20/2010 16:00
Date Received: 9/22/2010
Matrix: Soil
Solids 84.56

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.01	mg/Kg	1	09/24/10 20:07

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	104.0	104.0		70-130

Comments:

Batch Information

Analytical Batch: VP092410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.08 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By:
GRO.XLS

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CLIENT: MACTEC
CONTACT: Matt Gillis PHONE NO:(919) 876-0416
PROJECT: NCDOT Jacksonville SITE/PWSID#: 6470-10-0207
REPORTS TO: Bob Miller rmmiller@mactec.com
FAX NO.:( )
INVOICE TO: NCDOT
QUOTE # State Project U-5132
P.O. NUMBER: WBS 45155.1.1

SGS Reference: G132-2239

PAGE 1 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used	Analysis Required (3) D20	GRO	REMARKS
	~~SB-1~~ SB-1	9/20/10	1050	Soil	3	G		X	X	
	~~SB-2~~ SB-2		1100					X	X	
	SB-3		1120					X	X	
	SB-4		1140					X	X	
	SB-5		1145					X	X	
	SB-6		1155					X	X	
	SB-7		1210					X	X	
	SB-8		1225					X	X	
	SB-9		1240					X	X	
	SB-10		1255					X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Matthew Miller	9/21/10	1330	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 9/22/10	Time 10:05	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 20, 3.5
Special Deliverable Requirements:
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
- Alaska
- New Jersey
- North Carolina
- Maryland
- New York
- Ohio

www.us.sgs.com

100872

(1)
CLIENT: MACTEC
CONTACT: Matt Gillis PHONE NO: (919) 876 0416
PROJECT: NCDOT Jacksonville SITE/PWSID#: 6470-10-0207
REPORTS TO: Bob Miller rmmiller@mactec.com FAX NO.:( )
INVOICE TO: NCDOT QUOTE #: State Project U-5132
P.O. NUMBER: WBS 45155.1.1

SGS Reference: 6122-2239

PAGE ____ OF ____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	Analysis Required (3) DRO	GRO	REMARKS
	~~SB~~ SB-11	9/20/10	1410	Soil	3	G		X	X	
	SB-12		1420					X	X	
	SB-13		1430					X	X	
	SB-14		1445					X	X	
	SB-15		1510					X	X	
	SB-16		1520					X	X	
	SB-17		1530					X	X	
	SB-18		1540					X	X	
	SB-19		1550					X	X	
	SB-20		1600					X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	9/20/10	1530	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 9/20/10	Time 10:05	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 2.0, 3.5
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ Date Needed ☐ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

APPENDIX B

PHOTO LOG

Photograph No. 1	**Remarks**
	• View of the southern side of the Site along NC 24. View is to the west.

Photograph No. 2	**Remarks**
	• View of the southern side of the Site along NC 24. View is to the east.

Photograph No. 3	**Remarks**
	• View of western side of the Site. View is to the north.

Photograph No. 4	**Remarks**
	• View of the rear of the service station. View is to the south.

Photograph No. 5	**Remarks**
	• View of former UST area and the canopy. View is to the southeast.

Photograph No. 6	**Remarks**
	• View of the canopy. View is to the south.

Photograph No. 7	**Remarks**
	• View of the service station and the canopy. View is to the west.

Photograph No. 8	**Remarks**
	• View of the northern side of the Site. View is to the north.

APPENDIX C

BORING LOGS

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-15	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		0.0	
2-4	Brown silty fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand	1015	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-16	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		0.0	
2-4	Brown silty fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand	1025	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-17	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		0.0	
2-4	Brown silty fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand	1040	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-18	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		0.0	
2-4	Brown silty fine to medium sand		0.0	
4-6	Tan clayey fine to medium sand		0.0	
6-8	Tan clayey fine to medium sand	1105	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-19	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		0.0	
2-4	Brown silty fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand	1110	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-20	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		0.0	
2-4	Brown silty fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand	1120	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-21	

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-2	Top 3” asphalt, Orange to gray clayey fine to medium sand		0.0	
2-4	Orange to gray clayey fine to medium sand		0.0	
4-5	Orange to gray clayey fine to medium sand		0.0	
5-6	Tan silty fine to medium sand		0.0	
6-8	Tan silty fine to medium sand	1135	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-22	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)** PID	**Comments**
0-2	Top 3” asphalt, Orange to gray clayey fine to medium sand		0.0	
2-4	Orange to gray clayey fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand	1145	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-23	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Gray clayey fine to medium sand		0.0	
6-8	Tan fine to medium sand	1155	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-24	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown clayey fine to medium sand		0.0	
6-8	Brown clayey fine to medium sand	1310	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-25	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown clayey fine to medium sand		0.0	
6-8	Brown clayey fine to medium sand	1345	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-26	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown clayey fine to medium sand		0.0	
6-8	Brown clayey fine to medium sand	1400	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-27	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Gray clayey fine to medium sand		0.0	
6-7	Gray clayey fine to medium sand	1430	0.0	Sample at 7’ bgs
7-8	Brown fine to medium sand (moist)		0.0	

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-28	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown clayey fine to medium sand		0.0	
6-8	Brown clayey fine to medium sand	1500	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-29	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown to gray clayey fine to medium sand		0.0	
6-8	Brown to gray clayey fine to medium sand	1515	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-30	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown clayey fine to medium sand		0.0	
6-8	Brown clayey fine to medium sand	1540	0.0	Sample at 8’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-31	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Orange to gray clayey fine to medium sand		0.0	
6-8	Orange to gray clayey fine to medium sand		0.0	
8-10	Orange to gray clayey fine to medium sand	1600	0.0	Sample at 9’ bgs
10-12	Tan fine to medium sand (moist)		0.0	

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-16-11	
Boring ID: SB-33	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown to gray clayey fine to medium sand	1655	0.0	Sample SB-33A at 6’ bgs
6-8	Brown to gray clayey fine to medium sand		2.2	
8-9	Brown clayey fine to medium sand		4.3	Sample SB-33B at 9’ bgs
9-10	Brown fine to medium sand (moist)	1705	147	
10-11	Brown fine to medium sand (moist)		1589	
11-12	Brown fine to medium sand (moist)		1722	
				Petroleum odor from 9’-12’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-17-11	
Boring ID: SB-34	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand		0.0	
4-6	Brown to gray clayey fine to medium sand	0905	0.0	Sample SB-34A at 6’ bgs
6-8	Brown to gray clayey fine to medium sand	0915	27.6	Sample SB-34B at 8’ bgs
8-10	Brown to gray clayey fine to medium sand		43.0	
10-12	Brown fine to medium sand (moist)		83.1	
				Petroleum odor from 6’-12’ bgs

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**	**Soil Boring Sample Record**

AMEC Project ID: Former Crumbley Property, Parcel #905	**AMEC Field Representative**
AMEC Project #: 6470-11-0529	Gillis
Date: 11-17-11	
Boring ID: SB-35	

Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)**	**Comments**
			PID	
0-2	Top 3” asphalt, Brown silty fine to medium sand		27.3	
2-4	Tan clayey fine to medium sand	0930	5.2	Sample SB-35A at 2’ bgs
4-6	Tan to gray clayey fine to medium sand		477	
6-8	Tan to gray clayey fine to medium sand		802	
8-10	Tan to gray clayey fine to medium sand	0935	1792	Sample SB-35B at 8’ bgs
10-12	Brown fine to medium sand (moist)		1841	
				Petroleum odor throughout boring

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**			**Soil Boring Sample Record**
AMEC Project ID: Former Crumbley Property, Parcel #905			**AMEC Field Representative**	
AMEC Project #: 6470-11-0529			Gillis	
Date: 11-17-11				
Boring ID: SB-36				
Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)** PID	**Comments**
0-2	Top 3” asphalt, Orange to brown clayey fine to medium sand		97.0	
2-4	Orange to brown clayey fine to medium sand	0945	22.2	Sample SB-36A at 2’ bgs
4-6	Orange to gray clayey fine to medium sand		344	
6-8	Orange to gray clayey fine to medium sand		272	Sample SB-36B at 8’ bgs
8-10	Orange to gray clayey fine to medium sand	1000	1549	
10-12	Gray silty fine to medium sand with some clay (moist)		313	
				Petroleum odor throughout boring

	AMEC E&I, Inc. **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**			**Soil Boring Sample Record**
AMEC Project ID: Former Crumbley Property, Parcel #905			**AMEC Field Representative**	
AMEC Project #: 6470-11-0529			Gillis	
Date: 11-17-11				
Boring ID: SB-37				
Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)** PID	**Comments**
0-2	Top 3” concrete, Brown clayey fine to medium sand		0.0	
2-4	Brown clayey fine to medium sand		0.0	
4-6	Brown to gray clayey fine to medium sand		0.0	
6-8	Brown to gray clayey fine to medium sand		0.0	
8-10	Brown to gray clayey fine to medium sand	1015	0.0	Sample at 8’ bgs
10-12	Orange to brown silty fine to medium sand with clay (moist)		362	

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**			**Soil Boring Sample Record**
AMEC Project ID: Former Crumbley Property, Parcel #905			**AMEC Field Representative**	
AMEC Project #: 6470-11-0529			Gillis	
Date: 11-17-11				
Boring ID: SB-38				
Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)** PID	**Comments**
0-2	Top 3” asphalt, Brown clayey fine to medium sand		0.0	
2-4	Tan to gray clayey fine to medium sand		0.0	
4-6	Tan to gray clayey fine to medium sand	1040	0.0	Sample SB-38A at 5’ bgs
6-8	Tan to gray clayey fine to medium sand		33.3	
8-10	Tan to gray clayey fine to medium sand	1050	344	Sample SB-38B at 8’ bgs
10-12	Tan fine to medium sand (moist)		1908	

amec	**AMEC E&I, Inc.** **4021 Stirrup Creek Drive, Suite 100** **Durham, North Carolina**			**Soil Boring Sample Record**
AMEC Project ID: Former Crumbley Property, Parcel #905			**AMEC Field Representative**	
AMEC Project #: 6470-11-0529			Gillis	
Date: 11-17-11				
Boring ID: SB-39				
Depth Interval	**Soil Description**	**Time**	**Headspace Screening Results (in ppm)** PID	**Comments**
0-2	Top 3” concrete, Tan clayey fine to medium sand		0.0	
2-4	Tan clayey fine to medium sand	1115	0.0	Sample SB-39A at 2’ bgs
4-6	Orange to gray clayey fine to medium sand		73.3	
6-8	Orange to gray clayey fine to medium sand		43.4	
8-10	Orange to gray clayey fine to medium sand	1125	16.2	Sample SB-39B at 8’ bgs
10-12	Orange fine to medium sand (moist)		77.6	

APPENDIX D

GEOPHYSICAL SURVEY REPORT

December 15, 2011

Mr. Terry Fox, LG
GeoEnvironmental Project Manager
Geotechnical Engineering Unit
North Carolina Department of Transportation
1589 Mail Service Cnter
Raleigh, NC 27699-1589

Subject: Integrated Geophysical Survey Results
Parcel #905, Former Crumbley Property - Jacksonville, NC
State Project: U-5132
WBS Element:45155.1.1
County: Onslow
Description: NC 24 Trumpet Interchange between SR 1308 and US 17 Bypass

Dear Mr. Fox:

As contracted by the North Carolina Department of Transportation (NCDOT), AMEC has completed an integrated geophysical investigation at Parcel 905, a former gas station (hereafter referred to as Site). The following draft report includes a description of project objectives, technical methodologies performed, data interpretation, and results and recommendations based on findings. Geophysical data collection was completed on November 1 and 2, 2011 and consisted of frequency-domain electromagnetics (EM) and ground penetrating radar (GPR) techniques.

OBJECTIVE

The objective of the geophysical survey was to perform a reconnaissance-level geophysical investigation in an attempt to map the lateral and vertical extent of subsurface targets that either lie beneath or may intersect the Site using frequency-domain (Geophex, Ltd. GEM-2) EM and GPR techniques. These include fill material/ debris, former building foundations, underground storage tanks (USTs) and associated pipelines or utility alignments. The geophysical data findings will be used as a means to make informed decisions on the placement of any proposed soil borings and to aid in avoiding subsurface obstructions or utility lines while performing intrusive Site activities.

SETTING

The Site is currently unoccupied with two existing structures (service station and dispenser station with canopy) located within the area of investigation. The property is bordered by undeveloped property to the north and east, Lejeune Boulevard to the south, and undeveloped property and a local business to the west (**Figure 1**). The Site, specifically the survey area, is covered primarily by asphalt and reinforced concrete paving. The remainder of the site is covered by tall weeds and shrubs, and the service station building and canopy.

GEOPHYSICAL METHODS

Two geophysical tools were employed to meet the outlined project objectives. A brief technical explanation of each geophysical method is listed below:

Frequency-Domain Electromagnetic Induction (GEM-2)

Frequency-domain EM is a non-intrusive ground conductivity and metal detection geophysical technique implemented to map subsurface electrical conductivity variations. An electromagnetic field generated by the instrument is induced into the ground and is altered by the heterogeneity of the material. The resulting difference between the generated (primary) and received (secondary) EM fields are recorded, processed, and interpreted to reveal the nature of the anomaly.

The Geophex, Ltd. GEM-2 (GEM) instrumentation equipped with a digital data logger was employed for the data collection process. The GEM output includes two separate modes of data that provide the operator with similar as well as contrasting subsurface information regarding earthen materials or man-made targets. For instance, ground conductivity (quadrature-phase) readings (measured in milliSiemens/centimeter [mS/cm]) are particularly sensitive to buried metal as well as qualitative variations in salinity or total dissolved ionizing solids within groundwater, air voids (e.g., tunnels and sinkholes), conductive soils (e.g., cinders and ash), and relative subsurface saturation. In-phase (magnetic susceptibility) mode data are a unitless component of the secondary electromagnetic field (measured in parts per thousand [ppt]). In-phase response is sensitive to both ferrous and non-ferrous metallic targets. For typical shallow GEM investigations, both ground conductivity and in-phase data are recorded in an effort to locate buried metal targets (e.g., USTs), metallic and non-metallic underground utility lines, septic systems, and shallow groundwater saturated zones.

Frequency-domain EM values represent a composite value for all geo-electric layers or anisotropic media within a predicted zone of exploration. The GEM consists of a rectangular boom, housing the transmitter and receiver coils that have an intercoil spacing equaling approximately 5.5 ft (1.67 m). Depth of exploration is dependent on the transmitter and receiver coil separation and orientation as well as operating frequency. The fixed intercoil separation and vertical dipole mode configuration employed for this investigation, operating at 5 frequencies ranging from 1,470 Hz to 90,030 Hz. can detect conductive responses to effectively imaging to a depth necessary for this investigation (approximately 12-14 ft).

Ground-Penetrating Radar

GPR is a non-destructive, non-invasive geophysical method for subsurface imaging to locate buried features. GPR can detect a variety of metallic, non-metallic, natural and manmade targets to include underground utilities, USTs, disturbed Earth, sinkholes, and voids. GPR emits a series of high-frequency, high amplitude EM pulses (radio waves) from a transmitting antenna into the ground. When the EM pulses encounter materials that differ in electrical properties, a portion of the energy is reflected back to a receiving element (antenna) at the surface. These reflections are collected as digital images and fed to a portable computer, which then displays a real-time continuous "picture" or profile of the subsurface that can be used to help pinpoint the location of the subsurface feature.

AMEC employed a GSSI, Inc. SIR-3000 GPR unit equipped with a 400 mega hertz (MHz) antenna. For greater vertical and lateral resolution, the frequency of the emitted radar wave can be increased. However, greater accuracy and resolution is achieved at the expense of depth of penetration. Depth of penetration is also dependent upon the geologic conditions of the soils in which the investigation is being performed. The radar waves may be absorbed or scattered depending on the properties of the soil, particularly electrical conductivity. Electrically resistive material such as unsaturated, coarse-grained sediments optimize GPR signal penetration, whereas exploration depths are limited by relatively conductive material such as saturated or fine-grained sediments, clay-rich soils, ash, or reinforced concrete.

FIELD DATA COLLECTION

Geophysical data collection occurred from November 1-2, 2011. Work on November 1st consisted of EM data collection while GPR follow-up was performed on November 2nd.

EM

A total of 33,790 GEM II data points were collected during the November 1, 2011 field effort. Data collection consisted of walking traverses spaced 5-ft apart over areas of the Site formerly covered by tires (**Figure 1**). Traverses were oriented in either a N-S or E-W direction. Prior to data collection, the GEM was calibrated/nulled in an area determined to contain no observable signs of electromagnetic interference. The GEM-2 unit was equipped with a portable GPS and was linked directly to a PDA data logger that provided real-time screen output showing the location of each data point during the collection process. This aided in real-time quality assurance of data density and coverage. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone NAD 83 geodetic datum. On average, geophysical data points were spaced less than 2.5-ft apart along profiles.

Preliminary EM contour maps were generated in the field with Surfer v10.0 software using a statistical kriging algorithm. Interpreted anomalies were reoccupied in the field and marked for reference during the GPR profiling.

GPR

The GPR data were collected along survey lines spaced 5 feet apart in orthogonal directions over the area immediately adjacent to the north side of the service station (Figure 1). The GPR data were reviewed in the field during collection and evaluated for the presence of potential UST's or associated piping and utilities. Identified anomalies were marked on the asphalt/concrete for further review and for reference during the soil boring investigation. All anomalies detected during GPR data collection were noted in the field notes. GPR data were also recorded digitally to the internal hard drive and later transferred to a desktop computer for further review.

GEOPHYSICAL DATA INTERPRETATION

GEM Response

Contoured ground conductivity EM response is illustrated in **Figure 2**. Calculated ground conductivity values and magnetic susceptibility response are measured in mS/m and parts per thousand (ppm) respectively.

Ground Conductivity Response

Colored highlighting was applied to the contoured output to enhance both positive (orange to red shading; >20 mS/m) and negative (light blue to dark blue shading; <-10 mS/m) ground conductivity response illustrated on **Figure 2**. Areas of light green shading are interpreted as undisturbed soils. Light blue to blue shading highlight interpreted "anomalous" areas consisting of buried metallic targets or reinforced concrete areas whereas areas shaded in orange and red are indicative of above-ground interference or areas of conductive nonmetallic fill material.

A majority of ground conductivity anomalies are commonly interpreted as being due to surface interference from man-made objects such as steel-reinforced concrete, vehicles, light poles/reinforced light bases, fences/fence posts and old signage. Metallic interference was present within the survey area (i.e fence posts, steel-reinforced concrete, etc.) and is labeled on **Figures 2 and 3**. Steel-reinforced concrete pads were present near the center

and northeast corner of the geophysical survey area. To the northeast of the northern most concrete pad, elevated conductivities are present surrounding a small two foot by 2 foot void. There are several interpreted anomalies indicative of subsurface utilities based on linear trends and elevated responses versus background. Two lines were observed during data collection trending from the service station to the dispenser station and then south along the western edge of the dispenser station (observations of surficial repairs support geophysical results) while others were aligned towards historic site buildings.

In-phase (Magnetic Susceptibility) Response

Colored shading was applied to the contoured to highlight both positive (orange to red shading; >8 ppt) and negative (light blue to dark blue shading; <-20 ppt) magnetic susceptibility response, illustrated on **Figure 3**. Areas of light green shading are interpreted as either undisturbed soils or non-metallic fill materials. Light blue to blue shading highlight interpreted "anomalous" areas consisting of buried metallic targets or reinforced concrete areas whereas areas highlighted in orange and red are indicative of above-ground interference or areas of metallic fill material.

Similarities between the inphase and ground conductivity responses can be found nearest identified sources of above-ground interference (i.e. vehicles, fence posts, steel-reinforced concrete, etc.) and are labeled in Figure 3. The ground conductivity anomalies trending north from the service station towards historic site buildings and east towards the dispenser station (**Figure 3**) are interpreted to be subsurface utility features based on shape and linear orientation of the magnetic susceptibility response. Although the magnetic susceptibility response footprint is shown to be larger in overall size, the ground conductivity response illustrates greater lateral resolution. Additionally, a linear anomaly is present running along the southern boundary of the survey area. This correlates with known utilities located along Lejeune Boulevard and were noted in a previous geophysical investigation conducted by Schnabel Engineering dated October 14, 2010.

GPR

GPR results indicated several probable underground utility lines located at shallow depths (generally less than two feet below land surface (bls)) trending from the north side of the service station towards historic site buildings and light poles. In general, these matched up with the results from the EM investigation. A couple of additional lines were noted in the GPR survey that were not seen in the EM survey and are likely non-metallic (ie. pvc for sewer cleanouts). Several survey lines passed through the area of elevated conductivity and magnetic susceptibility surrounding the northern concrete pad. Results did not indicate the presence of any metallic USTs. During the survey, clear signal penetration depth was approximately 3 feet bls. At depths greater than 3 feet, the data became noisier and signal quality diminished.

RESULTS

Based on the geophysical data interpretations presented in this report, combined with limited subsurface data that exist for the Site, and observations made by personnel during geophysical data collection, the results of the geophysical surveying as related to the project objectives are as follows:

EM techniques were first used by personnel to screen the site for potential subsurface anomalies that could be indicative of metallic UST's. Based on preliminary EM results, GPR data were collected immediately north of the service station in an attempt to better define underground utilities and to further investigate an elevated EM response surrounding the northernmost concrete pad and void. There appears to be minimal anomalous subsurface targets at the Site other than those targets that correspond to known utility alignments, areas of reinforced concrete, and above-ground sources of interference such as the service station building and dispenser station, metal signage and barbed wire fencing. GPR didn't indicate any USTs in the vicinity of the void space.

Regarding buried utility alignments, there were two utility alignments corresponding with surface cuts and repairs leading from the service station to the dispenser station. There was one subsurface utility alignment leading south of the service station towards Lejeune Boulevard and another leading north from the service station, neither of these showed any surficial indications of a utility line. There were no identified subsurface utility alignments along the western side of the service station.

CONCLUSIONS

The following conclusions regarding subsurface conditions at the Site based on results of this investigation are as follows:

- **Several subsurface utility alignments are present at the Site based on both geophysical response and observations made during data collection.**
- **The geophysical data does not indicate the presence of metallic UST's**
- **Interference from metallic surface features such as steel reinforced concrete, site buildings and metal posts were located throughout the survey area and are labeled accordingly on Figures 2 and 3.**

RECOMMENDATIONS

The following recommendations are based on the findings and conclusions discussed in this report:

- **Further investigation of the void, located in the northeast portion of the survey area approximately 85 feet north of the service station building and 120 feet east of the western property boundary, via intrusive methods is recommended.**

CLOSING

The field procedures and interpretive methodologies used in this project are consistent with industry standard, recognized practices in similar geophysical investigations. The correlation of geophysical responses with probable subsurface features is based on the past result of similar surveys, although it is possible that some variation could exist at this Site. This report represents our professional judgment and no warranty, either expressed or implied, is contained herein.

Respectfully,

Anthony Kellogg
Geologist

Helen P. Corley, L.G.
NCDOT Project Manager

Attachments

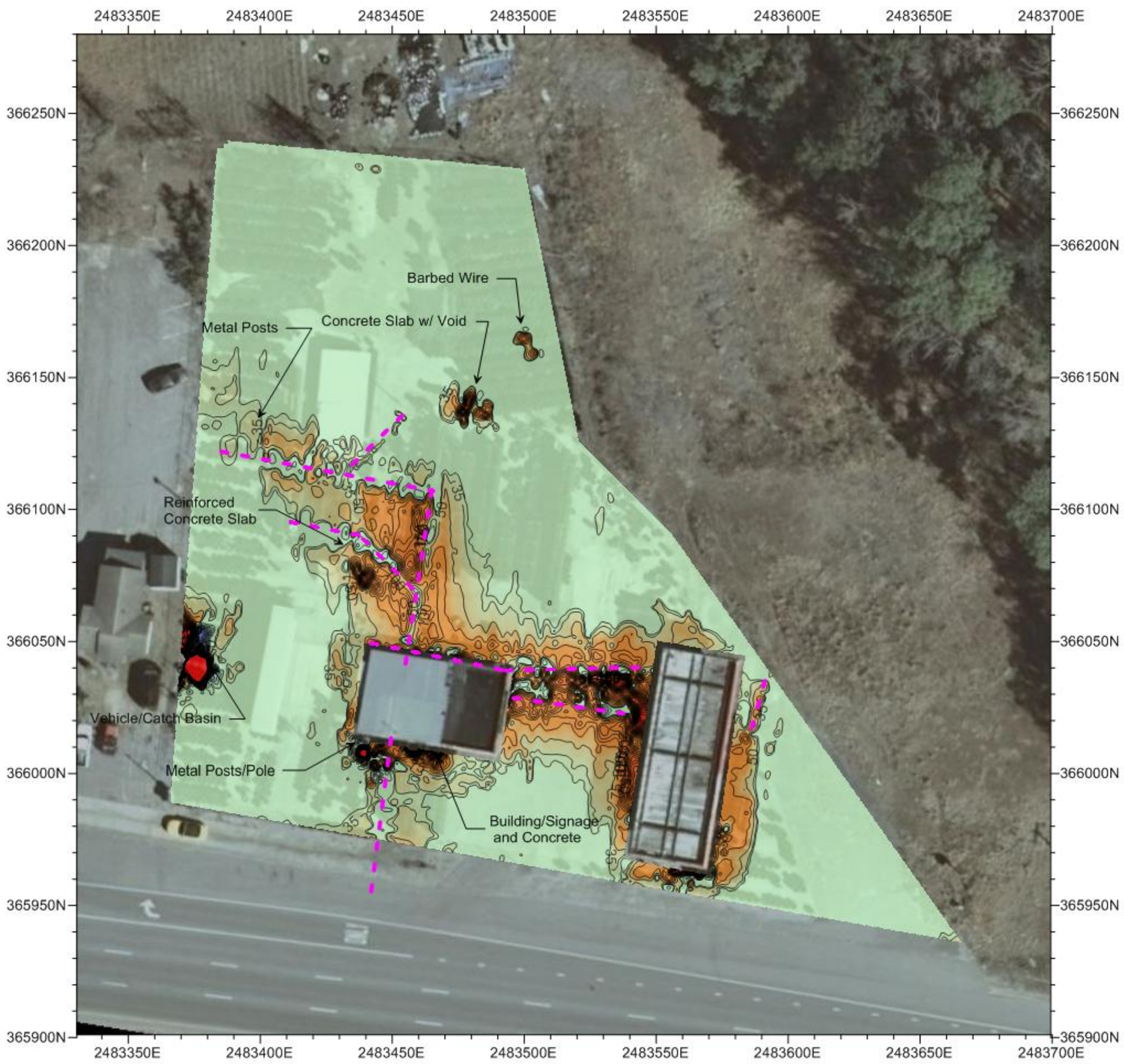
Figure 1 – Geophysical Survey Area of Investigation
Figure 2 – GEM II Calculated Electrical Conductivity Contour Map
Figure 3 – GEM II In-phase Response Contour Map

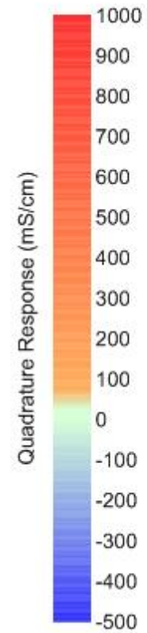
AMEC North Carolina, Inc.
2200 Gateway Centre Boulevard Suite 205
Morrisville NC, 27560
www.amec.com
Tel (919) 447-2750
Fax (919) 447-2751

AMEC Earth & Environmental 2200 Gateway Centre Blvd., Suite 205 Morrisville, NC 27560 (919) 447-2750	**CLIENT:** NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	**SITE LOCATION:** **PARCEL #905, FORMER CRUMBLEY PROPERTY** NC 24 Trumpet Interchange between SR 1308 and US 17 Bypass Jacksonville, North Carolina TIP # U-5132 & WBS # 451155.1.1	**Figure No.** **1**
amec	**TITLE:** **SITE MAP**	**SCALE: 1" = 80'** | **DATE: December 12, 2011** | **PROJECT: 566775132** **DRAWN BY: A. Kellogg** | **CHECKED BY: H. Corley** **N/A**	

Figure 2

GEM-2 Electrical Conductivity
Frequency: 32190 Hz
Parcel #905
Jacksonville, NC
November 2011





LEGEND

Interpreted Subsurface Utility

N

ONE INCH = 40 FEET

0 FT 40 FT 80 FT

NOTES:

Calculated electrical conductivity data were collected using a Geophex GEM-2 multi frequency ground conductivity meter.

Profile spacing was approximately 5 feet with along profile data spacing at 2 feet or less.

Coordinates are in North Carolina State Plane NAD 83 Geodetic Datum.

Client:	
Project:	
Contractor: AMEC	
Created by: CFB	Verified by:
Date: 07DEC11	File:
Page:	Approved:

amec

Figure 3

GEM-2 In-phase Response
Frequency: 32190 Hz
Parcel #905
Jacksonville, NC
November 2011

2483350E 2483400E 2483450E 2483500E 2483550E 2483600E 2483650E 2483700E

366250N 366200N 366150N 366100N 366050N 366000N 365950N 365900N

Barbed Wire
Concrete Slab w/ Void
Metal Posts
Reinforced Concrete Slab
Vehicle/Catch Basin
Metal Posts/Pole
Building/Signage and Concrete

In-phase Response (ppt)
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
-500

LEGEND

Interpreted Subsurface Utility

N

ONE INCH = 40 FEET

0 FT 40 FT 80 FT

NOTES:

In-phase response data were collected using a Geophex GEM-2 multi frequency ground conductivity meter.

Profile spacing was approximately 5 feet with along profile data spacing at 2 feet or less.

Coordinates are in North Carolina State Plane NAD 83 Geodetic Datum.

Client:	
Project:	
Contractor: AMEC	
Created by: CFB	Verified by:
Date: 07DEC11	File:
Page:	Approved:

amec

APPENDIX E

MONTORING WELL SAMPLING WORKSHEET

AMEC E&I, Inc
4021 Stirrup Creek Drive, Suite 100
Durham, North Carolina 27703

MONITORING WELL SAMPLING WORKSHEET

MONITORING WELL ID:	**MW-1**	AMEC PROJECT NUMBER:	**6470-11-0529**
PROJECT:	**NCDOT Former Crumbley Property, Parcel #905**	SITE:	**Chico Tires**
DATE:	**11/17/2011**		
WELL DEPTH:	**14.5 FT.**	SCREENED INTERVAL:	**5-15 FT.**
WELL DIAMETER:	**2 inch**		
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:	**0**	CASING MATERIAL:	**PVC**
SAMPLING DEVICE:	**Peristaltic Pump / YSI 556**	TUBING TYPE:	**Poly**
MEASURING POINT:	**Top of Casing**	DEPTH TO GROUNDWATER:	**11.00**
SAMPLING PERSONNEL:	**Gillis**		

STEEL GUARD PIPE AROUND CASING:	☐	**YES**	☒	**NO**		
LOCKING CAP:	☒	**YES**	☐	**NO**		
PROTECTIVE POST/ABUTMENT:	☐	YES	☒	**NO**		
NONPOTABLE LABEL:	☒	**YES**	☐	**NO**		
ID PLATE:	☒	**YES**	☐	**NO**		
WELL INTEGRITY SATISFACTORY:	☒	**YES**	☐	**NO**		
WELL YIELD:	☐	HIGH	☒	**MODERATE**	☐	**LOW**

COMMENTS **Concrete pad is broken. Rim and skirt are in good shape. Total measured depth was 14.5 ft. btoc.**

TIME (MILITARY)	PUMP RATE (mL/min)	PH (S.U.)	TEMP (^{o}C)	SP. COND. (mS/cm)	D.O. (mg/L)	O.R.P. (mV)	TURBIDITY VISUAL [(1)]		
1140	150	8.44	20.35	0.322	2.05	177.5	2		
1145	150	8.77	20.27	0.310	1.18	-34.9	1		
1150	150	8.71	20.00	0.308	1.04	-96.3	1		
1155	150	8.71	19.92	0.307	0.91	-119.6	1		
1200	150	8.51	19.99	0.303	0.77	-133.6	1		
1203	150	8.35	20.37	0.303	0.73	-143.6	1		
1206	150	8.27	20.57	0.302	0.76	-145.5	1		
1209	150	8.27	20.58	0.302	0.77	-145.7	1		
1212	150	8.26	20.57	0.302	0.77	-145.9	1		
1215	150	8.26	20.58	0.302	0.77	-146.0	1	**Sample**	

NOTES

Well Construction Card:
J&L Drilling, Four Oaks, NC
Date of Installation 3-30-2004
Screen 5'-15'
Registration No. 2865

(1) Turbidity visual determination: (1) clear (2) slightly cloudy (3) cloudy (4) very cloudy

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

APPENDIX F

LABORATORY ANALYTICAL RESULTS

SGS

Laboratory Report of Analysis

To: Helen Corley
AMEC EARTH & ENVIRONMENTAL
101 West Friendly Avenue
Suite 603
Greensboro, NC 27401

Report Number: **31103290**

Client Project: **NCDOT Former Crumbly Property**

Dear Helen Corley,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Michael D. Page at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Digitally signed by: Michael Page
Date: 2011.12.01 16:32:33 -05'00'

Michael D. Page — Date
Project Manager
michael.page@sgs.com

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Amount detected is between the Method Detection Limit and the Lower Calibration Limit
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
SB-15	31103290001	11/16/2011 10:15	11/18/2011 15:00	Soil-Solid as dry weight
SB-16	31103290002	11/16/2011 10:25	11/18/2011 15:00	Soil-Solid as dry weight
SB-17	31103290003	11/16/2011 10:40	11/18/2011 15:00	Soil-Solid as dry weight
SB-18	31103290004	11/16/2011 11:05	11/18/2011 15:00	Soil-Solid as dry weight
SB-19	31103290005	11/16/2011 11:10	11/18/2011 15:00	Soil-Solid as dry weight
SB-20	31103290006	11/16/2011 11:20	11/18/2011 15:00	Soil-Solid as dry weight
SB-21	31103290007	11/16/2011 11:35	11/18/2011 15:00	Soil-Solid as dry weight
SB-22	31103290008	11/16/2011 11:45	11/18/2011 15:00	Soil-Solid as dry weight
SB-23	31103290009	11/16/2011 11:55	11/18/2011 15:00	Soil-Solid as dry weight
SB-24	31103290010	11/16/2011 13:10	11/18/2011 15:00	Soil-Solid as dry weight
SB-25	31103290011	11/16/2011 13:45	11/18/2011 15:00	Soil-Solid as dry weight
SB-26	31103290012	11/16/2011 14:00	11/18/2011 15:00	Soil-Solid as dry weight
SB-27	31103290013	11/16/2011 14:30	11/18/2011 15:00	Soil-Solid as dry weight
SB-28	31103290014	11/16/2011 15:00	11/18/2011 15:00	Soil-Solid as dry weight
SB-29	31103290015	11/16/2011 15:15	11/18/2011 15:00	Soil-Solid as dry weight
SB-30	31103290016	11/16/2011 15:40	11/18/2011 15:00	Soil-Solid as dry weight
SB-31	31103290017	11/16/2011 16:00	11/18/2011 15:00	Soil-Solid as dry weight
SB-32	31103290018	11/16/2011 16:20	11/18/2011 15:00	Soil-Solid as dry weight
SB-33A	31103290019	11/16/2011 16:55	11/18/2011 15:00	Soil-Solid as dry weight
SB-33B	31103290020	11/16/2011 17:05	11/18/2011 15:00	Soil-Solid as dry weight
SB-34A	31103290021	11/17/2011 09:05	11/18/2011 15:00	Soil-Solid as dry weight
SB-34B	31103290022	11/17/2011 09:15	11/18/2011 15:00	Soil-Solid as dry weight
SB-35A	31103290023	11/17/2011 09:30	11/18/2011 15:00	Soil-Solid as dry weight
SB-35B	31103290024	11/17/2011 09:35	11/18/2011 15:00	Soil-Solid as dry weight
SB-36A	31103290025	11/17/2011 09:45	11/18/2011 15:00	Soil-Solid as dry weight
SB-36B	31103290026	11/17/2011 10:00	11/18/2011 15:00	Soil-Solid as dry weight
SB-37	31103290027	11/17/2011 10:15	11/18/2011 15:00	Soil-Solid as dry weight
SB-38A	31103290028	11/17/2011 10:40	11/18/2011 15:00	Soil-Solid as dry weight
SB-38B	31103290029	11/17/2011 10:50	11/18/2011 15:00	Soil-Solid as dry weight
SB-39A	31103290030	11/17/2011 11:15	11/18/2011 15:00	Soil-Solid as dry weight
SB-39B	31103290031	11/17/2011 11:25	11/18/2011 15:00	Soil-Solid as dry weight
MW-1	31103290032	11/17/2011 12:15	11/18/2011 15:00	Water
Trip Blanks (Not on COC)	31103290034	11/17/2011 00:00	11/18/2011 15:00	Water

SGS North America Inc.

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Results of **SB-15**

Client Sample ID: **SB-15**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290001-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 10:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.69	mg/kg	1	11/21/2011 15:59
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	1	11/21/2011 15:59

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 15:59**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 12:53**
Prep Initial Wt./Vol.: **6.995 g**
Prep Extract Vol: **5 mL**

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Results of **SB-15**

Client Sample ID: **SB-15**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290001-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 10:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.92	mg/kg	1	11/22/2011 7:46
Surrogates						
o-Terphenyl	61.0		40.0-140	%	1	11/22/2011 7:46

Batch Information

Analytical Batch: **XGC1733**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 07:46**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **32.63 g**
Prep Extract Vol: **10 mL**

SGS

Results of **SB-16**

Client Sample ID: **SB-16**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290002-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 10:25
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.90

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.52	mg/kg	1	11/21/2011 16:25
Surrogates						
4-Bromofluorobenzene	95.5		70.0-130	%	1	11/21/2011 16:25

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 16:25**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 12:54**
Prep Initial Wt./Vol.: **7.011 g**
Prep Extract Vol: **5 mL**

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Results of **SB-16**

Client Sample ID: **SB-16**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290002-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 10:25
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.90

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**12.1**		7.66	mg/kg	1	11/22/2011 8:15
Surrogates						
o-Terphenyl	58.8		40.0-140	%	1	11/22/2011 8:15

Batch Information

Analytical Batch: **XGC1733**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 08:15**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **32.28 g**
Prep Extract Vol: **10 mL**

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Results of **SB-17**

Client Sample ID: **SB-17**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290003-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 10:40
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 77.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.74	mg/kg	1	11/21/2011 16:51
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	1	11/21/2011 16:51

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 16:51**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 12:56**
Prep Initial Wt./Vol.: **6.862 g**
Prep Extract Vol: **5 mL**

Print Date: 12/01/2011

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Results of **SB-17**

Client Sample ID: **SB-17**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290003-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 10:40
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 77.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.05	mg/kg	1	11/22/2011 8:43
Surrogates						
o-Terphenyl	74.5		40.0-140	%	1	11/22/2011 8:43

Batch Information

Analytical Batch: **XGC1733**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 08:43**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **31.93 g**
Prep Extract Vol: **10 mL**

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Results of **SB-18**

Client Sample ID: **SB-18**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290004-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:05
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.70

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.49	mg/kg	1	11/21/2011 17:18
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	1	11/21/2011 17:18

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 17:18**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 12:57**
Prep Initial Wt./Vol.: **7.027 g**
Prep Extract Vol: **5 mL**

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Results of **SB-18**

Client Sample ID: **SB-18**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290004-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:05
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.70

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.69	mg/kg	1	11/22/2011 9:10
Surrogates						
o-Terphenyl	60.2		40.0-140	%	1	11/22/2011 9:10

Batch Information

Analytical Batch: **XGC1733**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 09:10**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **31.87 g**
Prep Extract Vol: **10 mL**

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Results of **SB-19**

Client Sample ID: **SB-19**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290005-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:10
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 84.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.34	mg/kg	1	11/21/2011 17:44
Surrogates						
4-Bromofluorobenzene	101		70.0-130	%	1	11/21/2011 17:44

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 17:44**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 12:58**
Prep Initial Wt./Vol.: **7.05 g**
Prep Extract Vol: **5 mL**

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Results of **SB-19**

Client Sample ID: **SB-19**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290005-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:10
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 84.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.24	mg/kg	1	11/22/2011 19:11
Surrogates						
o-Terphenyl	82.6		40.0-140	%	1	11/22/2011 19:11

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 19:11**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **32.57 g**
Prep Extract Vol: **10 mL**

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Results of **SB-20**

Client Sample ID: **SB-20**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290006-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:20
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.85	mg/kg	1	11/21/2011 18:10
Surrogates						
4-Bromofluorobenzene	98.9		70.0-130	%	1	11/21/2011 18:10

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 18:10**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 12:59**
Prep Initial Wt./Vol.: **6.467 g**
Prep Extract Vol: **5 mL**

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Results of **SB-20**

Client Sample ID: **SB-20**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290006-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:20
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.54	mg/kg	1	11/22/2011 19:39
Surrogates						
o-Terphenyl	62.1		40.0-140	%	1	11/22/2011 19:39

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 19:39**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **33.06 g**
Prep Extract Vol: **10 mL**

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Results of **SB-21**

Client Sample ID: **SB-21**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290007-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:35
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 91.20

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.59	mg/kg	1	11/21/2011 18:36
Surrogates						
4-Bromofluorobenzene	99.7		70.0-130	%	1	11/21/2011 18:36

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 18:36**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:00**
Prep Initial Wt./Vol.: **6.113 g**
Prep Extract Vol: **5 mL**

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Results of **SB-21**

Client Sample ID: **SB-21**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290007-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:35
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 91.20

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.77	mg/kg	1	11/22/2011 20:07
Surrogates						
o-Terphenyl	78.9		40.0-140	%	1	11/22/2011 20:07

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 20:07**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **32.41 g**
Prep Extract Vol: **10 mL**

Print Date: 12/01/2011

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Results of **SB-22**

Client Sample ID: **SB-22**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290008-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:45
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.60

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.88	mg/kg	1	11/21/2011 19:02
Surrogates						
4-Bromofluorobenzene	98.4		70.0-130	%	1	11/21/2011 19:02

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 19:02**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:02**
Prep Initial Wt./Vol.: **6.728 g**
Prep Extract Vol: **5 mL**

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Results of **SB-22**

Client Sample ID: **SB-22**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290008-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:45
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.60

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**22.2**		7.89	mg/kg	1	11/22/2011 20:35
Surrogates						
o-Terphenyl	57.5		40.0-140	%	1	11/22/2011 20:35

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 20:35**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **33.12 g**
Prep Extract Vol: **10 mL**

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Results of **SB-23**

Client Sample ID: **SB-23**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290009-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:55
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.00

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.77	mg/kg	1	11/21/2011 19:28
Surrogates						
4-Bromofluorobenzene	99.1		70.0-130	%	1	11/21/2011 19:28

Batch Information

Analytical Batch: **VGC1527**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/21/2011 19:28**

Prep Batch: **VXX2396**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:05**
Prep Initial Wt./Vol.: **5.7 g**
Prep Extract Vol: **5 mL**

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Results of **SB-23**

Client Sample ID: **SB-23**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290009-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 11:55
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.00

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.69	mg/kg	1	11/22/2011 21:03
Surrogates						
o-Terphenyl	76.5		40.0-140	%	1	11/22/2011 21:03

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 21:03**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **32.14 g**
Prep Extract Vol: **10 mL**

Print Date: 12/01/2011

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Results of **SB-24**

Client Sample ID: **SB-24**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290010-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 13:10
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 84.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		4.05	mg/kg	1	11/22/2011 12:57
Surrogates						
4-Bromofluorobenzene	105		70.0-130	%	1	11/22/2011 12:57

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 12:57**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:06**
Prep Initial Wt./Vol.: **5.854 g**
Prep Extract Vol: **5 mL**

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Results of **SB-24**

Client Sample ID: **SB-24**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290010-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 13:10
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 84.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.51	mg/kg	1	11/22/2011 21:32
Surrogates						
o-Terphenyl	77.3		40.0-140	%	1	11/22/2011 21:32

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 21:32**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **31.56 g**
Prep Extract Vol: **10 mL**

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Results of **SB-25**

Client Sample ID: **SB-25**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290011-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 13:45
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 85.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.43	mg/kg	1	11/22/2011 13:22
Surrogates						
4-Bromofluorobenzene	99.8		70.0-130	%	1	11/22/2011 13:22

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 13:22**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:07**
Prep Initial Wt./Vol.: **6.838 g**
Prep Extract Vol: **5 mL**

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Results of **SB-25**

Client Sample ID: **SB-25**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290011-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 13:45
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 85.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.32	mg/kg	1	11/22/2011 22:00
Surrogates						
o-Terphenyl	80.4		40.0-140	%	1	11/22/2011 22:00

Batch Information

Analytical Batch: **XGC1741**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/22/2011 22:00**

Prep Batch: **XXX2002**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/20/2011 09:11**
Prep Initial Wt./Vol.: **32.02 g**
Prep Extract Vol: **10 mL**

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Results of **SB-26**

Client Sample ID: **SB-26**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290012-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 14:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 90.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.65	mg/kg	1	11/22/2011 13:48
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	1	11/22/2011 13:48

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 13:48**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:08**
Prep Initial Wt./Vol.: **6.064 g**
Prep Extract Vol: **5 mL**

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Results of **SB-26**

Client Sample ID: **SB-26**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290012-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 14:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 90.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.82	mg/kg	1	11/24/2011 7:07
Surrogates						
o-Terphenyl	101		40.0-140	%	1	11/24/2011 7:07

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 07:07**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.48 g**
Prep Extract Vol: **10 mL**

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Results of **SB-27**

Client Sample ID: **SB-27**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290013-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 14:30
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.23	mg/kg	1	11/22/2011 14:15
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	1	11/22/2011 14:15

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 14:15**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:09**
Prep Initial Wt./Vol.: **7.528 g**
Prep Extract Vol: **5 mL**

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Results of **SB-27**

Client Sample ID: **SB-27**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290013-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 14:30
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.52	mg/kg	1	11/24/2011 7:35
Surrogates						
o-Terphenyl	88.6		40.0-140	%	1	11/24/2011 7:35

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 07:35**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.33 g**
Prep Extract Vol: **10 mL**

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Results of **SB-28**

Client Sample ID: **SB-28**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290014-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 15:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 86.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.46	mg/kg	1	11/22/2011 14:41
Surrogates						
4-Bromofluorobenzene	99.6		70.0-130	%	1	11/22/2011 14:41

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 14:41**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:11**
Prep Initial Wt./Vol.: **6.689 g**
Prep Extract Vol: **5 mL**

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Results of **SB-28**

Client Sample ID: **SB-28**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290014-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 15:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 86.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.03	mg/kg	1	11/24/2011 8:03
Surrogates						
o-Terphenyl	81.8		40.0-140	%	1	11/24/2011 8:03

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 08:03**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.94 g**
Prep Extract Vol: **10 mL**

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Results of **SB-29**

Client Sample ID: **SB-29**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290015-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 15:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.70

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.52	mg/kg	1	11/22/2011 15:07
Surrogates						
4-Bromofluorobenzene	97.5		70.0-130	%	1	11/22/2011 15:07

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 15:07**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:12**
Prep Initial Wt./Vol.: **6.952 g**
Prep Extract Vol: **5 mL**

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Results of **SB-29**

Client Sample ID: **SB-29**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290015-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 15:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.70

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.45	mg/kg	1	11/24/2011 8:30
Surrogates						
o-Terphenyl	76.7		40.0-140	%	1	11/24/2011 8:30

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 08:30**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.85 g**
Prep Extract Vol: **10 mL**

Print Date: 12/01/2011

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Results of **SB-30**

Client Sample ID: **SB-30**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290016-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 15:40
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.20

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.49	mg/kg	1	11/22/2011 15:34
Surrogates						
4-Bromofluorobenzene	98.3		70.0-130	%	1	11/22/2011 15:34

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 15:34**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:13**
Prep Initial Wt./Vol.: **7.138 g**
Prep Extract Vol: **5 mL**

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Results of **SB-30**

Client Sample ID: **SB-30**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290016-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 15:40
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.20

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.60	mg/kg	1	11/24/2011 8:58
Surrogates						
o-Terphenyl	69.1		40.0-140	%	1	11/24/2011 8:58

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 08:58**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.83 g**
Prep Extract Vol: **10 mL**

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Results of **SB-31**

Client Sample ID: **SB-31**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290017-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 16:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 79.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.75	mg/kg	1	11/22/2011 16:00
Surrogates						
4-Bromofluorobenzene	99.3		70.0-130	%	1	11/22/2011 16:00

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 16:00**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:16**
Prep Initial Wt./Vol.: **6.724 g**
Prep Extract Vol: **5 mL**

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Results of **SB-31**

Client Sample ID: **SB-31**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290017-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 16:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 79.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.86	mg/kg	1	11/24/2011 9:26
Surrogates						
o-Terphenyl	68.0		40.0-140	%	1	11/24/2011 9:26

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 09:26**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.05 g**
Prep Extract Vol: **10 mL**

Print Date: 12/01/2011

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Results of **SB-32**

Client Sample ID: **SB-32**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290018-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 16:20
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 83.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.32	mg/kg	1	11/22/2011 16:26
Surrogates						
4-Bromofluorobenzene	96.0		70.0-130	%	1	11/22/2011 16:26

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 16:26**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:18**
Prep Initial Wt./Vol.: **7.233 g**
Prep Extract Vol: **5 mL**

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Results of **SB-32**

Client Sample ID: **SB-32**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290018-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 16:20
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 83.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.46	mg/kg	1	11/24/2011 9:54
Surrogates						
o-Terphenyl	73.7		40.0-140	%	1	11/24/2011 9:54

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 09:54**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.15 g**
Prep Extract Vol: **10 mL**

Print Date: 12/01/2011

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Results of **SB-33A**

Client Sample ID: **SB-33A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290019-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 16:55
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**4.30**		3.86	mg/kg	1	11/22/2011 16:53
Surrogates						
4-Bromofluorobenzene	98.4		70.0-130	%	1	11/22/2011 16:53

Batch Information

Analytical Batch: **VGC1532**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 16:53**

Prep Batch: **VXX2404**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:19**
Prep Initial Wt./Vol.: **6.747 g**
Prep Extract Vol: **5 mL**

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Results of **SB-33A**

Client Sample ID: **SB-33A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290019-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 16:55
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.08	mg/kg	1	11/24/2011 10:22
Surrogates						
o-Terphenyl	69.4		40.0-140	%	1	11/24/2011 10:22

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 10:22**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.24 g**
Prep Extract Vol: **10 mL**

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Results of **SB-33B**

Client Sample ID: **SB-33B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290020-A
Lab Project ID: 31103290

Collection Date: 11/16/2011 17:05
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 79.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**12.2**		3.85	mg/kg	1	11/28/2011 15:39
Surrogates						
4-Bromofluorobenzene	95.3		70.0-130	%	1	11/28/2011 15:39

Batch Information

Analytical Batch: **VGC1537**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/28/2011 15:39**

Prep Batch: **VXX2420**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:22**
Prep Initial Wt./Vol.: **6.552 g**
Prep Extract Vol: **5 mL**

Print Date: 12/01/2011

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Results of **SB-33B**

Client Sample ID: **SB-33B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290020-C
Lab Project ID: 31103290

Collection Date: 11/16/2011 17:05
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 79.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.84	mg/kg	1	11/24/2011 10:50
Surrogates						
o-Terphenyl	78.6		40.0-140	%	1	11/24/2011 10:50

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 10:50**

Prep Batch: **XXX2010**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 15:15**
Prep Initial Wt./Vol.: **32.15 g**
Prep Extract Vol: **10 mL**

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Results of **SB-34A**

Client Sample ID: **SB-34A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290021-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:05
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 77.50

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.82	mg/kg	1	11/28/2011 16:06
Surrogates						
4-Bromofluorobenzene	98.0		70.0-130	%	1	11/28/2011 16:06

Batch Information

Analytical Batch: **VGC1537**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/28/2011 16:06**

Prep Batch: **VXX2420**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:23**
Prep Initial Wt./Vol.: **6.764 g**
Prep Extract Vol: **5 mL**

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Results of **SB-34A**

Client Sample ID: **SB-34A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290021-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:05
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 77.50

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.00	mg/kg	1	11/24/2011 12:14
Surrogates						
o-Terphenyl	70.0		40.0-140	%	1	11/24/2011 12:14

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 12:14**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.25 g**
Prep Extract Vol: **10 mL**

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Results of **SB-34B**

Client Sample ID: **SB-34B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290022-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 83.50

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.68	mg/kg	1	11/28/2011 16:32
Surrogates						
4-Bromofluorobenzene	101		70.0-130	%	1	11/28/2011 16:32

Batch Information

Analytical Batch: **VGC1537**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/28/2011 16:32**

Prep Batch: **VXX2420**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:24**
Prep Initial Wt./Vol.: **6.504 g**
Prep Extract Vol: **5 mL**

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Results of **SB-34B**

Client Sample ID: **SB-34B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290022-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 83.50

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.44	mg/kg	1	11/24/2011 12:43
Surrogates						
o-Terphenyl	95.0		40.0-140	%	1	11/24/2011 12:43

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 12:43**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.19 g**
Prep Extract Vol: **10 mL**

SGS

Results of **SB-35A**

Client Sample ID: **SB-35A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290023-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:30
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.20

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**47.0**		6.95	mg/kg	2	11/29/2011 12:31
Surrogates						
4-Bromofluorobenzene	98.8		70.0-130	%	2	11/29/2011 12:31

Batch Information

Analytical Batch: **VGC1540**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/29/2011 12:31**

Prep Batch: **VXX2426**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:26**
Prep Initial Wt./Vol.: **7 g**
Prep Extract Vol: **5 mL**

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Results of **SB-35A**

Client Sample ID: **SB-35A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290023-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:30
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.20

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.38	mg/kg	1	11/24/2011 13:11
Surrogates						
o-Terphenyl	81.2		40.0-140	%	1	11/24/2011 13:11

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 13:11**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.98 g**
Prep Extract Vol: **10 mL**

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Results of **SB-35B**

Client Sample ID: **SB-35B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290024-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:35
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**7270**		1590	mg/kg	500	11/29/2011 13:48
Surrogates						
4-Bromofluorobenzene	96.9		70.0-130	%	500	11/29/2011 13:48

Batch Information

Analytical Batch: **VGC1540**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/29/2011 13:48**

Prep Batch: **VXX2426**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:27**
Prep Initial Wt./Vol.: **7.579 g**
Prep Extract Vol: **5 mL**

SGS

Results of **SB-35B**

Client Sample ID: **SB-35B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290024-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:35
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**1360**		73.8	mg/kg	10	11/30/2011 4:41
Surrogates						
o-Terphenyl	94.9		40.0-140	%	10	11/30/2011 4:41

Batch Information

Analytical Batch: **XGC1750**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/30/2011 04:41**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.7 g**
Prep Extract Vol: **10 mL**

SGS

Results of **SB-36A**

Client Sample ID: **SB-36A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290025-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:45
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	16.4		3.22	mg/kg	1	11/28/2011 17:24
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	1	11/28/2011 17:24

Batch Information

Analytical Batch: **VGC1537**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/28/2011 17:24**

Prep Batch: **VXX2420**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:30**
Prep Initial Wt./Vol.: **7.533 g**
Prep Extract Vol: **5 mL**

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Results of **SB-36A**

Client Sample ID: **SB-36A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290025-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 09:45
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 82.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**34.4**		7.40	mg/kg	1	11/30/2011 19:05
Surrogates						
o-Terphenyl	75.3		40.0-140	%	1	11/30/2011 19:05

Batch Information

Analytical Batch: **XGC1759**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/30/2011 19:05**

Prep Batch: **XXX2031**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/29/2011 17:18**
Prep Initial Wt./Vol.: **32.8 g**
Prep Extract Vol: **10 mL**

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Results of **SB-36B**

Client Sample ID: **SB-36B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290026-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.50

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**72.3**		15.4	mg/kg	4	11/29/2011 12:56
Surrogates						
4-Bromofluorobenzene	98.4		70.0-130	%	4	11/29/2011 12:56

Batch Information

Analytical Batch: **VGC1540**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/29/2011 12:56**

Prep Batch: **VXX2426**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:31**
Prep Initial Wt./Vol.: **6.769 g**
Prep Extract Vol: **5 mL**

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Results of **SB-36B**

Client Sample ID: **SB-36B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290026-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:00
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.50

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**45.2**		8.13	mg/kg	1	11/24/2011 16:27
Surrogates						
o-Terphenyl	79.5		40.0-140	%	1	11/24/2011 16:27

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 16:27**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.16 g**
Prep Extract Vol: **10 mL**

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Results of **SB-37**

Client Sample ID: **SB-37**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290027-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**104**		19.8	mg/kg	5	11/29/2011 13:22
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	5	11/29/2011 13:22

Batch Information

Analytical Batch: **VGC1540**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/29/2011 13:22**

Prep Batch: **VXX2426**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:32**
Prep Initial Wt./Vol.: **6.571 g**
Prep Extract Vol: **5 mL**

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Results of **SB-37**

Client Sample ID: **SB-37**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290027-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.00	mg/kg	1	11/24/2011 16:55
Surrogates						
o-Terphenyl	80.7		40.0-140	%	1	11/24/2011 16:55

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 16:55**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.57 g**
Prep Extract Vol: **10 mL**

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Results of **SB-38A**

Client Sample ID: **SB-38A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290028-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:40
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 74.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.86	mg/kg	1	11/28/2011 18:43
Surrogates						
4-Bromofluorobenzene	101		70.0-130	%	1	11/28/2011 18:43

Batch Information

Analytical Batch: **VGC1537**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/28/2011 18:43**

Prep Batch: **VXX2420**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:33**
Prep Initial Wt./Vol.: **6.928 g**
Prep Extract Vol: **5 mL**

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Results of **SB-38A**

Client Sample ID: **SB-38A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290028-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:40
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 74.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.24	mg/kg	1	11/24/2011 17:23
Surrogates						
o-Terphenyl	76.5		40.0-140	%	1	11/24/2011 17:23

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 17:23**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.45 g**
Prep Extract Vol: **10 mL**

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Results of **SB-38B**

Client Sample ID: **SB-38B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290029-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:50
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.00

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**17.9**		3.76	mg/kg	1	11/28/2011 19:09
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	1	11/28/2011 19:09

Batch Information

Analytical Batch: **VGC1537**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/28/2011 19:09**

Prep Batch: **VXX2420**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:34**
Prep Initial Wt./Vol.: **6.996 g**
Prep Extract Vol: **5 mL**

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Results of **SB-38B**

Client Sample ID: **SB-38B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290029-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 10:50
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 76.00

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.19	mg/kg	1	11/24/2011 17:52
Surrogates						
o-Terphenyl	65.7		40.0-140	%	1	11/24/2011 17:52

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 17:52**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.14 g**
Prep Extract Vol: **10 mL**

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Results of **SB-39A**

Client Sample ID: **SB-39A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290030-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 11:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 83.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.62	mg/kg	1	11/29/2011 14:41
Surrogates						
4-Bromofluorobenzene	101		70.0-130	%	1	11/29/2011 14:41

Batch Information

Analytical Batch: **VGC1540**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/29/2011 14:41**

Prep Batch: **VXX2426**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:35**
Prep Initial Wt./Vol.: **6.63 g**
Prep Extract Vol: **5 mL**

Print Date: 12/01/2011

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Results of **SB-39A**

Client Sample ID: **SB-39A**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290030-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 11:15
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 83.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.40	mg/kg	1	11/24/2011 18:20
Surrogates						
o-Terphenyl	70.8		40.0-140	%	1	11/24/2011 18:20

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 18:20**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.41 g**
Prep Extract Vol: **10 mL**

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Results of **SB-39B**

Client Sample ID: **SB-39B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290031-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 11:25
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 75.80

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	7.46		3.85	mg/kg	1	11/29/2011 15:07
Surrogates						
4-Bromofluorobenzene	104		70.0-130	%	1	11/29/2011 15:07

Batch Information

Analytical Batch: **VGC1540**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: **11/29/2011 15:07**

Prep Batch: **VXX2426**
Prep Method: **SW-846 5035**
Prep Date/Time: **11/19/2011 13:36**
Prep Initial Wt./Vol.: **6.847 g**
Prep Extract Vol: **5 mL**

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Results of **SB-39B**

Client Sample ID: **SB-39B**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290031-C
Lab Project ID: 31103290

Collection Date: 11/17/2011 11:25
Received Date: 11/18/2011 15:00
Matrix: Soil-Solid as dry weight
Solids (%): 75.80

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		8.03	mg/kg	1	11/24/2011 18:48
Surrogates						
o-Terphenyl	71.4		40.0-140	%	1	11/24/2011 18:48

Batch Information

Analytical Batch: **XGC1744**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/24/2011 18:48**

Prep Batch: **XXX2015**
Prep Method: **SW-846 3541**
Prep Date/Time: **11/22/2011 07:20**
Prep Initial Wt./Vol.: **32.85 g**
Prep Extract Vol: **10 mL**

Print Date: 12/01/2011

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Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290032-B
Lab Project ID: 31103290

Collection Date: 11/17/2011 12:15
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,1,1-Trichloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,1,2,2-Tetrachloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,1,2-Trichloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,1-Dichloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,1-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 18:12
1,1-Dichloropropene	ND		1.00	ug/L	1	11/22/2011 18:12
1,2,3-Trichlorobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
1,2,3-Trichloropropane	ND		1.00	ug/L	1	11/22/2011 18:12
1,2,4-Trichlorobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
1,2,4-Trimethylbenzene	**6.57**		1.00	ug/L	1	11/22/2011 18:12
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	11/22/2011 18:12
1,2-Dibromoethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,2-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
1,2-Dichloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
1,2-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 18:12
1,3,5-Trimethylbenzene	**3.12**		1.00	ug/L	1	11/22/2011 18:12
1,3-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
1,3-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 18:12
1,4-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
2,2-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 18:12
2-Butanone	ND		25.0	ug/L	1	11/22/2011 18:12
2-Chlorotoluene	ND		1.00	ug/L	1	11/22/2011 18:12
2-Hexanone	ND		5.00	ug/L	1	11/22/2011 18:12
4-Chlorotoluene	ND		1.00	ug/L	1	11/22/2011 18:12
4-Isopropyltoluene	ND		1.00	ug/L	1	11/22/2011 18:12
4-Methyl-2-pentanone	ND		5.00	ug/L	1	11/22/2011 18:12
Acetone	ND		25.0	ug/L	1	11/22/2011 18:12
Benzene	ND		1.00	ug/L	1	11/22/2011 18:12
Bromobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
Bromochloromethane	ND		1.00	ug/L	1	11/22/2011 18:12
Bromodichloromethane	ND		1.00	ug/L	1	11/22/2011 18:12
Bromoform	ND		1.00	ug/L	1	11/22/2011 18:12
Bromomethane	ND		1.00	ug/L	1	11/22/2011 18:12
n-Butylbenzene	**2.13**		1.00	ug/L	1	11/22/2011 18:12
Carbon disulfide	ND		1.00	ug/L	1	11/22/2011 18:12
Carbon tetrachloride	ND		1.00	ug/L	1	11/22/2011 18:12
Chlorobenzene	ND		1.00	ug/L	1	11/22/2011 18:12
Chloroethane	ND		1.00	ug/L	1	11/22/2011 18:12
Chloroform	ND		1.00	ug/L	1	11/22/2011 18:12
Chloromethane	ND		1.00	ug/L	1	11/22/2011 18:12
Dibromochloromethane	ND		1.00	ug/L	1	11/22/2011 18:12
Dibromomethane	ND		1.00	ug/L	1	11/22/2011 18:12

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Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290032-B
Lab Project ID: 31103290

Collection Date: 11/17/2011 12:15
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		5.00	ug/L	1	11/22/2011 18:12
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	11/22/2011 18:12
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	11/22/2011 18:12
Diisopropyl Ether	ND		1.00	ug/L	1	11/22/2011 18:12
Ethyl Benzene	**11.0**		1.00	ug/L	1	11/22/2011 18:12
Hexachlorobutadiene	ND		1.00	ug/L	1	11/22/2011 18:12
Isopropylbenzene (Cumene)	**3.84**		1.00	ug/L	1	11/22/2011 18:12
Methyl iodide	ND		1.00	ug/L	1	11/22/2011 18:12
Methylene chloride	ND		5.00	ug/L	1	11/22/2011 18:12
Naphthalene	**7.22**		1.00	ug/L	1	11/22/2011 18:12
Styrene	ND		1.00	ug/L	1	11/22/2011 18:12
Tetrachloroethene	ND		1.00	ug/L	1	11/22/2011 18:12
Toluene	ND		1.00	ug/L	1	11/22/2011 18:12
Trichloroethene	ND		1.00	ug/L	1	11/22/2011 18:12
Trichlorofluoromethane	ND		1.00	ug/L	1	11/22/2011 18:12
Vinyl chloride	ND		1.00	ug/L	1	11/22/2011 18:12
cis-1,2-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 18:12
m,p-Xylene	ND		2.00	ug/L	1	11/22/2011 18:12
n-Propylbenzene	**11.8**		1.00	ug/L	1	11/22/2011 18:12
o-Xylene	ND		1.00	ug/L	1	11/22/2011 18:12
sec-Butylbenzene	**1.15**		1.00	ug/L	1	11/22/2011 18:12
tert-Butyl methyl ether (MTBE)	ND		1.00	ug/L	1	11/22/2011 18:12
tert-Butylbenzene	ND		1.00	ug/L	1	11/22/2011 18:12
trans-1,2-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 18:12
trans-1,4-Dichloro-2-butene	ND		5.00	ug/L	1	11/22/2011 18:12
Surrogates						
1,2-Dichloroethane-d4	106		64.0-140	%	1	11/22/2011 18:12
4-Bromofluorobenzene	100		85.0-115	%	1	11/22/2011 18:12
Toluene d8	95.0		82.0-117	%	1	11/22/2011 18:12

Batch Information

Analytical Batch: **VMS1722**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**
Analytical Date/Time: **11/22/2011 18:12**

Prep Batch: **VXX2409**
Prep Method: **SW-846 5030B**
Prep Date/Time: **11/22/2011 10:52**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290032-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 12:15
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **MADEP VPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C5-C8 Aliphatics	**306**		100	ug/L	1	11/22/2011 13:00
C9-C10 Aromatics	**103**		100	ug/L	1	11/22/2011 13:00
C9-C12 Aliphatics	**156**		100	ug/L	1	11/22/2011 13:00
Surrogates						
FID - 4-Bromofluorobenzene	110		70.0-130	%	1	11/22/2011 13:00
PID - 4-Bromofluorobenzene	99.0		70.0-130	%	1	11/22/2011 13:00

Batch Information

Analytical Batch: **VGC1533**
Analytical Method: **MADEP VPH**
Instrument: **GC4**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 13:00**

Prep Batch: **VXX2405**
Prep Method: **SW-846 5030B**
Prep Date/Time: **11/22/2011 14:39**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290032-J
Lab Project ID: 31103290

Collection Date: 11/17/2011 12:15
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		5.20	ug/L	1	11/21/2011 20:07
1,2-Dichlorobenzene	ND		5.20	ug/L	1	11/21/2011 20:07
1,3-Dichlorobenzene	ND		5.20	ug/L	1	11/21/2011 20:07
1,4-Dichlorobenzene	ND		5.20	ug/L	1	11/21/2011 20:07
2,4,5-Trichlorophenol	ND		5.20	ug/L	1	11/21/2011 20:07
2,4,6-Trichlorophenol	ND		5.20	ug/L	1	11/21/2011 20:07
2,4-Dichlorophenol	ND		5.20	ug/L	1	11/21/2011 20:07
2,4-Dinitrophenol	ND		26.0	ug/L	1	11/21/2011 20:07
2,4-Dinitrotoluene	ND		5.20	ug/L	1	11/21/2011 20:07
2,6-Dinitrotoluene	ND		5.20	ug/L	1	11/21/2011 20:07
2-Chloronaphthalene	ND		5.20	ug/L	1	11/21/2011 20:07
2-Chlorophenol	ND		5.20	ug/L	1	11/21/2011 20:07
2-Methylnaphthalene	**6.08**		5.20	ug/L	1	11/21/2011 20:07
2-Methylphenol	ND		5.20	ug/L	1	11/21/2011 20:07
2-Nitroaniline	ND		5.20	ug/L	1	11/21/2011 20:07
2-Nitrophenol	ND		5.20	ug/L	1	11/21/2011 20:07
3 and/or 4-Methylphenol	ND		5.20	ug/L	1	11/21/2011 20:07
3,3'-Dichlorobenzidine	ND		10.4	ug/L	1	11/21/2011 20:07
3-Nitroaniline	ND		26.0	ug/L	1	11/21/2011 20:07
4,6-Dinitro-2-methylphenol	ND		26.0	ug/L	1	11/21/2011 20:07
4-Chloro-3-methylphenol	ND		5.20	ug/L	1	11/21/2011 20:07
4-Chloroaniline	ND		26.0	ug/L	1	11/21/2011 20:07
4-Chlorophenyl phenyl ether	ND		5.20	ug/L	1	11/21/2011 20:07
Acenaphthene	ND		5.20	ug/L	1	11/21/2011 20:07
Acenaphthylene	ND		5.20	ug/L	1	11/21/2011 20:07
Anthracene	ND		5.20	ug/L	1	11/21/2011 20:07
Benzo(a)anthracene	ND		5.20	ug/L	1	11/21/2011 20:07
Benzo(a)pyrene	ND		5.20	ug/L	1	11/21/2011 20:07
Benzo(b)fluoranthene	ND		5.20	ug/L	1	11/21/2011 20:07
Benzo(g,h,i)perylene	ND		5.20	ug/L	1	11/21/2011 20:07
Benzo(k)fluoranthene	ND		5.20	ug/L	1	11/21/2011 20:07
Benzoic acid	ND		5.20	ug/L	1	11/21/2011 20:07
Bis(2-Chloroethoxy)methane	ND		5.20	ug/L	1	11/21/2011 20:07
Bis(2-Chloroethyl)ether	ND		5.20	ug/L	1	11/21/2011 20:07
Bis(2-Chloroisopropyl)ether	ND		5.20	ug/L	1	11/21/2011 20:07
Bis(2-Ethylhexyl)phthalate	ND		5.20	ug/L	1	11/21/2011 20:07
4-Bromophenyl phenyl ether	ND		5.20	ug/L	1	11/21/2011 20:07
Butyl benzyl phthalate	ND		5.20	ug/L	1	11/21/2011 20:07
Chrysene	ND		5.20	ug/L	1	11/21/2011 20:07
Di-n-butyl phthalate	ND		5.20	ug/L	1	11/21/2011 20:07
Di-n-octyl phthalate	ND		5.20	ug/L	1	11/21/2011 20:07
Dibenz(a,h)anthracene	ND		5.20	ug/L	1	11/21/2011 20:07
Dibenzofuran	ND		5.20	ug/L	1	11/21/2011 20:07

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290032-J
Lab Project ID: 31103290

Collection Date: 11/17/2011 12:15
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		5.20	ug/L	1	11/21/2011 20:07
Dimethyl phthalate	ND		5.20	ug/L	1	11/21/2011 20:07
2,4-Dimethylphenol	ND		5.20	ug/L	1	11/21/2011 20:07
Diphenylamine	ND		5.20	ug/L	1	11/21/2011 20:07
Fluoranthene	ND		5.20	ug/L	1	11/21/2011 20:07
Fluorene	ND		5.20	ug/L	1	11/21/2011 20:07
Hexachlorobenzene	ND		5.20	ug/L	1	11/21/2011 20:07
Hexachlorobutadiene	ND		5.20	ug/L	1	11/21/2011 20:07
Hexachlorocyclopentadiene	ND		10.4	ug/L	1	11/21/2011 20:07
Hexachloroethane	ND		5.20	ug/L	1	11/21/2011 20:07
Indeno(1,2,3-cd)pyrene	ND		5.20	ug/L	1	11/21/2011 20:07
Isophorone	ND		5.20	ug/L	1	11/21/2011 20:07
Naphthalene	**7.95**		5.20	ug/L	1	11/21/2011 20:07
4-Nitroaniline	ND		26.0	ug/L	1	11/21/2011 20:07
Nitrobenzene	ND		5.20	ug/L	1	11/21/2011 20:07
4-Nitrophenol	ND		26.0	ug/L	1	11/21/2011 20:07
Pentachlorophenol	ND		26.0	ug/L	1	11/21/2011 20:07
Phenanthrene	ND		5.20	ug/L	1	11/21/2011 20:07
Phenol	ND		5.20	ug/L	1	11/21/2011 20:07
Pyrene	ND		5.20	ug/L	1	11/21/2011 20:07
n-Nitrosodi-n-propylamine	ND		5.20	ug/L	1	11/21/2011 20:07
Surrogates						
2,4,6-Tribromophenol	128		29.3-152	%	1	11/21/2011 20:07
2-Fluorobiphenyl	102		50.0-107	%	1	11/21/2011 20:07
2-Fluorophenol	93.0		33.1-118	%	1	11/21/2011 20:07
Nitrobenzene-d5	105		46.0-118	%	1	11/21/2011 20:07
Phenol-d6	101		49.0-120	%	1	11/21/2011 20:07
Terphenyl-d14	111		22.1-142	%	1	11/21/2011 20:07

Batch Information

Analytical Batch: **XMS1310**
Analytical Method: **SW-846 8270D**
Instrument: **MSD10**
Analyst: **CMP**
Analytical Date/Time: **11/21/2011 20:07**

Prep Batch: **XXX1996**
Prep Method: **SW-846 3520C**
Prep Date/Time: **11/18/2011 14:56**
Prep Initial Wt./Vol.: **962 mL**
Prep Extract Vol: **5 mL**

SGS North America Inc.
5500 Business Drive, Wilmington, NC 28405
t 910.350.1903 f 910.350.1557 www.us.sgs.com
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Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290032-L
Lab Project ID: 31103290

Collection Date: 11/17/2011 12:15
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **MADEP EPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C11-C22 Aromatics	ND		0.0953	mg/L	1	11/29/2011 1:03
C19-C36 Aliphatics	ND		0.0448	mg/L	1	11/28/2011 0:35
C9-C18 Aliphatics	ND		0.0336	mg/L	1	11/28/2011 0:35
Surrogates						
2-Bromonaphthalene	120		40.0-140	%	1	11/29/2011 1:03
2-Fluorobiphenyl	108		40.0-140	%	1	11/29/2011 1:03
n-Tricosane	105		40.0-140	%	1	11/28/2011 0:35
o-Terphenyl	96.0		40.0-140	%	1	11/29/2011 1:03

Batch Information

Analytical Batch: **XGC1748**
Analytical Method: **MADEP EPH**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **11/29/2011 01:03**

Prep Batch: **XXX2019**
Prep Method: **SW-846 3520C**
Prep Date/Time: **11/27/2011 09:36**
Prep Initial Wt./Vol.: **892 mL**
Prep Extract Vol: **5 mL**

Print Date: 12/01/2011

N.C. Certification # 481

Results of **Trip Blanks (Not on COC)**

Client Sample ID: **Trip Blanks (Not on COC)**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290034-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 00:00
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,1,1-Trichloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,1,2,2-Tetrachloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,1,2-Trichloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,1-Dichloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,1-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 16:55
1,1-Dichloropropene	ND		1.00	ug/L	1	11/22/2011 16:55
1,2,3-Trichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
1,2,3-Trichloropropane	ND		1.00	ug/L	1	11/22/2011 16:55
1,2,4-Trichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	11/22/2011 16:55
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	11/22/2011 16:55
1,2-Dibromoethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,2-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
1,2-Dichloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
1,2-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 16:55
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	11/22/2011 16:55
1,3-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
1,3-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 16:55
1,4-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
2,2-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 16:55
2-Butanone	ND		25.0	ug/L	1	11/22/2011 16:55
2-Chlorotoluene	ND		1.00	ug/L	1	11/22/2011 16:55
2-Hexanone	ND		5.00	ug/L	1	11/22/2011 16:55
4-Chlorotoluene	ND		1.00	ug/L	1	11/22/2011 16:55
4-Isopropyltoluene	ND		1.00	ug/L	1	11/22/2011 16:55
4-Methyl-2-pentanone	ND		5.00	ug/L	1	11/22/2011 16:55
Acetone	ND		25.0	ug/L	1	11/22/2011 16:55
Benzene	ND		1.00	ug/L	1	11/22/2011 16:55
Bromobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
Bromochloromethane	ND		1.00	ug/L	1	11/22/2011 16:55
Bromodichloromethane	ND		1.00	ug/L	1	11/22/2011 16:55
Bromoform	ND		1.00	ug/L	1	11/22/2011 16:55
Bromomethane	ND		1.00	ug/L	1	11/22/2011 16:55
n-Butylbenzene	ND		1.00	ug/L	1	11/22/2011 16:55
Carbon disulfide	ND		1.00	ug/L	1	11/22/2011 16:55
Carbon tetrachloride	ND		1.00	ug/L	1	11/22/2011 16:55
Chlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
Chloroethane	ND		1.00	ug/L	1	11/22/2011 16:55
Chloroform	ND		1.00	ug/L	1	11/22/2011 16:55
Chloromethane	ND		1.00	ug/L	1	11/22/2011 16:55
Dibromochloromethane	ND		1.00	ug/L	1	11/22/2011 16:55
Dibromomethane	ND		1.00	ug/L	1	11/22/2011 16:55

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Results of **Trip Blanks (Not on COC)**

Client Sample ID: **Trip Blanks (Not on COC)**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290034-A
Lab Project ID: 31103290

Collection Date: 11/17/2011 00:00
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		5.00	ug/L	1	11/22/2011 16:55
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	11/22/2011 16:55
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	11/22/2011 16:55
Diisopropyl Ether	ND		1.00	ug/L	1	11/22/2011 16:55
Ethyl Benzene	ND		1.00	ug/L	1	11/22/2011 16:55
Hexachlorobutadiene	ND		1.00	ug/L	1	11/22/2011 16:55
Isopropylbenzene (Cumene)	ND		1.00	ug/L	1	11/22/2011 16:55
Methyl Iodide	ND		1.00	ug/L	1	11/22/2011 16:55
Methylene chloride	ND		5.00	ug/L	1	11/22/2011 16:55
Naphthalene	ND		1.00	ug/L	1	11/22/2011 16:55
Styrene	ND		1.00	ug/L	1	11/22/2011 16:55
Tetrachloroethene	ND		1.00	ug/L	1	11/22/2011 16:55
Toluene	ND		1.00	ug/L	1	11/22/2011 16:55
Trichloroethene	ND		1.00	ug/L	1	11/22/2011 16:55
Trichlorofluoromethane	ND		1.00	ug/L	1	11/22/2011 16:55
Vinyl chloride	ND		1.00	ug/L	1	11/22/2011 16:55
cis-1,2-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 16:55
m,p-Xylene	ND		2.00	ug/L	1	11/22/2011 16:55
n-Propylbenzene	ND		1.00	ug/L	1	11/22/2011 16:55
o-Xylene	ND		1.00	ug/L	1	11/22/2011 16:55
sec-Butylbenzene	ND		1.00	ug/L	1	11/22/2011 16:55
tert-Butyl methyl ether (MTBE)	ND		1.00	ug/L	1	11/22/2011 16:55
tert-Butylbenzene	ND		1.00	ug/L	1	11/22/2011 16:55
trans-1,2-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 16:55
trans-1,4-Dichloro-2-butene	ND		5.00	ug/L	1	11/22/2011 16:55
Surrogates						
1,2-Dichloroethane-d4	110		64.0-140	%	1	11/22/2011 16:55
4-Bromofluorobenzene	98.0		85.0-115	%	1	11/22/2011 16:55
Toluene d8	95.0		82.0-117	%	1	11/22/2011 16:55

Batch Information

Analytical Batch: **VMS1722**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**
Analytical Date/Time: **11/22/2011 16:55**

Prep Batch: **VXX2409**
Prep Method: **SW-846 5030B**
Prep Date/Time: **11/22/2011 10:52**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 12/01/2011

N.C. Certification # 481

SGS

Results of **Trip Blanks (Not on COC)**

Client Sample ID: **Trip Blanks (Not on COC)**
Client Project ID: **NCDOT Former Crumbly Property**
Lab Sample ID: 31103290034-B
Lab Project ID: 31103290

Collection Date: 11/17/2011 00:00
Received Date: 11/18/2011 15:00
Matrix: Water

Results by **MADEP VPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C5-C8 Aliphatics	ND		100	ug/L	1	11/22/2011 11:56
C9-C10 Aromatics	ND		100	ug/L	1	11/22/2011 11:56
C9-C12 Aliphatics	ND		100	ug/L	1	11/22/2011 11:56
Surrogates						
FID - 4-Bromofluorobenzene	103		70.0-130	%	1	11/22/2011 11:56
PID - 4-Bromofluorobenzene	97.0		70.0-130	%	1	11/22/2011 11:56

Batch Information

Analytical Batch: **VGC1533**
Analytical Method: **MADEP VPH**
Instrument: **GC4**
Analyst: **MDY**
Analytical Date/Time: **11/22/2011 11:56**

Prep Batch: **VXX2405**
Prep Method: **SW-846 5030B**
Prep Date/Time: **11/22/2011 14:39**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 12/01/2011

N.C. Certification # 481

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SGS North America Inc.

Locations Nationwide
- Alaska
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106701

(1)

CLIENT: Amec E+I, Inc.

CONTACT: Helen Corley PHONE NO:(704) 236 3494

PROJECT: NCDOT Former Crumbley Property STE/PWSID#:

REPORTS TO: Helen.corley@amec.com
Matthew.gillig@amec.com
FAX NO.:( )

INVOICE TO: NCDOT

QUOTE #: State Proj: U-5132
WBS: 45155.1.1
P.O. NUMBER:

SGS Reference: 31103290

PAGE 1 OF 4

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used	Analysis Required (3) DRO	GRO	REMARKS
	SB-15	11/16/11	1015	Soil	3	6		X	X	
	SB-16		1025					X	X	
	SB-17		1040					X	X	
	SB-18		1105					X	X	
	SB-19		1110					X	X	
	SB-20		1120					X	X	
	SB-21		1135					X	X	
	SB-22		1145					X	X	
	SB-23		1155					X	X	
	SB-24		1310					X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Matthew Gillig	11/17/11	1615	
Relinquished By: (2)	11/18/11	1500	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Special Deliverable Requirements:

Samples Received Cold? (Circle) YES NO

Temperature°C: 5.8, 5.6, 2.4°C

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
- Alaska
- New Jersey
- North Carolina
- Maryland
- New York
- Ohio

www.us.sgs.com

106702

(1)

CLIENT: AMEC E&I, Inc.

CONTACT: Helen Corley PHONE NO: (704) 236 3494

PROJECT: NCDOT Former Crumbley Property SITE/PWSID#:

REPORTS TO: Helen.Corley@amec.com
Matthew.gillis@amec.com
FAX NO.:( )

INVOICE TO: NCDOT

QUOTE #: State Proj U-5132
WBS: 45155.1.1
P.O. NUMBER:

SGS Reference: 31103290

PAGE 2 OF 4

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis Required (3) PRO	GRO	REMARKS
	SB-25	11/16/11	1345	Soil	3	G		X	X	
	SB-26		1400					X	X	
	SB-27		1430					X	X	
	SB-28		1500					X	X	
	SB-29		1515					X	X	
	SB-30		1540					X	X	
	SB-31		1600					X	X	
	SB-32		1620					X	X	
	SB-33A		1655					X	X	
	SB-33B		1705					X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Matthew Gillis	11/17/11	1615	
Relinquished By: (2)	Date	Time	Received By:
	11/18/11	1500	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 5.8, 5.6, 2.4°C

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS

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SGS North America Inc.

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- New Jersey
- New York
- North Carolina
- Ohio

www.us.sgs.com

106703

(1)

CLIENT: Amec. EoI Fnc

CONTACT: Helen Corley PHONE NO: (704) 236 3494

PROJECT: NCDOT Former Crumbley Property SITE/PWSID#:

REPORTS TO: Helen.corley@amec.com
Matthew.gillis@amec.com
FAX NO.:( )

INVOICE TO: NCDOT

QUOTE #: State Proj 4.5132
WBS 45155.1.1
P.O. NUMBER:

SGS Reference: 31103290

PAGE 3 OF 4

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis Required (3) DRO	GRO	REMARKS
	SB-34A	11/17/11	0905	Soil	3	G		X	X	
	SB-34B		0915					X	X	
	SB-35A		0930					X	X	
	SB-35B		0935					X	X	
	SB-36A		0945					X	X	
	SB-36B		1000					X	X	
	SB-37		1015					X	X	
	SB-38A		1040					X	X	
	SB-38B		1050					X	X	
	SB-39A		1115					X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Matthew Miller	11/17/11	1615	
Relinquished By: (2)	Date	Time	Received By:
	11/18/11	1500	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 5.8, 5.6, 2.4c

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

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Pink - Retained by Client

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- New York
- Ohio

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106704

(1)

CLIENT: Amec E&I, Inc

CONTACT: Helen Corley PHONE NO:(704 236 3494

PROJECT: NCDOT Former Crumbley Property SITE/PWSID#:

REPORTS TO: Helen.Corley@amec.com
Matthew.Sykes@amec.com
FAX NO.:( )

INVOICE TO: NCDOT

QUOTE #: State Proj 4-5132
WBS 45155.1.1

P.O. NUMBER:

SGS Reference: 31103290

PAGE 4 OF 4

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	DRO	GRO	8260	8270	EPH	VPH					REMARKS
	SB-39B	11/17/11	1125	Soil	3	G		X	X									
	MW-1	11/17/11	1215	GW	13	G				X	X	X	X					

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Matthew Sykes	11/17/11	1615	
Relinquished By: (2)	Date	Time	Received By:
	11/18/11	1500	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 5.8, 5.6, 2.4c

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:
☐ RUSH _____ Date Needed ☐ STD

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-AECOM** Work Order No.: **31103290**

1. ___ Shipped
   x Hand Delivered
   Notes:

2. x COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms

3. ___ Custody Tape on Container
   x No Custody Tape

4. ___ Samples Intact
   x Samples Broken / Leaking

5. x Chilled on Receipt Actual Temp.(s) in °C: 5.8, 5.6, 2.4
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications

6. x Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

7. ___ Chlorine absent
   ___ HNO3 < 2
   x HCL < 2
   ___ Additional Preservatives verified (see notes)

8. x Received Within Holding Time
   ___ Not Received Within Holding Time

9. x No Discrepancies Noted
   ___ Discrepancies Noted
   ___ NCDENR notified of Descrepancies*

10. x No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Comments: 9 vials for 8260 and VPH

Inspected and Logged in by: TP

Date: Fri-11/18/11 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met.

MI_11.6