

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

Matthen & Julis

Matthew J. Gillis Staff Scientist II

Helen P. Cole.

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





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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-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						
		nbley Property, P				
2		5132, WBS Elem				
		onville, North Card				
		Job No. 6470-11-				
	alytical Method -		EPA 8015	EPA 8015		
	minant of Concer		TPH-DRO	TPH-GRO		
Sample ID	Date Collected	Sample Depth	-7.40	<1.00		
SB-1 SB-2	9/20/2010 9/20/2010	7'-8' 7'-8'	<7.43	<4.96 <5.98		
SB-3	9/20/2010	7'-8'	<7.77	<5.55		
SB-3	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 SB-8	9/20/2010 9/20/2010	7'-8' 0'-1'	<6.46 21.7	<6.45 26.1		
SB-8 SB-9	9/20/2010	5'-6'	27.0	26.1		
SB-9 SB-10	9/20/2010	5-6	<7.80	<5.40		
SB-10 SB-11	9/20/2010	7'-8'	<7.16	<4.74		
SB-12	9/20/2010	7'-8'	<7.64	<6.33		
SB-12 SB-13	9/20/2010	7'-8'	<6.76	<5.71		
	9/20/2010	7'-8'	<7.90	<5.68		
SB-14 SB-15	11/16/2011	7'-8'	<7.90	<3.69		
SB-10 SB-16	11/16/2011	7'-8'	12.1	<3.52		
SB-10 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-20	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-23	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) Concentration exceeds the NCDENR Action Level Bold Analyte not detected above the RL

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

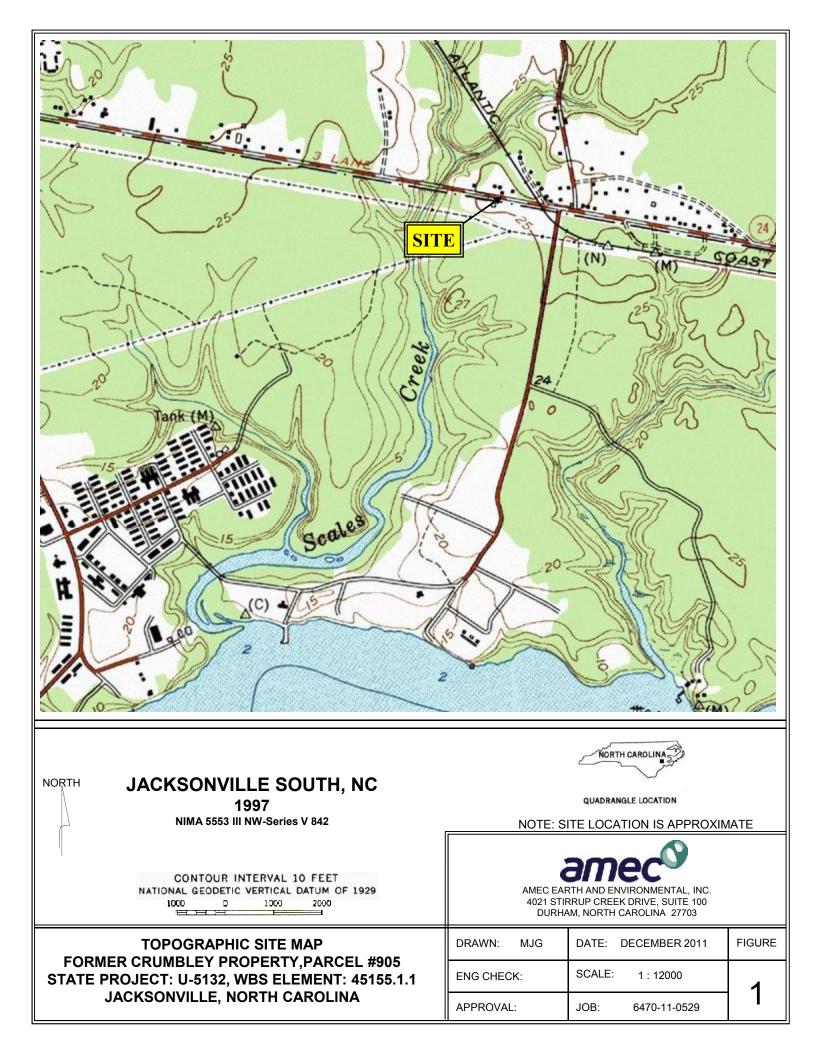
						Groundwater Samp Former Crumble State Project: U-513 Jacksonvi	y Property, Parc	el #905 :: 45155.1.1 na						
			EPA Method 8260B						EPA Method 8270D		MADEP VPH			
Sample ID	Sample Date	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	Ethylbenzene	Isopropylbenzene	Naphthalene	n-Propylbenzene	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

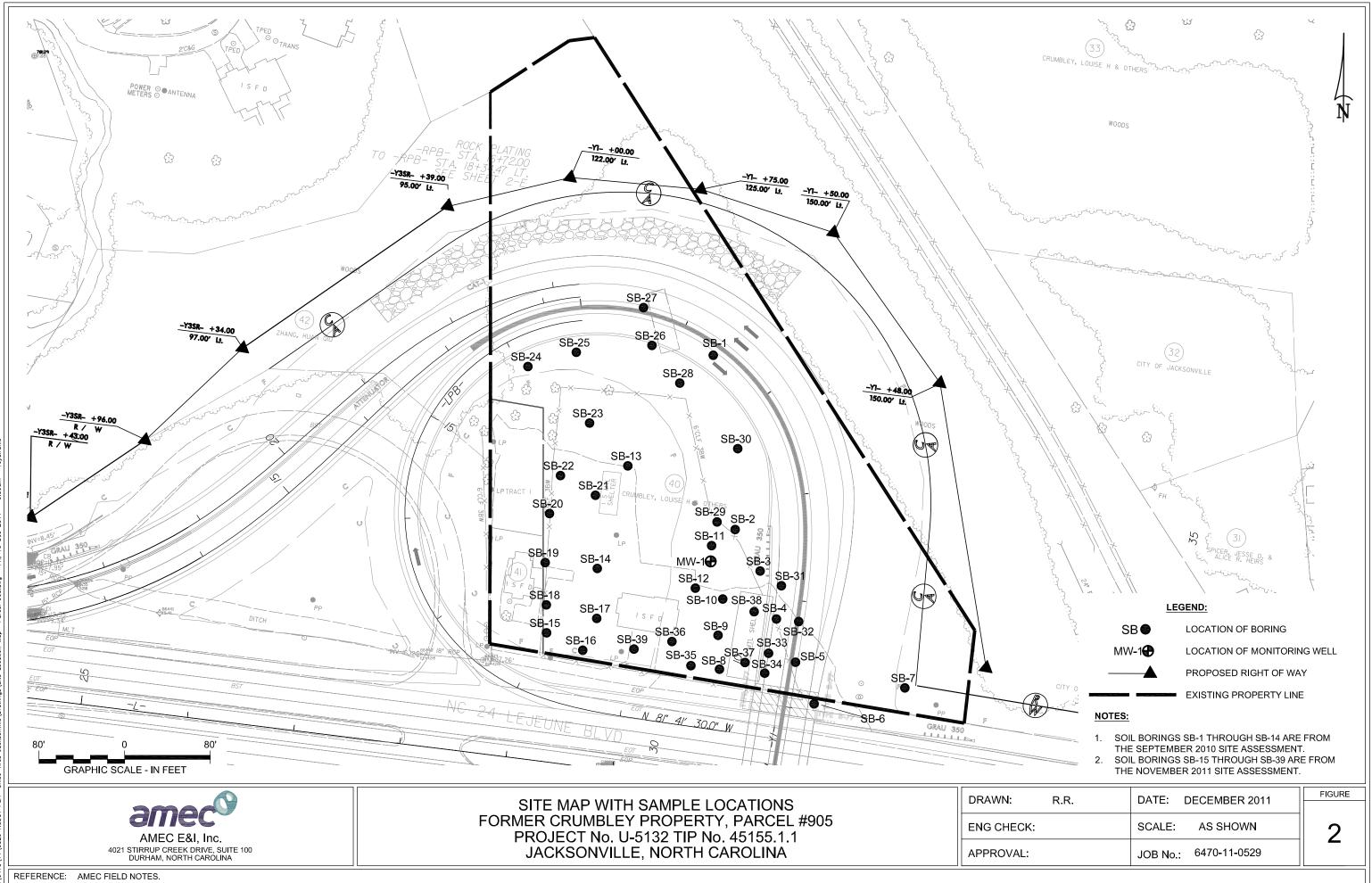
Concentrations reported in micrograms per kilogram (ug/L)
2L Standard Groundwater Quality Standard, codified in the NC Administrative Code (15A NCAC 2L.0202)

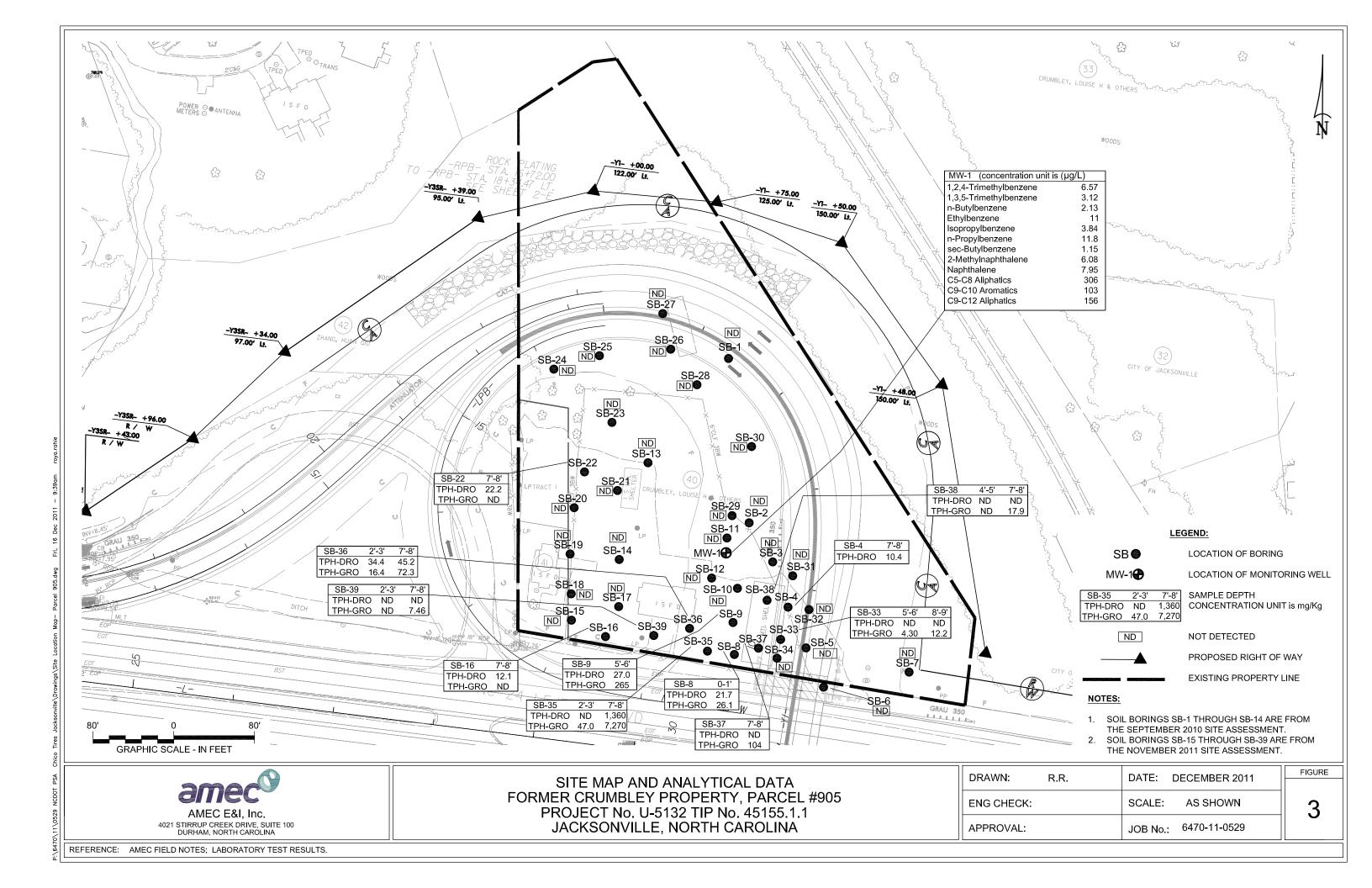
Bold Analyte detected at a concentration that exceeds the RL

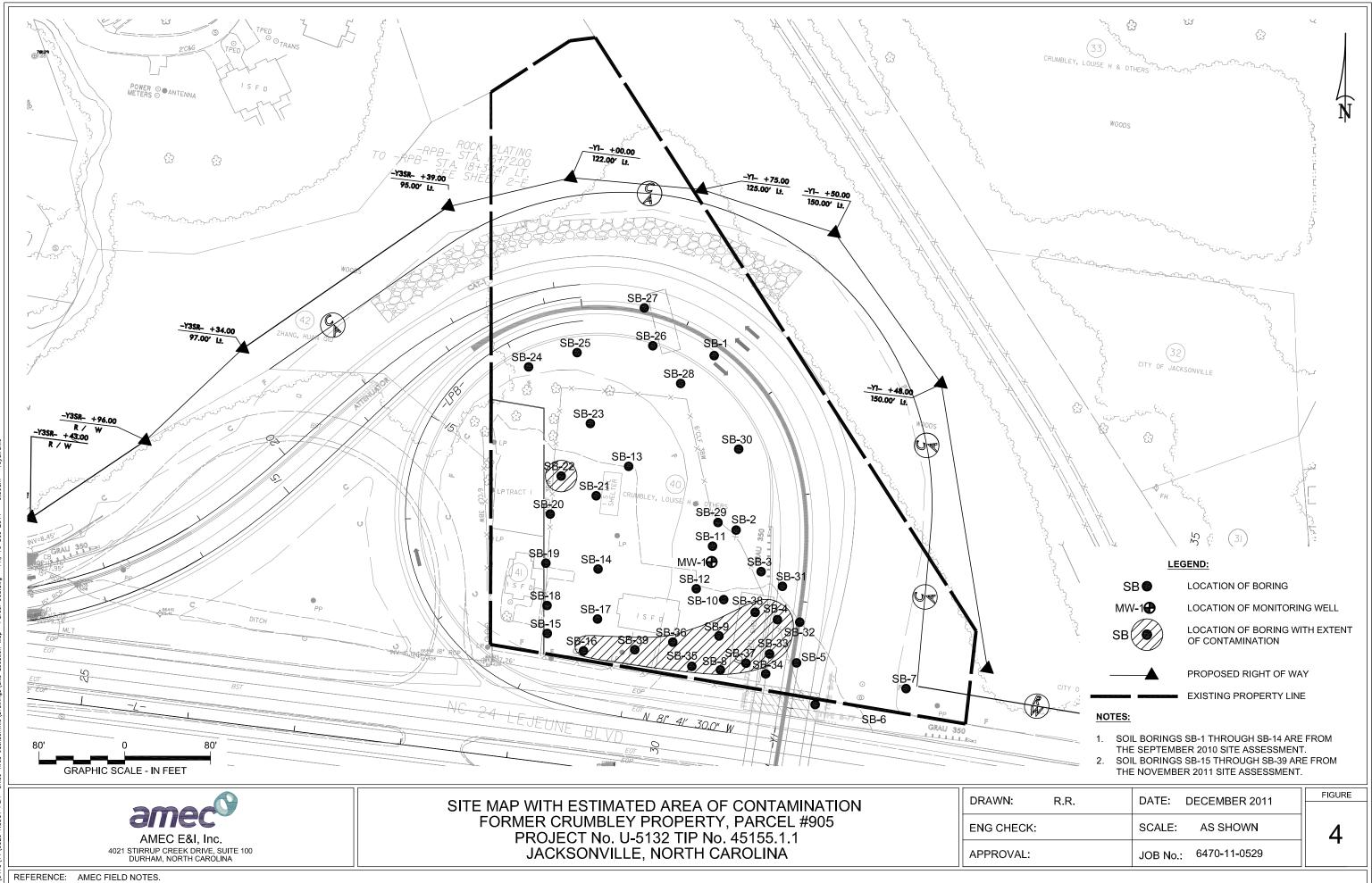
MADEP EPH analysis performed and all carbon ranges were ND

Prepared By: MJG Date: $\frac{12}{12}/11$ Checked By: HPC Date: $\frac{12}{15}/11$









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

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.

Matthin J Miller

Matthew J. Gillis Staff Scientist

N MI

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

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FIGURES

Figure 1 – Topographic Site Map

Figure 2 – Site Layout Showing Soil Boring Locations

TABLE

Table 1 – Summary of Laboratory Test Results

APPENDICES

Appendix A – Schnabel Geophysics Report

Appendix B – Procedures for Collecting Soil Samples

Appendix C – Soil Boring Records

Appendix D – Laboratory Analytical Reports and Chain-of-Custody Records

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 GeoprobeTM 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-ofcustody 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:

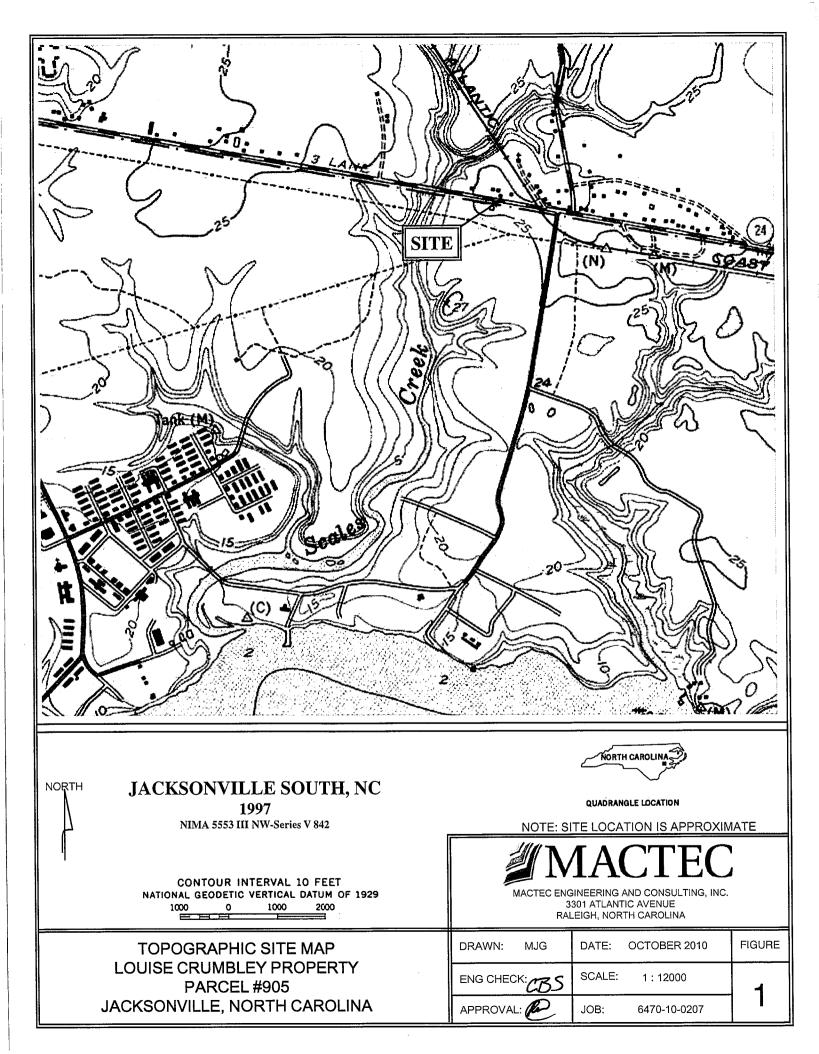
- The laboratory detected TPH DRO in three soil samples (SB-4, SB-8 and SB-9) and TPH GRO in two soil samples (SB-8 and SB-9) at concentrations which exceed NCDENR's Action Level of 10 mg/Kg.
- If the impacted soil at the location of SB-4 extends up to five feet horizontally in all directions and five 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.

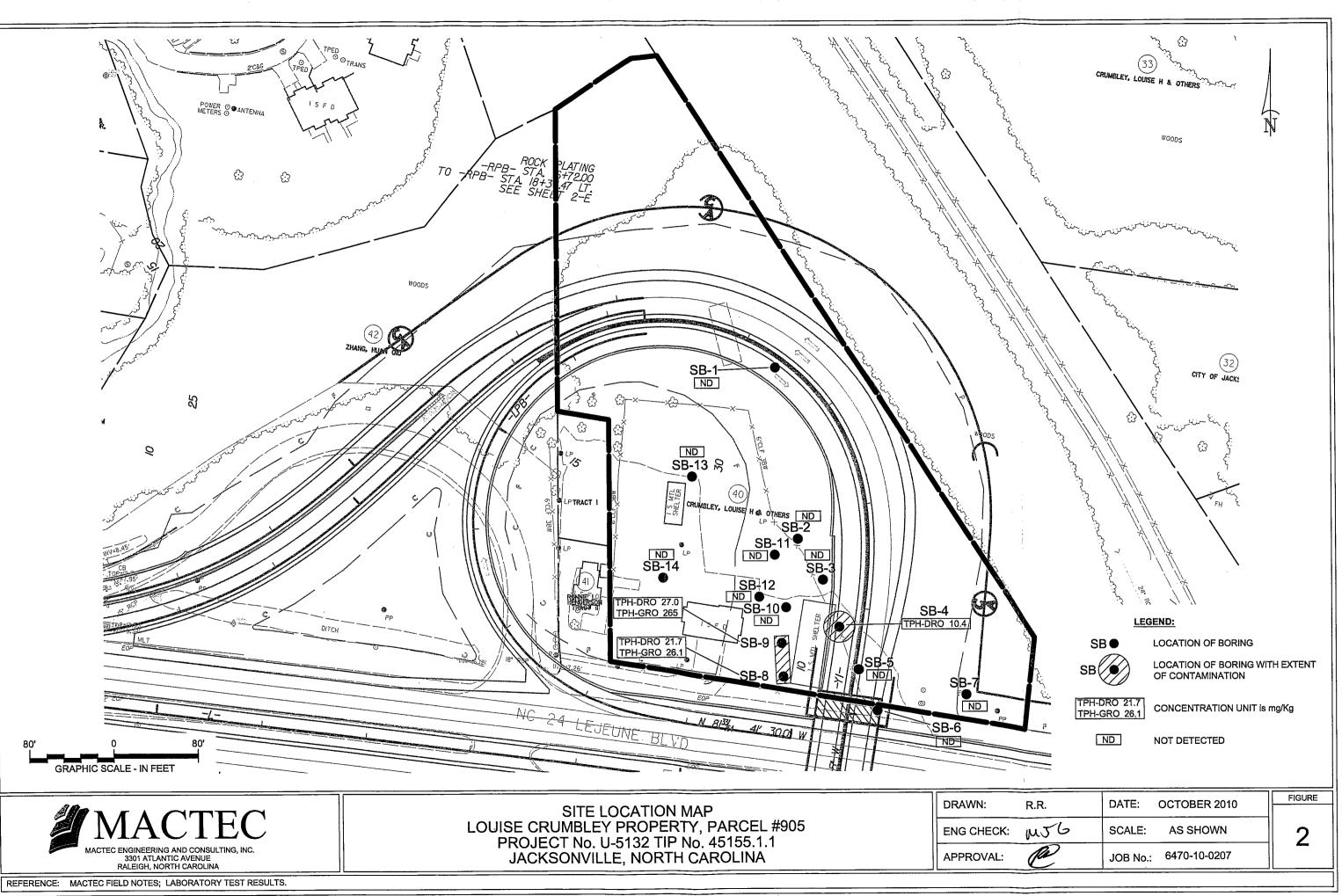
5.0 QUALIFICATIONS

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.

3

FIGURES





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TABLE

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

	alytical Method \rightarrow	EPA 8015	EPA 8015		
Conta	minant of Concern	TPH-DRO	TPH-GRO		
Sample ID	Date Collected	Sample Depth		1	
		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	
NC	CDENR 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: <u>CBS</u> Date: 10/28/10

APPENDIX A

SCHNABEL GEOPHYSICS REPORT



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.

T/ 336-274-9456 F/ 336-274-9486 11A Oak Branch Drive / Greensboro, NC / 27407 schnabel-eng.com

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

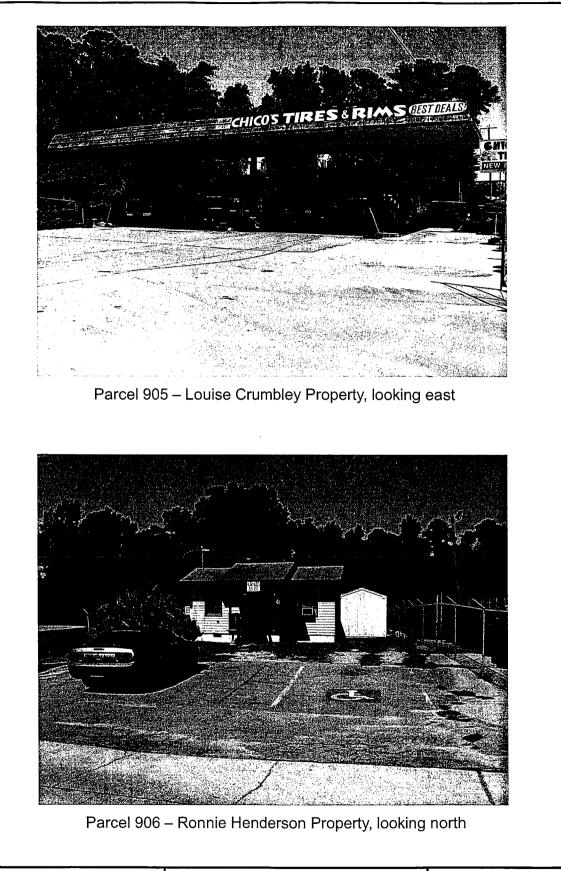
Jeremy S Strohmeyer, LG Project Manager

Edward D Billington, LG Senior Vice President

JW:JS:NB

Attachments: Figures (4)

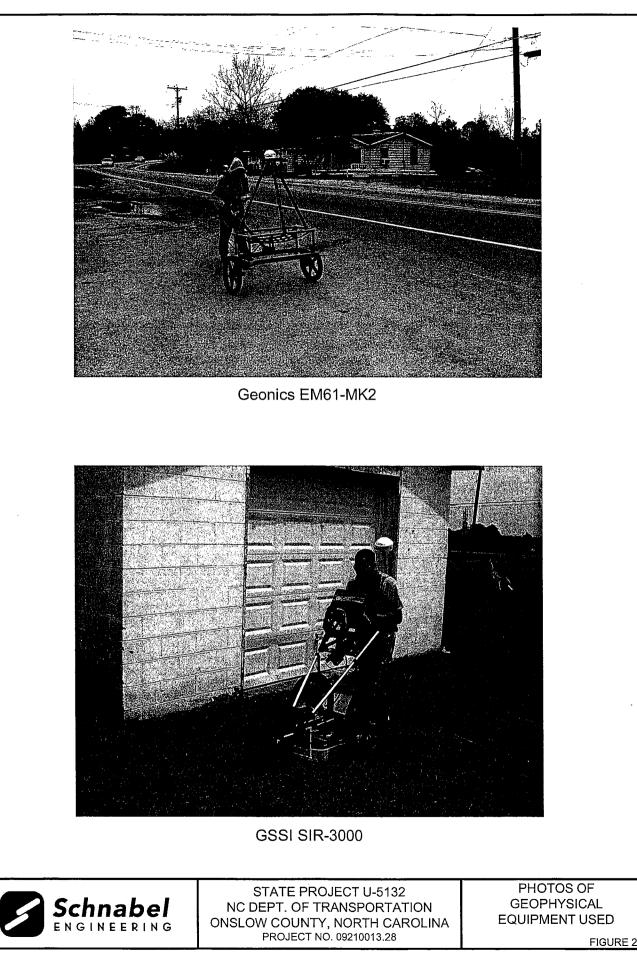
FILE: G1/2009 PROJECTS/09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)/09210013.28 (U-5132, ONSLOW COUNTY)/REPORT/SCHNABEL GEOPHYSICAL REPORT ON U-5132, DOCX



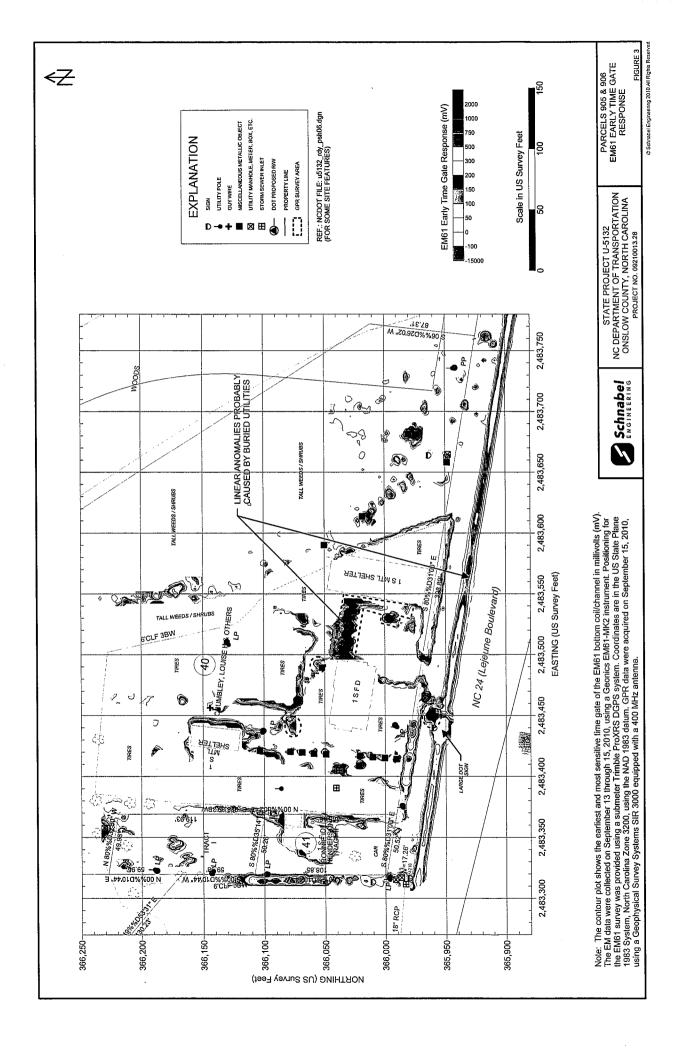


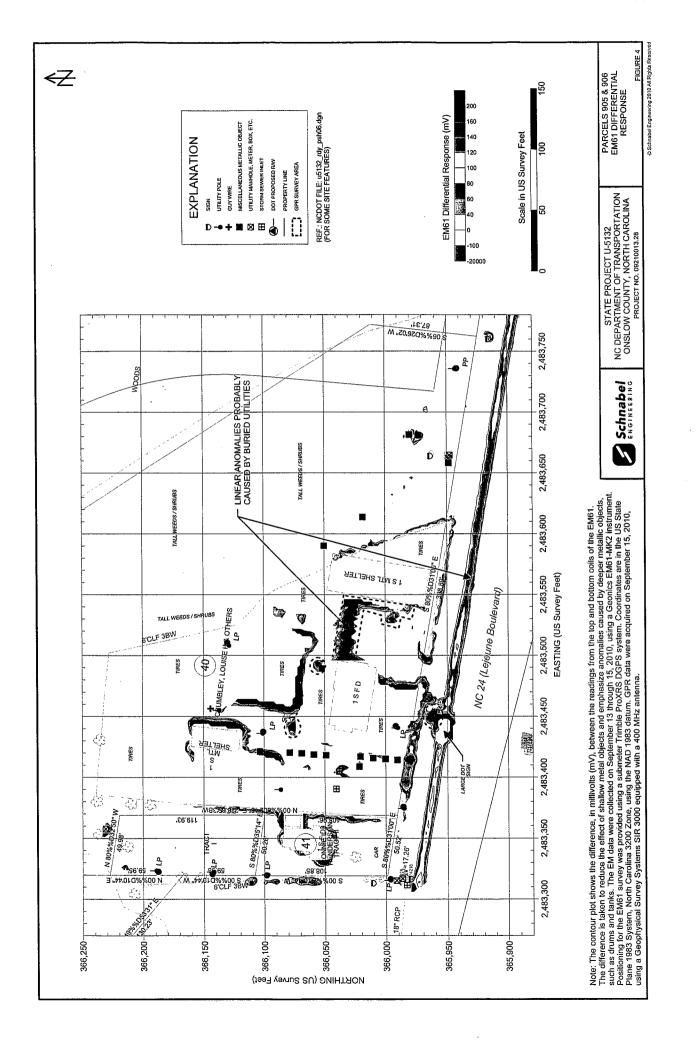
STATE PROJECT U-5132 NC DEPT. OF TRANSPORTATION ONSLOW COUNTY, NORTH CAROLINA PROJECT NO. 09210013.28

PARCELS 905 AND 906 SITE PHOTOS



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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 oneinch 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.

MACTEC

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

APPENDIX C

SOIL BORING RECORDS

MN	MACTEC Engineering and C 3301 Atlantic Avenue Raleigh, North Carolina	and Consulting, Inc. 1	Ω.	Soil Boring Sample Record
ACTEC Pro	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	<u> Representative</u>
ACTEC Pro	MACTEC Project #: 6470-10-0207		Gillis	S
Date: 9-20-10				
Boring ID: SB-1				
Denth		Ē	Headspace Screening Results (in ppm)	Commonte
Interval	Soil Description	lime	CIId	CONTRELES
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: <u>MJ6</u>
 Date: <u>I0-1-I0</u>

 Checked by: <u>C03</u>
 Date: <u>I0/28[10</u>

MACTEC Project ID: Louise Crun MACTEC Project #: 6470-10-0207	Raleigh, North Carolina			1
MACTEC Project 4	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	cepresentative
	#: 6470-10-0207		Gillis	S
Date: 9-20-10				
Boring ID: SB-2				
Denth		Ę	Headspace Screening Results (in ppm)	
Interval	Soil Description	Time	PID	COMMENS
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

MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh. North Carolina	ng, Inc.	S.	Soil Boring Sample Record
D: Louise Crumble	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	epresentative
MACTEC Project #: 6470-10-0207			Gillis	s
		Ě	Headspace Screening Results (in ppm)	Commonto
	Soil Description	LIME	CII4	CONTRACTO
Brown	Brown silty fine to medium sand		0.0	
Brown	Brown silty fine to medium sand		0.0	
Light brown c	Light brown clayey, silty fine to medium sand		0.0	
Light brown c	Light brown clayey, silty fine to medium sand		0.0	
Light brow	Light brown clayey fine to medium sand		0.0	
Light brow	Light brown clayey fine to medium sand		0.0	
Light brow	Light brown clayey fine to medium sand		0.0	
Light brow	Light brown clayey fine to medium sand	1120	0.0	Sample

Prepared by: $M \nabla G$ Date: $10 - 1 - 1 \hat{O}$ Checked by:COSDate:p / 28 / 10

		, Inc.		il Roring Somnla Record
	MIACLEC 3301 Atlantic Avenue Raleigh, North Carolina		2	DON DOLLING DAMPIE ACCOLU
MACTEC Proj	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	epresentative
MACTEC Proj	MACTEC Project #: 6470-10-0207		Gillis	8
Date: 9-20-10				
Boring ID: SB-4	<u>+</u>			
Denth		į	Headspace Screening Results (in ppm)	
Interval	Soil Description	Time	DIA	COMMENTS
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: <u>MJO</u> Date: <u>10/29/1</u>0 Checked by: <u>CBS</u> Date: <u>10/29</u>/10

IN P	MACTEC MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	ıng, Inc.	Sc	Soil Boring Sample Record
MACTEC Proi	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	epresentative
MACTEC Proj	MACTEC Project #: 6470-10-0207		Gillis	S
Date: 9-20-10				
Boring ID: SB-5	5			
Denth		Ē	Headspace Screening Results (in ppm)	
Interval	Soil Description	Ime	PID	CONTINUENTS
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: <u>MJ6</u> Date: <u>10-1-10</u> Checked by: <u>CB5</u> Date: <u>10/18</u>/10

MACTEC		MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleich, North Carolina	, Inc.	So	Soil Boring Sample Record
ect ID: Loi	MACTEC Project ID; Louise Crumbley Property, Parcel #905	arcel #905		MACTEC Field Representative	epresentative
MACTEC Project #: 6470-10-0207	0-10-0207			Gillis	
Boring ID: SB-6					
			Ē	Headspace Screening Results (in ppm)	,
	Soil Description	ПОІ	lime	PID	Comments
[i]	Light brown clayey, silty fine to medium sand	ne to medium sand		0.0	
Li.	Light brown clayey, silty fine to medium sand	ne to medium sand		0.0	
Li.	Light brown clayey, silty fine to medium sand	ne to medium sand		0.0	
Lig	Light brown to gray clayey fine to medium sand	ine to medium sand		0.0	
Lig	Light brown to gray clayey fine to medium sand	ine to medium sand		0.0	
Lig	Light brown to gray clayey fine to medium sand	ine to medium sand		0.0	
Lig	Light brown to gray clayey fine to medium sand	ine to medium sand		0.0	
Lig	Light brown to gray clayey fine to medium sand	ine to medium sand	1155	0.0	Sample

Prepared by: <u>NJ6</u> Date: <u>10-1-10</u> Checked by: <u>CD5</u> Date: <u>10/38</u>/10

MACTEC Project ID: Louise Crun MACTEC Project #: 6470-10-0207 Date: 9-20-10 Boring ID: SB-7	MACTEC Project ID: Louise Crumbley Property, Parcel #905 MACTEC Project #: 6470-10-0207 Date: 9-20-10				
[ACTEC Project #: 6 ate: 9-20-10 oring ID: SB-7	6470-10-0207		MACTEC Field Representative	epresentative	
Date: 9-20-10 Boring ID: SB-7			Gillis		
Boring ID: SB-7					
Denth		Ē	Headspace Screening Results (in ppm)		
Interval	Soil Description	Time	CII4	COMMENTS	
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:
 MJ U
 Date:
 ID-1-10

 Checked by:
 C.RS
 Date:
 ID

MI/	MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh. North Carolina	ig, Inc.	ž	Soil Boring Sample Record
MACTEC Proi	iect ID: Louise Crumble	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	<u> Representative</u>
MACTEC Proj	MACTEC Project #: 6470-10-0207			Gillis	S
Date: 9-20-10					
Boring ID: SB-8	œ				
Denth			Ē	Headspace Screening Results (in ppm)	
Interval		Soil Description	Ime	PID	CONTREME
0-1	Black s	Black silty fine to medium sand	1225	31.6	Sample
1-2	Light brown to	Light brown to gray clayey fine to medium sand		2.5	
2-3	Light brown to	Light brown to gray clayey fine to medium sand		1.0	
3-4	Light brown to	Light brown to gray clayey fine to medium sand		2.5	
4-5	Light brown to	Light brown to gray clayey fine to medium sand		0.5	
5-6	Light brown to	Light brown to gray clayey fine to medium sand		0.0	
6-7	Light brown to	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to	Light brown to gray clayey fine to medium sand		0.0	

Prepared by: NJS Date: 10-1-10

Checked by: CDS Date: 10/28/10

M/	MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Releich North Carolina	ıg, İnc.	ŏ	Soil Boring Sample Record
MACTEC Pro	MACTRC Project ID: Louise Crumhley Property, Parcel #905	Pronerty, Parcel #905		MACTEC Field Representative	cepresentative
MACTEC Pro	MACTEC Project #: 6470-10-0207			Gillis	S
Date: 9-20-10					
Boring ID: SB-9	6-				
Dowell			Ē	Headspace Screening Results (in ppm)	
Interval		Soil Description	lime	LII	CONTINUES
0-1	Black sil	Black silty fine to medium sand		17.1	
1-2	Brown to light br	Brown to light brown clayey fine to medium sand		4.2	
2-3	Brown to light br	Brown to light brown clayey fine to medium sand		15.5	
3-4	Brown to light br	Brown to light brown clayey fine to medium sand		401	
4-5	Brown to light br	Brown to light brown clayey fine to medium sand		418	
5-6	Brown to light br	Brown to light brown clayey fine to medium sand	1240	1,004	Sample
6-7	Brown to light br	Brown to light brown clayey fine to medium sand		75.4	
7-8	Brown to light br	Brown to light brown clayey fine to medium sand		299	

Prepared by: <u>WT6</u> Date: <u>No-1-L0</u> Checked by: <u>CBS</u> Date: <u>10/38</u>/10

MI/	MACTEC 3301 3301 Ralei	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	g, Inc.	Sc	Soil Boring Sample Record
MACTEC Pro	MACTEC Project ID: Louise Crumbley Property, Parcel #905	rty, Parcel #905		MACTEC Field Representative	<u>tepresentative</u>
MACTEC Pro	MACTEC Project #: 6470-10-0207			Gillis	S
Date: 9-20-10					
Boring ID: SB-10	10				
Denth			Ě	Headspace Screening Results (in ppm)	Comments
Interval	Soil De	Soil Description	TIME	PID	
0-1	Black silty fine	Black silty fine to medium sand		3.2	
1-2	Light brown clayey	Light brown clayey fine to medium sand		6.4	
2-3	Light brown clayey	Light brown clayey fine to medium sand		0.5	
3-4	Light brown clayey	Light brown clayey fine to medium sand		0.2	
4-5	Light brown to gray clayey fine to mediu	ivey fine to medium sand		0.8	
5-6	Light brown to gray cla	Light brown to gray clayey fine to medium sand		1.1	
6-7	Light brown to gray cla	Light brown to gray clayey fine to medium sand		2.0	
7-8	Light brown to gray cla	Light brown to gray clayey fine to medium sand	1255	8.0	Sample

,

Checked by: 235 Date: 10/28/10 Prepared by: wrte Date: 10-1-10

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MI	MACTEC MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	ing, Inc.	×.	Soil Boring Sample Record
ACTEC Pro	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	<u> </u>
ACTEC Pro	MACTEC Project #: 6470-10-0207		Gillis	S
Date: 9-20-10				
Boring ID: SB-11	11			
Denth			Headspace Screening Results (in ppm)	Commonte
Interval	Soil Description		DID	
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: <u>ATG</u> Date: <u>10-1-10</u> Checked by: <u>CTS</u> Date: <u>10/38/10</u>

M M	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	iing, Inc.	Sc	Soil Boring Sample Record
MACTEC Proj	MACTEC Project ID: Louise Crumbley Property, Parcel #905		MACTEC Field Representative	<u>tepresentative</u>
MACTEC Proj	MACTEC Project #: 6470-10-0207		Gillis	S
Date: 9-20-10				
Boring ID: SB-12	12			
Denth		Ë	Headspace Screening Results (in ppm)	Comments
Interval	Soil Description		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
		1		

Prepared by: 1436 Date: 10-1-10

Checked by: CPS. Date: 10/28/10

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M/	MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	ing, Inc.	Š	Soil Boring Sample Record
MACTEC Pro	MACTEC Project ID: Louise Crumbley Property, Parcel #905	v Property, Parcel #905		MACTEC Field Representative	<u>epresentative</u>
MACTEC Pro	MACTEC Project #: 6470-10-0207			Gillis	S
Date: 9-20-10					
Boring ID: SB-13	-13				
Denth			į	Headspace Screening Results (in ppm)	Commonder C
Interval		Soil Description	Time	CIId	CONTRELES
0-1	Brown s.	Brown silty fine to medium sand		0.0	
1-2	Brown s.	Brown silty fine to medium sand		0.0	
2-3	Light brown	Light brown clayey fine to medium sand		0.0	
3-4	Light brown	Light brown clayey fine to medium sand		0.0	
4-5	Light brown	Light brown clayey fine to medium sand		0.0	
5-6	Light brown	Light brown to gray fine to medium sand		0.0	
6-7	Light brown	Light brown to gray fine to medium sand		0.0	
7-8	Light brown	Light brown to gray fine to medium sand	1430	0.0	Sample

Prepared by: WJ Date: 10-140 Checked by: CBS Date: 10/28/10

MI		MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	5, Inc.	Sc	Soil Boring Sample Record
MACTEC Pro	MACTFC Project ID: Louise Crumbley Property, Parcel #905	roperty, Parcel #905		MACTEC Field Representative	epresentative
MACTEC Pro	MACTEC Project #: 6470-10-0207			Gillis	S
Date: 9-20-10					
Boring ID: SB-14	-14				
Denth			Ė	Headspace Screening Results (in ppm)	Januara C
Interval	ōŚ	Soil Description	Time	CII4	COMMENTS
0-1	Brown silty	Brown silty fine to medium sand		0.0	
1-2	Brown silty	Brown silty fine to medium sand		0.0	
2-3	Brown silty	Brown silty fine to medium sand		0.0	
3-4	Brown silty	Brown silty fine to medium sand		0.0	
4-5	Light brown to gra	Light brown to gray clayey fine to medium sand		0.0	
5-6	Light brown to gra	Light brown to gray clayey fine to medium sand		0.0	
2-9	Light brown to gra	Light brown to gray clayey fine to medium sand		0.0	
7-8	Light brown to gra	Light brown to gray clayey fine to medium sand	1445	0.0	Sample

Prepared by: <u>سبر</u> Date: <u>۱۵۰۲-۱</u>۵ Checked by: <u>دیج</u> Date: <u>۱۵/ع</u>//۵

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.

ager 28-Sept.-10 Date Barbara Hager

SGS North America Inc. | Environmental Division 5500 Business Dr., Wilmington, NC 28405 t (910) 350-1903 f (910) 350-1557 www.us.sgs.com

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.

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-1 Client Project ID: NCDOT J Lab Sample ID: G132-223 Lab Project ID: G132-223	9-1D		Date Collected: Date Received: Matrix: Solids Report Basis:	9/22/2010 Soil 82.89	0:50
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

40-140

32.3

80.8

40

OTP

Comments:

Batch Information

Analytical Batch: EP092410	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.49 G
•	Prep Final Vol: 10 mL

Analyst: <u>FX</u>

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 33.44 G
·	Prep Final Vol: 10 mL

Analyst: FX

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 33.34 G
-	Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-4 Client Project ID: NCDOT Lab Sample ID: G132-22 Lab Project ID: G132-22	39-4D		Date Collected: Date Received: Matrix: Solids Report Basis:	9/22/2010 Soil 76.32	1:40
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 40	Control Limits 40-140	Spike Result 29.7	Percent Recovery 74.3

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 33.27 G
·	Prep Final Vol: 10 mL

Analyst: <u>FX</u>

NC Certification #481

Reviewed By: Page 6 of 44

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.17 G
·	Prep Final Vol: 10 mL

Analyst: FX

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

Comments:

Batch Information

Analyst: FX

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.06 G
-	Prep Final Vol: 10 mL

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-7	Date Collected: 9/20/2010 12:10
Client Project ID: NCDOT Jacksonville	Date Received: 9/22/2010
Lab Sample ID: G132-2239-7D	Matrix: Soil
Lab Project ID: G132-2239	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	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 33.78 G
	Prep Final Vol: 10 mL

Analyst: <u>FX</u>

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Paramotor	Posult	DI	Unito	Dilution	П
			Report Basis:	Dry Weight	
Lab Project ID: G132	2-2239		Solids	83.83	
Lab Sample ID: G132	2-2239-8D		Matrix:	Soil	
Client Project ID: NCD	OT Jacksonville		Date Received:	9/22/2010	
Client Sample ID: SB-8			Date Collected:	9/20/2010 12:2	25

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 33.62 G
	Prep Final Vol: 10 mL

Analyst: <u>F</u>



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

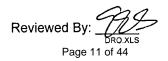
Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.32 G
	Prep Final Vol: 10 mL

Analyst: _____

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

Comments:

Batch Information

Analytical Batch: EP09	Prep batch:	17426
Analytical Method: 8015	Prep Method:	3541
Instrument: GC6	Prep Date:	09/23/10
Analyst: BWS	Initial Prep Wt/Vol:	32.5 G
·	Prep Final Vol:	10 mL

Analyst: <u>FA</u>

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.08 G
-	Prep Final Vol: 10 mL

Analyst: <u>FX</u>



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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.9 G
	Prep Final Vol: 10 mL

Analyst:

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.67 G
	Prep Final Vol: 10 mL

Analyst: FX

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

Comments:

Batch Information

Analytical Batch: EP092310	Prep batch: 17426
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/23/10
Analyst: BWS	Initial Prep Wt/Vol: 32.6 G
-	Prep Final Vol: 10 mL

Analyst: <u>FX</u>

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

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

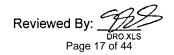
Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	17.9	7.63	mg/Kg	1	09/24/10 16:02
Surrogate Spike Results OTP		Spike Added 40	Control Limits 40-140	Spike Result 30.7	Percent Recovery 76.7

Comments:

Batch Information

Analytical Batch: EP092410	Prep batch: 17435
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/24/10
Analyst: BWS	Initial Prep Wt/Vol: 33.07 G
	Prep Final Vol: 10 mL

Analyst: FX



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

Comments:

Batch Information

Analytical Batch: EP092410	Prep batch: 17435
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/24/10
Analyst: BWS	Initial Prep Wt/Vol: 32.84 G
•	Prep Final Vol: 10 mL

Analyst: <u>FX</u>

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Lab Project ID: G132-2239	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 OTP		Spike Added 40	Control Limits 40-140	Spike Result 30.5	Percent Recovery 76.3

Comments:

Batch Information

.

Analytical Batch: EP092410	Prep batch: 17435
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/24/10
Analyst: BWS	Initial Prep Wt/Vol: 32.75 G
	Prep Final Vol: 10 mL

Analyst:



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

Comments:

Batch Information

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

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

Analyst: FX

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-19	Date Collected: 9/20/2010 15:50
Client Project ID: NCDOT Jacksonville	Date Received: 9/22/2010
Lab Sample ID: G132-2239-19D	Matrix: Soil
Lab Project ID: G132-2239	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 OTP		Spike Added 40	Control Limits 40-140	Spike Result 33.7	Percent Recovery 84.4

Comments:

Batch Information

Analytical Batch:	EP092410	Prep batch: 17435
Analytical Method:	8015	Prep Method: 3541
Instrument:	GC6	Prep Date: 09/24/10
Analyst:	BWS	Initial Prep Wt/Vol: 32.55 G
•		Prep Final Vol: 10 mL

Analyst: _____

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

Comments:

Batch Information

Analytical Batch: EP092410	Prep batch: 17435
Analytical Method: 8015	Prep Method: 3541
Instrument: GC6	Prep Date: 09/24/10
Analyst: BWS	Initial Prep Wt/Vol: 32.22 G
-	Prep Final Vol: 10 mL

Analyst: <u>FX</u>

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-1	1 Analyzed By: BAO							
Client Project ID: NCDOT Jacksonville			Date Collected: 9/20/2010 10:50					
Lab Sample ID: G132-2239-1A			Date Received: 9/22/2010					
Lab Project ID: G132-2239			Matrix: Soil					
Report Basis: Dry Weight			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	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 7.3 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: BAO	

Analyst: ______

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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: G132-22	39-2A		Da	ate Received:	9/22/2010			
Lab Project ID: G132-22	39			Matrix:	Soil			
Report Basis: Dry Weig	ht			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:

Reviewed By:

NC Certification #481

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-3				Analyzed By:	BAO	
Client Project ID: NCDOT	Jacksonville		Da	ate Collected:	9/20/2010	11:20
Lab Sample ID: G132-22	39-3A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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	1 149	70-130
Comments:						

Batch Information

Analytical Batch: VP092310	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 7.01 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: BAO	

Analyst: <u>MML</u>

Reviewed By:

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: G132-22	39-4A		Da	ate Received:	9/22/2010		
Lab Project ID: G132-22	39			Matrix:	Soil		
Report Basis: Dry Weig	ht			Solids	76.32		
Analyte	Result	RL		Units	Dilution Factor	Date Analyzed	
					Facili	Allalyzeu	
Gasoline Range Organics	BQL	5.44		mg/Kg	1	09/23/10 19:03	
Surrogate Spike Results							
ourreguie opine riceune		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: <u>MM</u>

Reviewed By: GRO.XLS

NC Certification #481

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-5				Analyzed By:	BAO	
Client Project ID: NCDOT J	acksonville		Da	ate Collected:	9/20/2010 1	1:45
Lab Sample ID: G132-223	9-5A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-223	9			Matrix:	Soil	
Report Basis: Dry Weigh	nt			Solids	74.09	
Analyte	Result	RL		Units	Dilution	Date
Analyte	nesun			Units	Factor	Analyzed
Gasoline Range Organics	BQL	5.95		mg/Kg	1	09/23/10 19:30
Surrogate Spike Results		Added	Result	Booovorv	Flag	Limits
BFB		100	105.0	Recovery 105.0	Flag	70-130
Comments:						

Batch Information

.

Analytical Batch: VP092310	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 6.8 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: BAO	

Analyst: ______

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-6				Analyzed By:	LMC			
Client Project ID: NCDOT Jacksonville			Date Collected: 9/20/2010 11:55					
Lab Sample ID: G132-22	39-6A		Da	ate Received:	9/22/2010			
Lab Project ID: G132-22	39			Matrix:	Soil			
Report Basis: Dry Weig	ht				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	Booult	Basayary	Flag	Limits		
BFB		100	Result 113.0	Recovery 113.0	Flag	70-130		
• ·								

Comments:

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 6.92 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Analyst: _____(___

NC Certification #481

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons by GC/FID 8015

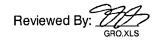
Client Sample ID: SB-7				Analyzed By:	LMC			
Client Project ID: NCDOT Jacksonville			Da	ate Collected:	9/20/2010	12:10		
Lab Sample ID: G132-22	39-7A		Da	ate Received:	9/22/2010			
Lab Project ID: G132-22	39			Matrix:	Soil			
Report Basis: Dry Weig	Basis: Dry Weight			Solids 91.67				
Analyte	Result	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	, lag	70-130		
•								

Comments:

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 5.07 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Analyst: ______



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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-8				Analyzed By:	LMC	
Client Project ID: NCDOT Jacksonville			Date Collected: 9/20/2010 12:25			
Lab Sample ID: G132-223	89-8A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-223	39			Matrix:	Soil	
Report Basis: Dry Weigl	nt			Solids	83.83	
Analyte	Result	RL		Units	Dilution	Date
•					Factor	Analyzed
Gasoline Range Organics	26.1	5.53		mg/Kg	1	09/24/10 14:43
Surrogate Spike Results			Denti	D		1 5
BFB		Added 100	Result 107.0	Recovery 107.0	Flag	Limits 70-130
Comments:						

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 6.47 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Analyst: MMC



NC Certification #481

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-9				Analyzed By:	LMC	
Client Project ID: NCDOT Jacksonville			Da	ate Collected:	9/20/2010	12:40
Lab Sample ID: G132-223	39-9A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-223	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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: ______

Reviewed By GRO.XLS

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-10				Analyzed By:	LMC		
Client Project ID: NCDOT Jacksonville			Date Collected: 9/20/2010 12:55				
Lab Sample ID: G132-223	39-10A		Da	ate Received:	9/22/2010		
Lab Project ID: G132-22	39			Matrix:	Soil		
Report Basis: Dry Weig	ht			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	
Commenter							

Comments:

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 7.04 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-11				Analyzed By:	LMC	
Client Project ID: NCDOT Jacksonville			Da	ate Collected:	9/20/2010	14:10
Lab Sample ID: G132-22	39-11A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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/VoI: 7.27 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Analyst:

Reviewed By: GRO.XLS

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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: G132-223	39-12A		Da	ate Received:	9/22/2010		
Lab Project ID: G132-223	39			Matrix:	Soil		
Report Basis: Dry Weig	ht			Solids	79.59		
Analyte	Result	RL		Units	Dilution	Date	
					Factor	Analyzed	
Gasoline Range Organics	BQL	6.33		mg/Kg	1	09/24/10 16:31	
				00			
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: ______

Reviewed By: GRO.XLS

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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-13 Client Project ID: NCDOT Jacksonville				Analyzed By: LMC Date Collected: 9/20/2010 14:30				
Lab Sample ID: G132-22	39-13A		Da	ate Received:	9/22/2010			
Lab Project ID: G132-22	39			Matrix:	Soil			
Report Basis: Dry Weig	ht			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	5	70-130		
0								

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	



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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-14				Analyzed By:	LMC	
Client Project ID: NCDOT	Jacksonville		Da	ate Collected:	9/20/2010	14:45
Lab Sample ID: G132-22	39-14A		D	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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	i lag	70-130
-						

Comments:

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 6.8 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Reviewed By: March GRO.XLS

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-15				Analyzed By:	LMC	
Client Project ID: NCDOT	Jacksonville		Da	ate Collected:	9/20/2010	15:10
Lab Sample ID: G132-22	39-15A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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	. lag	70-130
-						

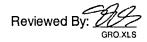
Comments:

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:

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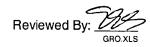


Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-16				Analyzed By:	LMC	
Client Project ID: NCDOT	Jacksonville		Da	ate Collected:	9/20/2010	15:20
Lab Sample ID: G132-22	39-16A		D	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			Solids	78.26	
Analyte	Result	RL	,	Units	Dilution	Date
					Factor	Analyzed
Gasoline Range Organics	BQL	5.51		mg/Kg	1	09/24/10 18:19
000					·	
Surrogate Spike Results						
		Added	Result	Recovery	Flag	Limits
BFB		100	108.0	108.0	-	70-130
Comments:						

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 6.96 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	



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Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-17				Analyzed By:	LMC	
Client Project ID: NCDOT	Jacksonville		Da	ate Collected:	9/20/2010	15:30
Lab Sample ID: G132-22	39-17A		Da	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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	Tiay	70-130
•						

Comments:

Batch Information

Analytical Batch:	VP092410	Prep Method: 5035
Analytical Method:	8015	Initial Wt/Vol: 7.35 g
Instrument ID:	GC4	Final Volume: 5 mL
Analyst:	LMC	

Analyst: ______



Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-18				Analyzed By:	LMC			
Client Project ID: NCDOT Jacksonville			Da	Date Collected: 9/20/2010 15:40				
Lab Sample ID: G132-22	39-18A		D	ate Received:	9/22/2010			
Lab Project ID: G132-22	39			Matrix:	Soil			
Report Basis: Dry Weig	iht			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								
BFB		Added 100	Result 106.0	Recovery 106.0	Flag	Limits 70-130		
0								

Comments:

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 7.84 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Analyst: ______



Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-19				Analyzed By:	LMC	
Client Project ID: NCDOT	Jacksonville		D	ate Collected:	9/20/2010	15:50
Lab Sample ID: G132-22	39-19A		D	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 7.2 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

Analyst: ______

Reviewed By: GRO.XLS

Results for Total Petroleum Hydrocarbons by GC/FID 8015

Client Sample ID: SB-20				Analyzed By:	LMC	
Client Project ID: NCDOT	Jacksonville		Da	ate Collected:	9/20/2010	16:00
Lab Sample ID: G132-22	39-20A		D	ate Received:	9/22/2010	
Lab Project ID: G132-22	39			Matrix:	Soil	
Report Basis: Dry Weig	ht			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				_		
BFB		Added 100	Result 104.0	Recovery 104.0	Flag	Limits 70-130
Commenter						

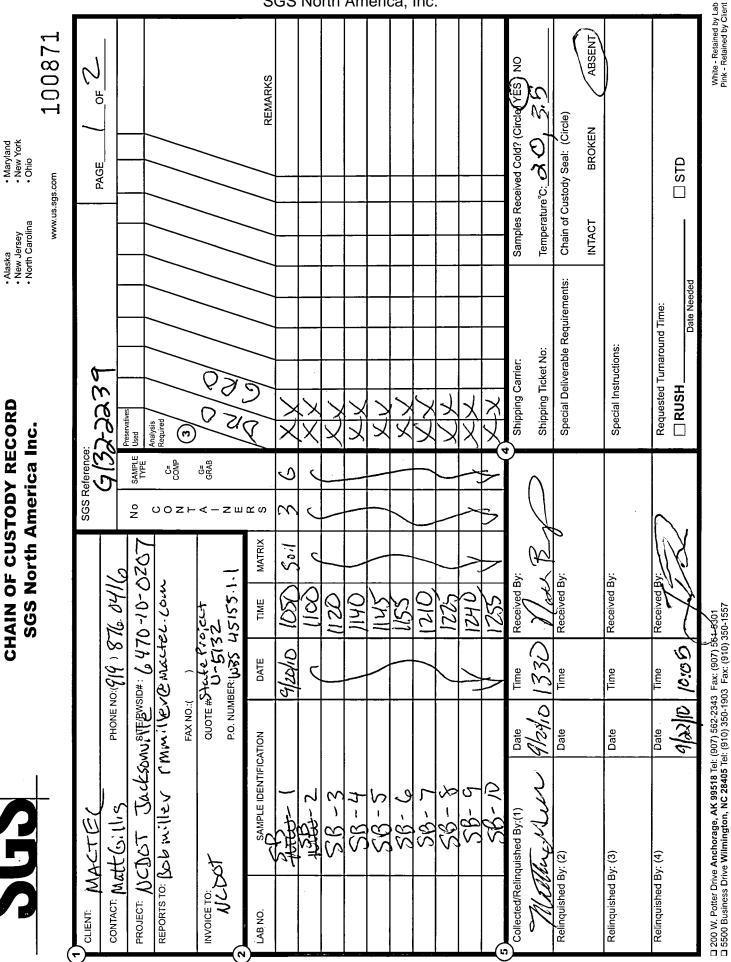
Comments:

Batch Information

Analytical Batch: VP092410	Prep Method: 5035
Analytical Method: 8015	Initial Wt/Vol: 7.08 g
Instrument ID: GC4	Final Volume: 5 mL
Analyst: LMC	

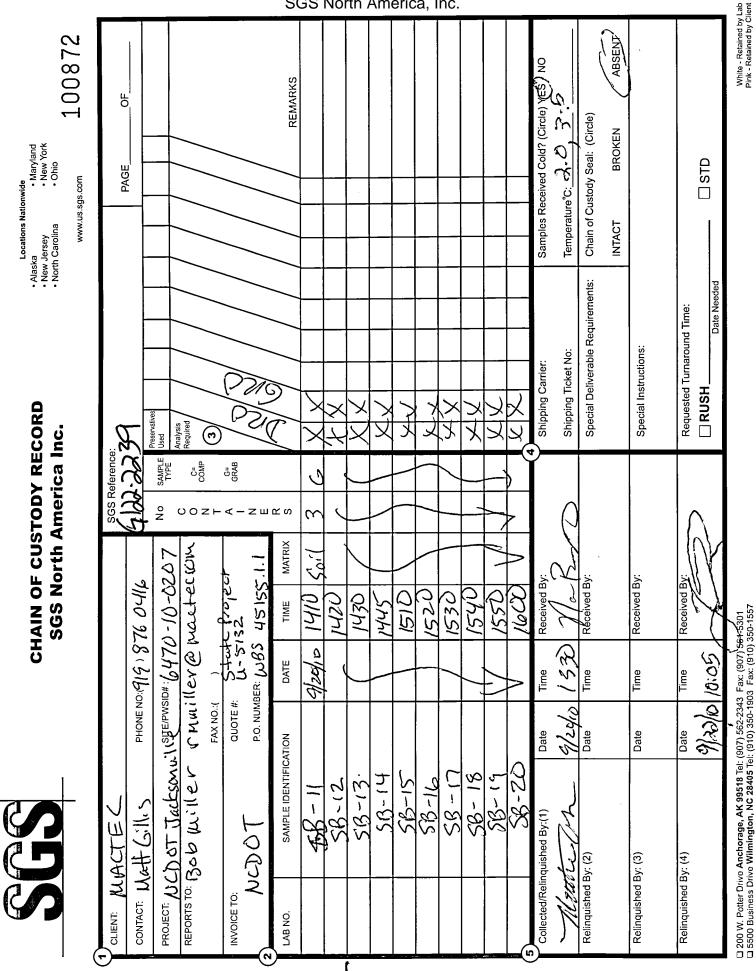
Analyst: MMC

Reviewed By: GRO.XLS



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Locations Nationwide



APPENDIX B

PHOTO LOG





Photograph No. 3	Remarks
	 View of western side of the Site. View is to the north.
11/17/2011	

Photograph No. 4	Remarks
	• View of the rear of the service station. View is to the south.
11/17/2011	

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





APPENDIX C

BORING LOGS

	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina			Soil Boring Sample Record		
AMEC Project	t ID: Former Crumbley Property, Parcel #905	AMEC Field Representative				
AMEC Project	ct #: 6470-11-0529		Gillis			
Date: 11-16-1	1					
Boring ID: SE	3-15					
Depth Soil Description	T i	Headspace Screening Results (in ppm)	0			
	Son Description	Time	PID	Comments		
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		

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina			Soil Boring Sample Record		
AMEC Proje	ct ID: Former Crumbley Property, Parcel #905	AMEC Field Representative				
AMEC Proje	ct #: 6470-11-0529		Gillis			
Date: 11-16-	11					
Boring ID: S	B-16					
Depth	Denth	Time	Headspace Screening Results (in ppm)	Comments		
Interval	Soil Description	11116	PID	Commenta		
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		

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina			Soil Boring Sample Record		
AMEC Proje	ct ID: Former Crumbley Property, Parcel #905		AMEC Field Representative			
AMEC Proje	ct #: 6470-11-0529		Gil	lis		
Date: 11-16-	11					
Boring ID: S	B-17					
Depth		Headspace Screening Results (in ppm)	Comments			
Interval	Soil Description	Time	PID	Comments		
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		

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		Boring Sample Record
AMEC Proje	AMEC Project ID: Former Crumbley Property, Parcel #905		AMEC Field Rep	<u>presentative</u>
AMEC Proje	ct #: 6470-11-0529		Gillis	6
Date: 11-16-	11			
Boring ID: S	B-18			
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
Interval	Interval Soil Description Time	PID	Comments	
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 E&I, Inc. 4021 Stirrup Creek Drive, Suite Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		Soil Boring Sample Record	
AMEC Project ID: Former Crumbley Property, Parcel #905		AMEC Field Rep	resentative	
ct #: 6470-11-0529		Gillis		
11				
B-19				
Soil Description	Timo	Headspace Screening Results (in ppm)	Comments	
	Time	PID	Comments	
Top 3" asphalt, Brown silty fine to medium sand		0.0		
Brown silty fine to medium sand		0.0		
Orange to gray clayey fine to medium sand		0.0		
Orange to gray clayey fine to medium sand	1110	0.0	Sample at 8' bgs	
	4021 Stirrup Creek Drive, Suite Durham, North Carolina ct ID: Former Crumbley Property, Parcel #905 ct #: 6470-11-0529 11 B-19 Soil Description Top 3" asphalt, Brown silty fine to medium sand Brown silty fine to medium sand Orange to gray clayey fine to medium sand	4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina ct ID: Former Crumbley Property, Parcel #905 ct #: 6470-11-0529 11 B-19 Soil Description Time Top 3" asphalt, Brown silty fine to medium sand Brown silty fine to medium sand Orange to gray clayey fine to medium sand	4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina Soil Ct ID: Former Crumbley Property, Parcel #905 ct #: 6470-11-0529 AMEC Field Rep Gillis 11 B-19 B-19 Headspace Screening Results (in ppm) Soil Description Fime Top 3" asphalt, Brown silty fine to medium sand 0.0 Brown silty fine to medium sand 0.0 Orange to gray clayey fine to medium sand 0.0	

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		Soil Boring Sample Record		
AMEC Proje	ct ID: Former Crumbley Property, Parcel #905		AME	C Field Represe	<u>entative</u>	
AMEC Proje	ct #: 6470-11-0529			Gillis		
Date: 11-16-	11					
Boring ID: S	B-20					
Depth	Denth		Headspace S Results (in	-	Comments	
Interval	Soil Description	Time	PID)	Comments	
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	

ат	ec [©]	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 F	<u>Representative</u>
AMEC Project #: 6470-11-0529			G	illis	
Date: 11-16-					
Boring ID: S	B-21				
Depth Interval		Soil Description	Time	Headspace Screening Results (in ppm)	Comments
intervar			PID		
0-2	Top 3" asphalt, Ora	nge to gray clayey fine to medium sand		0.0	
2-4	Orange to g	ray clayey fine to medium sand		0.0	
4-5	Orange to g	ray clayey fine to medium sand		0.0	
5-6	Tan s	silty fine to medium sand		0.0	
6-8	Tans	silty fine to medium sand	1135	0.0	Sample at 8' bgs

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina AMEC Project ID: Former Crumbley Property, Parcel #905 AMEC Project #: 6470-11-0529			Soil Bo	Soil Boring Sample Record	
				AMEC Field Rep	<u>presentative</u>	
				Gillis	6	
Date: 11-16-						
Boring ID: S	B-22					
Depth Interval		Soil Description	Time	Headspace Screening Results (in ppm)	Comments	
			PID			
0-2	Top 3" asphalt, Orai	nge to gray clayey fine to medium sand		0.0		
2-4		ray clayey fine to medium sand		0.0		
4-6	Orange to g	ray clayey fine to medium sand		0.0		
6-8	Orange to g	ray clayey fine to medium sand	1145	0.0	Sample at 8' bgs	

AMEC E&I, Inc. 4021 Stirrup Creek Drive, Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		Soil Boring Sample Record		
t ID: Former Crumbley Property, Parcel #905		AMEC Field Repr	esentative		
ct #: 6470-11-0529		Gillis			
1					
3-23					
Soil Description	Timo	Headspace Screening Results (in ppm)	Comments		
Son Description	Time	PID	Comments		
Tan clayey fine to medium sand		0.0			
Tan clayey fine to medium sand		0.0			
Gray clayey fine to medium sand		0.0			
Tan fine to medium sand	1155	0.0	Sample at 8' bgs		
	4021 Stirrup Creek Drive, Durham, North Carolina t ID: Former Crumbley Property, Parcel #905 t #: 6470-11-0529 1 3-23 Soil Description Tan clayey fine to medium sand Tan clayey fine to medium sand Gray clayey fine to medium sand	4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina t ID: Former Crumbley Property, Parcel #905 t #: 6470-11-0529 1 3-23 Soil Description Tan clayey fine to medium sand Tan clayey fine to medium sand Gray clayey fine to medium sand	4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina Soil E t ID: Former Crumbley Property, Parcel #905 AMEC Field Representation t #: 6470-11-0529 Gillis 1		

ame	AMEC E&I, Inc. 4021 Stirrup Creek Drive, S Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		Soil Boring Sample Record		
AMEC Project I	D: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative		
AMEC Project #	#: 6470-11-0529		Gillis			
Date: 11-16-11						
Boring ID: SB-2	24					
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments		
Interval	Soil Description	Time	PID	Comments		
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		

ame	AMEC E&I, Inc. 4021 Stirrup Creek Drive, S Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		oring Sample Record
AMEC Projec	t ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative
AMEC Projec	t #: 6470-11-0529		Gillis	
Date: 11-16-1	1			
Boring ID: SE	3-25			
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
Interval	Soil Description	Time	PID	Comments
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

ame	AMEC E&I, Inc. 4021 Stirrup Creek Drive, S Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		oring Sample Record
AMEC Projec	t ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative
AMEC Projec	t #: 6470-11-0529		Gillis	
Date: 11-16-1	1			
Boring ID: SE	3-26			
Depth Soil Description	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
	Son Description	Time	PID	Comments
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

ame	AMEC E&I, Inc. 4021 Stirrup Creek Drive, S Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		Soil Boring Sample Record		
AMEC Project	ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative		
AMEC Project	#: 6470-11-0529		Gillis			
Date: 11-16-11						
Boring ID: SB-	-27					
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments		
Interval	Son Description	Time	PID	Comments		
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			

ame	AMEC E&I, Inc. 4021 Stirrup Creek Drive, S Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		oring Sample Record
AMEC Project	t ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative
AMEC Project	t #: 6470-11-0529		Gillis	
Date: 11-16-1	1			
Boring ID: SB	3-28			
Depth Soil Description	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
	Son Description	Time	PID	Comments
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

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Su Durham, North Carolina	4021 Stirrup Creek Drive, Suite 100		oring Sample Record
AMEC Project	t ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative
	et #: 6470-11-0529		Gillis	
Date: 11-16-1	1			
Boring ID: SE	3-29			
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
Interval	Son Description	Time	PID	Comments
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

ame	AMEC E&I, Inc. 4021 Stirrup Creek Drive, S Durham, North Carolina	Soil B	Soil Boring Sample Record		
AMEC Project	ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	esentative	
AMEC Project	#: 6470-11-0529		Gillis		
Date: 11-16-11					
Boring ID: SB-	30				
Depth	Denth		Headspace Screening Results (in ppm)	Comments	
Interval	Soil Description	Time	PID	Comments	
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	

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suit Durham, North Carolina	te 100 Soil Boring Sample Recor			
AMEC Proje	ct ID: Former Crumbley Property, Parcel #905		AMEC Field Repre	<u>sentative</u>	
AMEC Proje	ct #: 6470-11-0529		Gillis		
Date: 11-16-	11				
Boring ID: S	B-31				
Depth	Denth		Headspace Screening Results (in ppm)	Comments	
Interval	Interval Soil Description Time	IIIIe	PID	Comments	
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		

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suit Durham, North Carolina	e 100	Soil Boring Sample Record			
AMEC Proje	ct ID: Former Crumbley Property, Parcel #905		AMEC Field Re	presentative_		
AMEC Proje	ct #: 6470-11-0529		Gilli	S		
Date: 11-16-	11					
Boring ID: S	B-33					
Depth	Denth		Headspace Screening Results (in ppm)	Comments		
Interval	Soil Description	Time	PID	Comments		
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		

am	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suit Durham, North Carolina	e 100	Soil Boring Sample Record			
AMEC Proje	ct ID: Former Crumbley Property, Parcel #905		AMEC Field Re	<u>presentative</u>		
AMEC Proje	ct #: 6470-11-0529		Gilli	S		
Date: 11-17-	11					
Boring ID: S	B-34					
Depth	anth		Headspace Screening Results (in ppm)	Comments		
Interval	erval Soil Description Tim	Time	PID	Comments		
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		

ec [©]	AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite Durham, North Carolina	100	s	oil Boring Sample Record
ct ID: Former Crum	bley Property, Parcel #905		AMEC Field F	<u>Representative</u>
ct #: 6470-11-0529			G	illis
B-35				
Depth Soil Description		Time	Headspace Screening Results (in ppm)	Comments
			PID	
Top 3" asphalt,	Brown silty fine to medium sand		27.3	
		0930	5.2	Sample SB-35A at 2' bgs
Tan to gray	clayey fine to medium sand		477	
			802	
Tan to gray	clayey fine to medium sand	0935	1792	Sample SB-35B at 8' bgs
Brown fin	e to medium sand (moist)		1841	
				Petroleum odor throughout boring
	t ID: Former Crum t #: 6470-11-0529 11 B-35 Top 3" asphalt, Tan clay Tan to gray Tan to gray Tan to gray	4021 Stirrup Creek Drive, Suite Durham, North Carolina ct ID: Former Crumbley Property, Parcel #905 ct #: 6470-11-0529	4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina ct ID: Former Crumbley Property, Parcel #905 ct #: 6470-11-0529 11 B-35 Soil Description Time Top 3" asphalt, Brown silty fine to medium sand Tan clayey fine to medium sand Tan to gray clayey fine to medium sand Tan to gray clayey fine to medium sand Tan to gray clayey fine to medium sand	4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina S ct ID: Former Crumbley Property, Parcel #905 AMEC Field Fiel

AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina			Soil Boring Sample Record				
		ley Property, Parcel #905		<u>AMEC Fie</u>	eld Representative		
	ect #: 6470-11-0529				Gillis		
Date: 11-17-							
Boring ID: S	B-36			Γ	1		
Depth Interval	Soli Description		Time	Headspace Screening Results (in ppm)	Comments		
				PID			
0-2	Top 3" asphalt, Orar	ge to brown clayey fine to medium sand		97.0			
2-4	Orange to bi	own clayey fine to medium sand	0945	22.2	Sample SB-36A at 2' bgs		
4-6	Orange to g	ray clayey fine to medium sand		344			
6-8	Orange to g	ray clayey fine to medium sand		272	Sample SB-36B at 8' bgs		
8-10	Orange to g	ray 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				
	ct ID: Former Crumbley Property, Parcel #905			<u>Representative</u>			
	ct #: 6470-11-0529		(Gillis			
Date: 11-17-							
Boring ID: S	B-37						
Depth Interval	- Soli Description		Headspace Screening Results (in ppm)	Comments			
			PID				
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 E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina				Soil Boring Sample Recor				
	ID: Former Crumbley Pr	operty, Parcel #905		AMEC Field	d Representative			
	: #: 6470-11-0529				Gillis			
Date: 11-17-1								
Boring ID: SB	-38			,				
Depth Interval	- Soli Description		Time	Headspace Screening Results (in ppm)	Comments			
				PID				
0-2	0-2 Top 3" asphalt, Brown clayey fine to medium sand			0.0				
2-4	Tan to gray clay	ey fine to medium sand		0.0				
4-6	Tan to gray clay	ey fine to medium sand	1040	0.0	Sample SB-38A at 5' bgs			
6-8	Tan to gray clay	ey fine to medium sand		33.3				
8-10	Tan to gray clay	ey fine to medium sand	1050	344	Sample SB-38B at 8' bgs			
10-12	Tan fine to m	edium sand (moist)		1908				

AMEC E&I, Inc. 4021 Stirrup Creek Drive, Suite 100 Durham, North Carolina AMEC Project ID: Former Crumbley Property, Parcel #905				Soil Boring Sample Record				
		biey Property, Parcel #905		AMEC FIEL	d Representative			
	t #: 6470-11-0529				Gillis			
Date: 11-17-1								
Depth Interval	- Soli Description		Time	Headspace Screening Results (in ppm)	Comments			
				PID				
0-2	Top 3" concre	te, Tan clayey fine to medium sand		0.0				
2-4		layey fine to medium sand	1115	0.0	Sample SB-39A at 2' bgs			
4-6	Orange to g	gray clayey fine to medium sand		73.3				
6-8	Orange to g	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.

Results of Geophysical Investigation Parcel 905, Jacksonville, North Carolina December 15, 2011 Page 3



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.

EΜ

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.

<u>GPR</u>

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.

Results of Geophysical Investigation Parcel 905, Jacksonville, North Carolina December 15, 2011 Page 5



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,

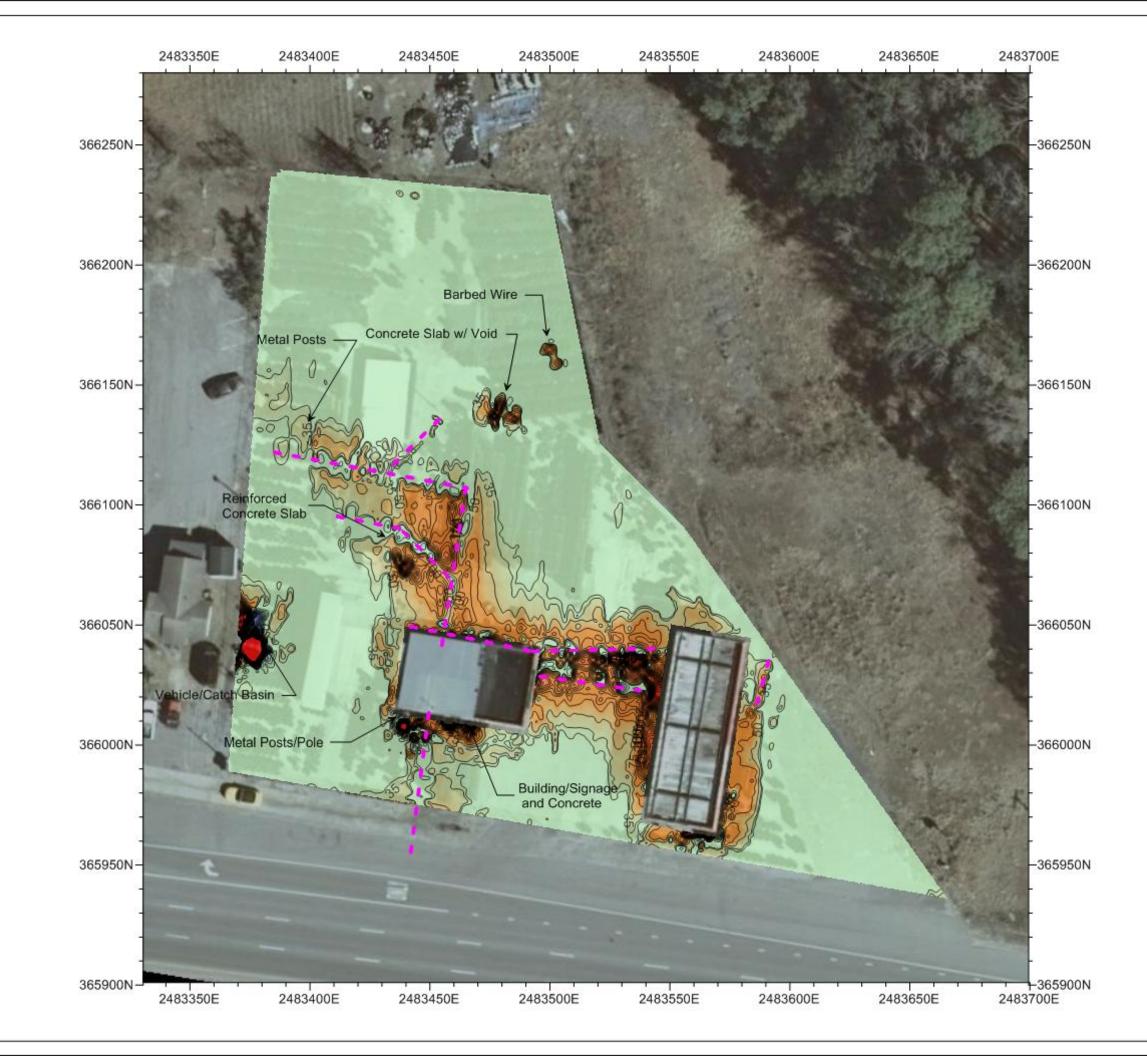
Anthony Kellogg Geologist Helen P. Corley, L.G. NCDOT Project Manager

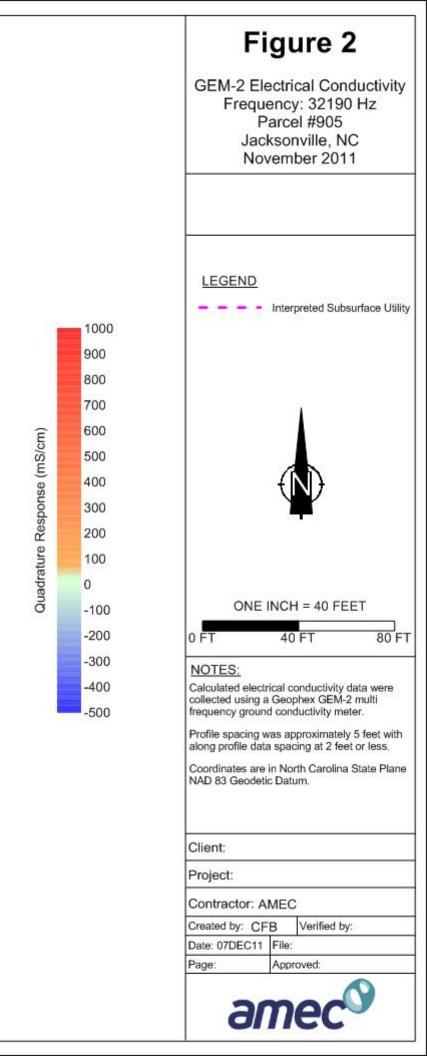
Attachments

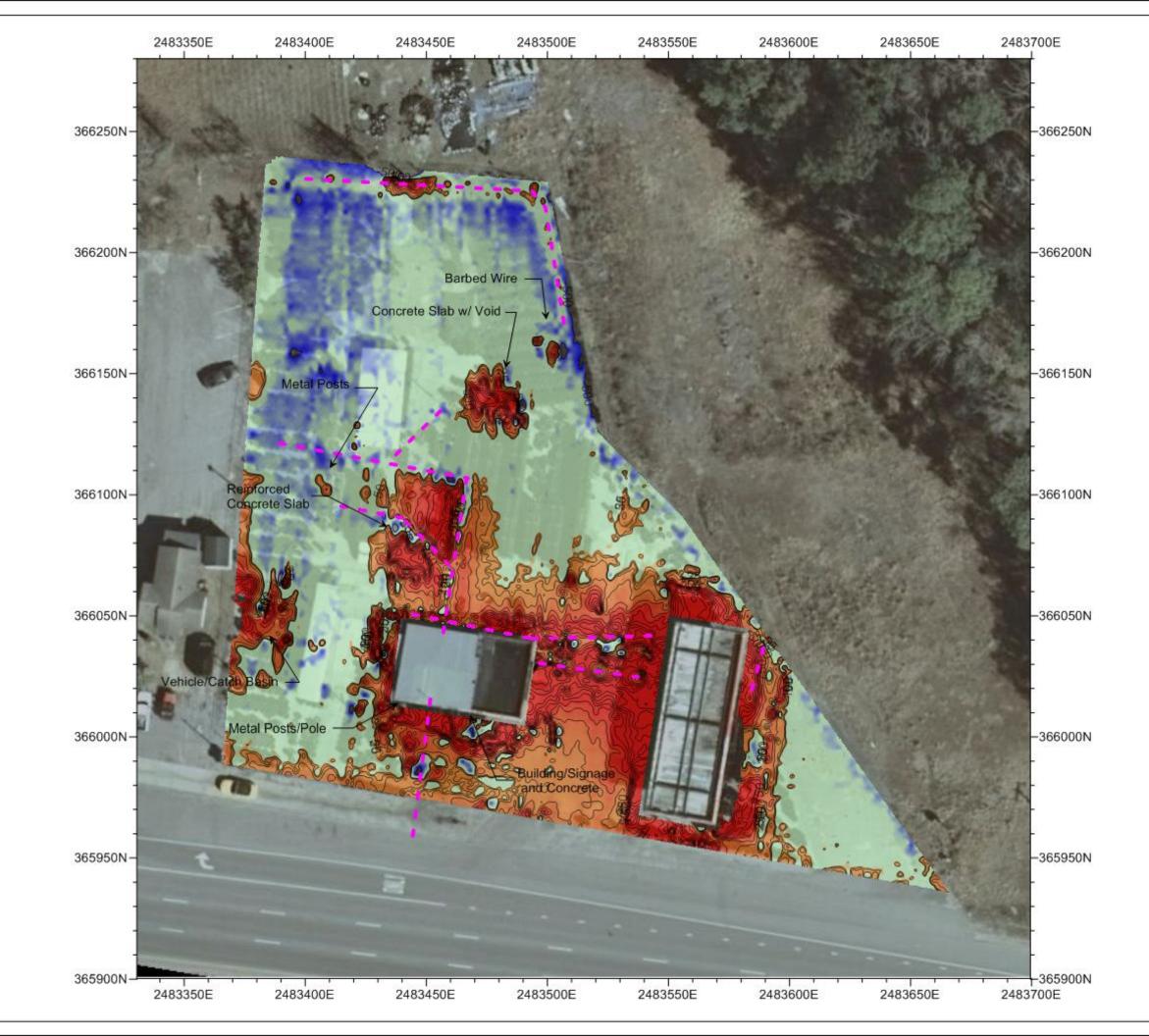
Figure 1 – Geophysical Survey Area of Investigation Figure 2 – GEM II Calculated Electrical Conductivity Contour Map Figure 3 – GEM II In-phase Response Contour Map

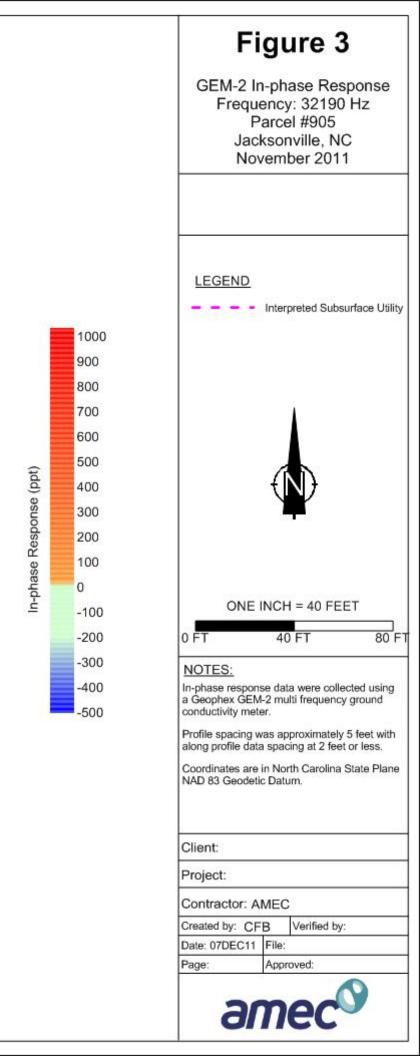


AMEC Earth & Environmental 2200 Gateway Centre Blvd., Suite 205 Morrisville, NC 27560 (919) 447-2750	CLIENT: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	SITE LOCATION: PARCEL #905, FORMER CRUMBLEY PROPERTY NC 24 Trumpet Interchange between SR 1308 and US 17 Bypass Jacksonville, North Carolina			
amec	TITLE: SITE MAP	SCALE: 1" = 80' DRAWN BY: A. Kellogg	U-5132 & WBS # 451155 DATE: December 12, 2011 CHECKED BY: H. Corley	5.1.1 PROJECT: 566775132	
		N/A			









APPENDIX E

MONTORING WELL SAMPLING WORKSHEET

							AMEC E&I, Inc		
						4021 Stir	rup Creek Drive,	Suite 100	
	200	DA					n, North Carolina		
	O II	ec		ŀ	м				HEET
MONITORING WELL ID: MW-1						PROJECT N			-11-0529
PROJECT:	NCDOT Former Ci	umblev Property		SITE:	,	Chico Tires		DATE:	11/17/201
WELL DEPTH:	14.5			D INTERVAL:	5-15	FT.	WELL DIA		2 inch
	GHT OF MEASURING				0		MATERIAL:		PVC
	NG DEVICE:		Itic Pump / YS			G TYPE:		Poly	
	RING POINT:		op of Casing			TO GROUN	DWATER:	-	11.00
	AMPLING PERSONNE		Gillis						
S	TEEL GUARD PIPE A	ROUND CASING:			YES	×	NO		
	LOCKING	CAP:		×	YES		NO		
	PROTECTIVE POST	ABUTMENT:			YES		NO		
	NONPOTABLE	LABEL:		<u>x</u>	YES		NO		
	ID PLAT	E:		×	YES		NO		
	WELL INTEGRITY SA	ATISFACTORY:		X	YES		NO		
	WELL YIE				HIGH	×	MODERATE		LOW
COM	IMENTS	Concrete	pad is broken	. Rim and skirt	are in good	shape. Total ı	measured depth	was 14.5	ft. btoc.
									<u>_</u>
TIME	PUMP RATE	PH	TEMP	SP. COND.	D.O.	0.R.P.	TURBIDITY		
(MILITARY)	(mL/min)	(S.U.)	(°C)	(mS/cm)	(mg/L)	(mV)	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 1203	150 150	8.51 8.35	19.99 20.37	0.303	0.77	-133.6 -143.6	1		
1203	150	8.27	20.57	0.303	0.75	-145.5	1		
1200	150	8.27	20.58	0.302	0.70	-145.7	1		
1203	150	8.26	20.57	0.302	0.77	-145.9	1		
1212	150	8.26	20.58	0.302	0.77	-146.0	1	Sample	
1210	100	0.20	20.00	0.002	0.11	110.0		Gampie	
			1	1			1		
			1	1			1 1		
			1	1			1 1		
			1	1			1		
				1		1	1		
				1		1	1		
L	1		•	NOTES			· ·		
				Construction Ca					
				illing, Four Oaks					
				Installation 3-30-	2004				
				Screen 5'-15'					
			Reg	istration No. 286	5				

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

Prepared by:	Date:
Checked by:	Date:

(1)

APPENDIX F

LABORATORY ANALYTICAL RESULTS



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.

Mild Re

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

		1
Michael D. Page Project Manager	Date	
michael.page@sgs.com		
rint Date: 12/01/2011	n an ann an an an Alain an Anna Anna an ann an ann an Anna ann an Anna an Anna an Anna an an an an an an an ann	N.C. Certification #481
SGS North America Inc.	5500 Business Drive, Wilmington, NC 28405 t 910.350.1903 f 910.350.1557 www.us.sgs.com	
	<u> </u>	Member of SGS Group



Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Es	timated Detection Limit per Analytical Method			
CL	Control Limits for the reco				
LOQ	Reporting Limit				
DF	Dilution Factor				
RPD	Relative Percent Difference	e			
LCS(D)) Laboratory Control Spike	(Duplicate)			
MS(D)	Matrix Spike (Duplicate)				
MB	Method Blank				
Qualifi	ier Definitions				
*	Recovery or RPD outside	of control limits			
В	•	e Lab Method Blank at a level above the LOQ			
U	Undetected (Reported as ND or < DL)				
v		control limit. The data has been validated based on a favorable signal-to-nois	9		
	and detection limit		~		
A		an the Lower Method Calibration Limit			
J		en the Method Detection Limit and the Lower Calibration Limit			
0	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in				
	the sample may be biased				
E		r than the Upper Calibration Limit			
S		sent has saturated the detector. This situation results in an			
	underestimation of the affe				
Q		a quantitative interference. This situation may result in an			
	underestimation of the affe				
1		a qualitative interference that could cause a false positive or an			
	overestimation of the affect				
DPE		a peak in the polychlorinated diphenylether channel that could			
		n overestimation of the affected analyte(s)			
TIC	Tentatively Identified Com				
EMPC	Estimated Maximum possi	ble Concentration due to ion ratio failure			
ND	Not Detected				
к	Result is estimated due to	ion ratio failure in High Resolution PCB Analysis			
Р	RPD > 40% between resul				
D	Spike or surrogate was dil range	ited out in order to achieve a parameter result within instrument calibration			
Sample: definitio	s requiring manual integration in is provided below:	ns for various congeners and/or standards are marked and dated by the analy	st. A code		
M1	Mis-identified peak				
M2	Software did not integrate	beak			
МЗ		tion (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 r				
Note	Results pages that inclu	de a value for "Solids (%)" have been adjusted for moisture content.			
rint Date:	12/01/2011	na na mananananan arawa ku sula na mananan ku sula na sa sa sula na su ku suka mananan sa sa su su na su su su	N.C. Certification # 481		
	CCC North America Inc.	5500 Business Drive, Wilmington, NC 28405			
	SGS North America Inc.	t 910.350.1903 f 910.350.1557, www.us.sgs.com			
			Mombar of SCE Crown		

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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 weigh
SB-24	31103290010	11/16/2011 13:10	11/18/2011 15:00	Soil-Solid as dry weigh
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	Soll-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

Print Date: 12/01/2011

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SGS North America Inc.

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Member of SGS Group

SGS						
Results of SB-15 Client Sample ID: SB-15 Client Project ID: NCDOT Forn Lab Sample ID: 31103290001- Lab Project ID: 31103290	ner Crumbl		Collection Da Received Da Matrix: Soil- Solids (%):	ite: 11/18/ Solid as dr	2011 15:0	
Results by SW-846 8015C GRC)		<u></u>	ta ta angla sa		110723111165511655211655 555555555555555555555
Parameter Gasoline Range Organics (GRO)	<u>Result</u>	Qual	<u>LOQ/CL</u> 3.69	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/21/2011 15:59
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	1	11/21/2011 15:59
Batch Information	and and the state of the state		Reader (Marille Marine and Construction on the Construction of the Construction of Construction of Construction	al an fair an that an		annan an a
Analytical Batch: VGC1527 Analytical Mathod: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/21/201			Prep Batch: VXX2: Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 5035 1/19/2011 1 : 6.995 g	2:53	
Print Date: 12/01/2011		بروره بو وردر در در در در در در در در در	n an	Ampuny (Law 1941		N.C. Certification # 481
SGS North America Inc.		ness Drive, Wilmington				

SGS							
Results of SB-15			марулагран қаран қазымалар ар алған қазаған қазаған қазаған қазаған қазаған қазаған қазаған қазаған қазаған қа	Kôntrina wangaray			
Client Sample ID: SB-15 Client Project ID: NCDOT Forn Lab Sample ID: 31103290001- Lab Project ID: 31103290	ner Crumbly		Collection D Received Da Matrix: Soil- Solids (%):	ite: 11/18/ Solid as di	2011 15:0		
Results by SW-846 8015C DRO	//////////////////////////////////////			царани (Marine and Constant)			
Parameter Diesel Range Organics (DRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 7.92	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyz</u> 11/22/2011	-
Surrogates o-Terphenyl	61.0		40.0-140	%	1		
y	01.0		40.0-140	70	1	11/22/2011	7:46
Batch Information Analytical Batch: XGC1733 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2011		n en anem et agricultur oc	Prep Batch: XXX20 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/20/2011 (: 32.63 g	99:11	Addan organiza, izo yo oo ooga	27.9 <u>9</u>
rint Date: 12/01/2011	a sa na manga	an a	nanta kata da ana kata manangan sa sa sa sa			N.C. Certificat	on # 481
SGS North America Inc.	5500 Busine	ess Drive, Wilmington, N 903 f 910,350,1557 www	C 28405				

Results of SB-16 Client Sample ID: SB-16 Client Project ID: NCDOT Form Lab Sample ID: 31103290002-A Lab Project ID: 31103290	er Crumbl	y Property	Collection D Received Da Matrix: Soil Solids (%):	ate: 11/18/. Solid as dr		а
Results by SW-846 8015C GRO			okanda bara Jerengan Saka ang pangan ka		#275-81-0=074-74-8-54-8-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-	
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3.52	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/21/2011 16:25
Surrogates						
4-Bromofluorobenzene	95.5		70.0-130	%	1	11/21/2011 16:25
Analytical Batch: VGC1527 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/21/2011			Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 5035 1/19/2011 1 .: 7.011 g	2:54	
× ×						
int Date: 12/01/2011	in the second	ма на на насти со състи насти на състи	Al 2			N.C. Certification #
	[CCAA B	ness Drive, Wilmington, N	C 19405			

Results of 58-16 Collection Date: 11/16/2011 10/25 Client Sample ID: S8146 Collection Date: 11/16/2011 10/25 Lab Sample ID: 311032900 Solids (%): 80.00 Matrix: Solids (%): 80.00 Results by \$W-846 8015C DRO Estand Qual LOQ/CL Units DE Date Analyzod Decel Range Organics (DRO) 12.1 7.68 mg/kg 1 11/22/2011 8:15 Surrogates -Tephonyl 56.8 40.0-140 1 11/22/2011 8:15 Partypical Match: XGC123 Analytical Match: YM-948 8015C DRO Prop Batch: XG2202 Prop Match:: YM-948 8015C DRO Prop Date/Time: 11/22/2011 8:15 Partypical Match: XGC123 Prop Date/Time: Prop Date/Time: 11/22/2011 8:15 Analytical Match: XGC123 Prop Date/Time: 11/22/2011 8:15 Prop Date/Time: 11/22/2011 8:15 Match: XGC Matches Date: XGC Matches Date: YG Matches Date: YG Ma	SGS							
Personaliser Result Quel LOQ/CL Units DE Date Analyzed Diseal Range Organics (DRO) 12.1 7.68 mg/kg 1 11/22/2011 8:15 Surrogates - Terphonyi 58.8 40.0-140 % 1 11/22/2011 8:15 Personalise - Terphonyi 58.8 40.0-140 % 1 11/22/2011 8:15 Personalise - Terphonyi 58.8 40.0-140 % 1 11/22/2011 8:15 Personalise Statch Information - Terphonyi Free Method: SW-484 5541 Personalise	Client Sample ID: SB-16 Client Project ID: NCDOT Forn Lab Sample ID: 31103290002-	ner Crumbly		Received Da Matrix: Soil-	ate: 11/18/ Solid as dr	2011 15:0		
Personaliser Result Quel LOQ/CL Units DE Date Analyzed Diseal Range Organics (DRO) 12.1 7.68 mg/kg 1 11/22/2011 8:15 Surrogates - Terphonyi 58.8 40.0-140 % 1 11/22/2011 8:15 Personalise - Terphonyi 58.8 40.0-140 % 1 11/22/2011 8:15 Personalise - Terphonyi 58.8 40.0-140 % 1 11/22/2011 8:15 Personalise Statch Information - Terphonyi Free Method: SW-484 5541 Personalise	Results by SW-846 8015C DRO							
Diesel Range Organes (DRO) 12.1 7.66 mgkg 1 112222011 6.15 Surregits Terphanyl 58.8 40.0-140 % 1 112222011 6.15 Batch Information	 Protocological and the contract of the protocology of the contract of the contrac	22223235.200 A - CO	Qual	1.00/01	Units	DF	Date Analyzed	
0-Terphenyl 58.8 40.0-140 % 1 11/22/2011 8:15 Batch Information Analytical Batch: XG01733 Prep Batch: XX2002 Prep Method: SW-346 3541 Analytical Batch: CC6 Prep Method: SW-346 3541 Prep Datch: XX2002 Prep Method: SW-346 3541 Analytical Date/Time: 11/22/2011 08:15 Prep Method: SW-346 3541 Prep Method: SW-346 3541 Prep Method: SW-346 2015C DRO Prep Method: SW-346 3541 Prep Method: SW-346 3541 Analytical Date/Time: 11/22/2011 08:15 Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL			<u></u>					
Patch Information Prop Batch: XX2002 Analytical Batch: XGC1733 Prop Method: XV-346 3941 Instrument: GC6 Prop DetCh:: XX22002 Analytical Date/Time: 11/22/2011 08:15 Prop DetCh:: XX22002 Analytical Date/Time: 11/22/2011 08:15 Prop DetCh:: XX22002 Prop Datch:: XX22002 Prop DetCh:: XX22002 Analytical Date/Time: 11/22/2011 08:15 Prop DetCh:: XX22002 Prop Datch:: XX22002 Prop DetCh:: XX22002 Analytical Date/Time: 11/22/2011 08:15 Prop DetCh:: XX22002 Prop Datch:: XX22002 Prop DetCh:: XX22002 Analytical Date/Time: 11/22/2011 08:15 Prop DetCh:: XX22002 Prop Datch:: XX22002 Prop Datch:: XX22002 Prop Datch:: XX22002 Prop Datch:: XX2202 Analytical Date/Time: 11/22/2011 08:15 Prop Datch:: XX2202 Prop Datch:: XX22002 Prop Datch:: XX22002 Prop Datch:: XX2202 Prop Datch:: XX2202 Prop Datch:: XX2202	Surrogates							
Analytical Batch: KGC1733 Prep Batch: XXX2002 Analytical Method: SW-846 8915C DRO Prep Method: SW-846 3541 Instument: GC6 Prep Dete/Time: 11/12/2011 06:11 Analytical Date/Time: 11/12/2011 06:15 Prep Dete/Time: 11/12/2011 06:11 Prep Data/Time: 11/12/2011 06:15 Prep Extract Vol 10 mL Prep Extract Vol 10 mL Prep Extract Vol 10 mL Prep Date/Time: 11/12/2011 06:15 Prep Extract Vol 10 mL Prep Extract Vol 10 mL Prep Extract Vol 10 mL S05 North America In:: 1500 Basices Drive, Winningten, MC 28405 S05 North America In:: 1500 Basices Drive, Winningten, MC 28405		58.8		40.0-140	%	1	11/22/2011 8:15	
Analytical Batch: KGC1733 Prep Batch: XXX2002 Analytical Method: SW-846 8915C DRO Prep Method: SW-846 3541 Instument: GC6 Prep Dete/Time: 11/12/2011 06:11 Analytical Date/Time: 11/12/2011 06:15 Prep Dete/Time: 11/12/2011 06:11 Prep Data/Time: 11/12/2011 06:15 Prep Extract Vol 10 mL Prep Extract Vol 10 mL Prep Extract Vol 10 mL Prep Date/Time: 11/12/2011 06:15 Prep Extract Vol 10 mL Prep Extract Vol 10 mL Prep Extract Vol 10 mL S05 North America In:: 1500 Basices Drive, Winningten, MC 28405 S05 North America In:: 1500 Basices Drive, Winningten, MC 28405	Batch Information	- President to and the sub-sub-sub-sub-sub-sub-sub-sub-sub-sub-	warden in die die die eerste gest	un en municipalitation de la companya en en en en			15 177 c contracting spectrage regions and contraction of	
SGS North America Inc. 5500 Business Drive, Wilmington, NC 28405 t 910.350.1903 f 910.350.1557 www.us.sgs.com	Analytical Batch: XGC1733 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF			Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol.	846 3541 1/20/2011 0 .: 32.28 g	9:11		•
SGS North America Inc. 5500 Business Drive, Wilmington, NC 28405 t 910.350.1903 f 910.350.1557 www.us.sgs.com								
SGS North America Inc. 5500 Business Drive, Wilmington, NC 28405 t 910.350.1903 f 910.350.1557 www.us.sgs.com	Print Date: 12/01/2011	under et alle englister al		··· ····		en sur un art may ma	N.C. Certification #48	
Member of SGS Group								

SGS Results of SB-17		MII 1949 - 1879 24 00 4 4 10 0 10 10 10 10 10 10 10 10 10 10 10 1	19 Novice/ anno 54 anno 14 anno	that a magnetic star of a star party	an management of the second
Client Sample ID: SB-17 Client Project ID: NCDOT Forme Lab Sample ID: 31103290003-A Lab Project ID: 31103290	er Crumbly Property	Collection D Received Da Matrix: Soil- Solids (%):	ate: 11/18/ Solid as dr	2011 15:0	
Results by SW-846 8015C GRO				aganan data dari sa cana dan nasar sa kanan di	an a
	<u>Result Qual</u>	LOQ/CL	<u>Units</u>	DF	Date Analyzed
5 C ()	ND	3.74	mg/kg	1	11/21/2011 16:51
urrogates 4-Bromofluorobenzene	400	70.0.400	A /		
	102	70.0-130	%	1	11/21/2011 16:51
Batch Information Analytical Batch: VGC1527 Analytical Method: SW-846 8015C Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/21/2011		Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 5035 1/19/2011 1 .: 6.862 g	2:56	n 17 - El norte de Station de Francisco de Lorence de Station de Lorence de Station de Lorence de Station de Lo
int Date: 12/01/2011	e en antigen en alterna en antigen	na lokala an more approved to contra a	5		N.C. Certification # 4

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Results of SB-17 Client Sample ID: SB-17 Client Project ID: NCDOT Former Crun Lab Sample ID: 3110329003-C Lab Project ID: 31103290 Results by SW-846 8015C DRO Parameter Result Diesel Range Organics (DRO) ND Surrogates 0-Terphenyl 74.5 Batch Information Analytical Batch: XGC1733 Analytical Batch: SW-846 8015C DRO Instrument: GC6 Analytical Date/Time: 11/22/2011 08:43	nbly Property	. Collection D Received Da Matrix: Soil-			
Parameter Result Diesel Range Organics (DRO) ND Surrogates o-Terphenyl o-Terphenyl 74.5 Batch Information Analytical Batch: XGC1733 Analytical Method: SW-846 8015C DRO Instrument: GC6 Analyst: DTF		Solids (%):	ite: 11/18/ Solid as dr	2011 15:0	
Parameter Result Diesel Range Organics (DRO) ND Surrogates -Terphenyl o-Terphenyl 74.5 Batch Information			Marker of Statistics		
o-Terphenyl 74.5 Batch Information Analytical Batch: XGC1733 Analytical Method: SW-846 8015C DRO Instrument: GC6 Analyst: DTF		<u>LOQ/CL</u> 8.05	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 8:43
Batch Information Analytical Batch: XGC1733 Analytical Method: SW-846 8015C DRO Instrument: GC6 Analyst: DTF			00		
Analytical Batch: XGC1733 Analytical Method: SW-846 8015C DRO Instrument: GC6 Analyst: DTF		40.0-140	%	1	11/22/2011 8:43
Analytical Batch: XGC1733 Analytical Method: SW-846 8015C DRO Instrument: GC6 Analyst: DTF	 Konstruction and the second s	and an entry of the second of the second			
		Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/20/2011 0 : 31.93 g	9:11	
int Date: 12/01/2011	Business Drive, Wilmington, NC				N.C. Certification # 4

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Results of SB-18 Client Sample ID: SB-18 Client Project ID: NCDOT Form Lab Sample ID: 31103290004-/ Lab Project ID: 31103290	er Crumb	ly Property	Collection D Received Da Matrix: Soil- Solids (%):	ate: 11/18/ Solid as dr	2011 15:00		
Results by SW-846 8015C GRO			contrast for the second way on a management of the second second second second second second second second seco				
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 3.49	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyz</u> 11/21/2011	
Surrogates 4-Bromofluorobenzene	100		70.0-130	%	1	11/21/2011	17:18
Batch Information Analytical Batch: VGC1527 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/21/2011		יישראש אינער אינער אינער איינער א	Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 5035 1/19/2011 1 .: 7.027 g	2:57	1997 I.S. B. (2019)	anter e altre des de la
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Print Date: 12/01/2011 SGS North America Inc.	5500 Bu	isiness Drive, Wilmington, 1 0.1903 f 910.350.1557 ww	NC 28405 w.us.sas.com			N.C. Certifica	tion #48
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Results of SB-18 Client Sample ID: SB-18 Client Project ID: NCDOT Form Lab Sample ID: 31103290004-0 Lab Project ID: 31103290	ier Crumbly C	Property	Collection D Received Da Matrix: Soil- Solids (%):	ate: 11/18/ Solid as dr	2011 15:00	
Results by SW-846 8015C DRO	remination de la compañía					an a star a s
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 7.69	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 9:10
urrogates					·	
o-Terphenyl	60.2		40.0-140	%	1	11/22/2011 9:10
Batch Information	anti in 1977 - 1977 - 1977 - 1977 - 1977					nn ana n maala ka ayaa ka wee
Analytical Batch: XGC1733 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2011			Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 3541 1/20/2011 0 .: 31.87 g	9:11	
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Results of SB-19 Client Sample ID: SB-19 Client Project ID: NCDOT Form Lab Sample ID: 31103290005-A Lab Project ID: 31103290	er Crumbly	Property	Collection Da Received Da Matrix: Soil- Solids (%): 8	ite: 11/18/ Solid as di	2011 15:00		
Results by SW-846 8015C GRO			HHEMPPLANE (*** ****				
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3,34	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyze</u> 11/21/2011 1	
Surrogates							
4-Bromofluorobenzene	101		70.0-130	%	1	11/21/2011 1	7:44
Batch InformationAnalytical Batch: VGC1527Analytical Method: SW-846 80150Instrument: GC7Analyst: MDYAnalytical Date/Time: 11/21/2011		. 2011 - 11 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Prep Batch: VXX23 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 5035 1/19/2011 :7.05 g	12:58	14.1	····
Print Date: 12/01/2011	an the second second		n lehin na ara-sa ina menangkanakan k	e land og so		N.C. Certificati	on # 481
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Results of SB-19 Client Sample ID: SB-19 Client Project ID: NCDOT Form Lab Sample ID: 31103290005-C Lab Project ID: 31103290	er Crumbly P	Property	Collection Da Received Da Matrix: Soil- Solids (%): 4	tte: 11/18/2 Solid as dr	2011 15:00	
Results by SW-846 8015C DRO			a na ta ta mangan manga ta na sa ta		9	
Parameter	<u>Result</u>	Qual	LOQ/CL	<u>Units</u>	<u>DF</u>	Date Analyzed
Diesel Range Organics (DRO)	ND		7.24	mg/kg	1	11/22/2011 19:11
Surrogates					4	
o-Terphenyl	82.6		40.0-140	%	1	11/22/2011 19:11
Analytical Batch: XGC1741 Analytical Batch: XGC1741 Analytical Method: SW-846 80150 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2011		an a	Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 3541 1/20/2011 0 .: 32.57 g	99:11	
Print Date: 12/01/2011	aanaa ah a	n sentre sentre solutions and solutions	an na amin' na sanana sina si	<u></u>	<u></u>	N.C. Certification # 481
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Results of SB-20	· · · · · · · · · · · · · · · · · · ·	an da farana mana da	4.89 .9497-00000-00000-04-04-04-04	n yn definitier yn ar yn definitier yn an an ar	andoral and a second according to a substitution of a second
Client Sample ID: SB-20 Client Project ID: NCDOT Form Lab Sample ID: 31103290006-/ Lab Project ID: 31103290	er Crumbly Property	Collection D Received Da Matrix: Soil Solids (%):	ate: 11/18 Solid as d	/2011 15:0	
Results by SW-846 8015C GRO		1999 - David and a start of the	a an an Adarston a	antinas ala districti kativi	1874216149748260081abia0840\$\$\$\$\$\$
Parameter Gasoline Range Organics (GRO)	<u>Result Qual</u> ND	<u>LOQ/CL</u> 3.85	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/21/2011 18:10
urrogates	55 G	70.0.400	0/		44/04/0044 40 40
4-Bromofluorobenzene	98.9	70.0-130	%	1	11/21/2011 18:10
Batch Information Analytical Batch: VGC1527 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/21/2011		Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 4 Prep Initial Wt./Vol Prep Extract Vol:	-846 5035 1/19/2011 .: 6.467 g	12:59	
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Client Sample ID: SB-20 Client Project ID: NCDOT Fo Lab Sample ID: 3110329000 Lab Project ID: 31103290			Collection D Received Da Matrix: Soil- Solids (%):	ate: 11/18/ Solid as dr	2011 15:0	
Results by SW-846 8015C DI	RO	8		ana ang sin ta ang ang ang san sin sin	andra a fan an de la fan de la caste a d	on a bossic manage and skiller
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 7.54	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 19:39
u rrogates o-Terphenyl	62.1		40.0-140	%	1	11/22/2011 19:39
Analytical Batch: XGC1741 Analytical Method: SW-846 80 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	846 3541 1/20/2011 0 .: 33.06 g	99:11	
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Results of SB-21 Client Sample ID: SB-21 Client Project ID: NCDOT Form Lab Sample ID: 31103290007-A Lab Project ID: 31103290		Property	Collection Da Received Da Matrix: Soil- Solids (%): 5	ite: 11/18/ Solid as dr	2011 15:0	
Results by SW-846 8015C GRO				ntesta antista	daar mad side oo si dalamad ku she ist sin andar ku	
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3.59	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/21/2011_18:36
Surrogates			2.00			1.
4-Bromofluorobenzene	99.7		70.0-130	%	1	11/21/2011 18:36
Batch Information Analytical Batch: VGC1527 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/21/2011			Prep Batch: VXX2: Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 5035 1/19/2011 1 : 6.113 g	13:00	ст. талыну тала жаланда талан талан тал
Print Date: 12/01/2011		a an				N.C. Certification # 481
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Results of SB-21 Client Sample ID: SB-21 Client Project ID: NCDOT Form Lab Sample ID: 31103290007-0 Lab Project ID: 31103290	ier Crumbly Pro	perty	Collection Da Received Da Matrix: Soil- Solids (%): S	ite: 11/18/ Solid as dr	2011 15:00	
Results by SW-846 8015C DRO			ono en en esta contra contr			
<u>Parameter</u>		uerer X Qual	LOQ/CL	<u>Units</u>	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.77	mg/kg	1	11/22/2011 20:07
Surrogates o-Terphenyl	78.9		40.0.440	0/	4	44/00/0044 00.07
	10.9		40.0-140	%	1	11/22/2011 20:07
Batch Information Analytical Batch: XGC1741 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2011		ning and an an an and an and	Prep Batch: XXX20 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/20/2011 0 : 32.41 g	99:11	5 (1996) 997-99 (1996) - ANNO (1995)
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Client Project ID: NCDOT Former Crumbly Property Received Date: 11/18/2011 15:00 Lab Sample ID: 31103290008-A Matrix: Soil-Solid as dry weight Lab Project ID: 31103290 Solids (%): 76.60 Results by SW-846 8015C GRO Environment of the second date of the secon			······································					
Parameter Result Qual LOC/CL Units DE Date Analyzade Gasoline Range Organics (GRO) ND 3.88 mg/kg 1 11/21/2011 18/1 urorgates 4-Bromofluorobenzene 98.4 70.0-130 % 1 11/21/2011 19/1 Batch Information * * Prep Batch: VXX2396 * 7 Analytical Method: SW-446 8035 F<	Client Sample ID: SB-22 Client Project ID: NCDOT Forme		Property	Received Da Matrix: Soil-	te: 11/18 Solid as d	/2011 15:00		en e
Parameter Result Qual LOC/CL Units DE Date Analyzade Gasoline Range Organics (GRO) ND 3.88 mg/kg 1 11/21/2011 18/1 urorgates 4-Bromofluorobenzene 98.4 70.0-130 % 1 11/21/2011 19/1 Batch Information * * Prep Batch: VXX2396 * 7 Analytical Method: SW-446 8035 F<	Results by SW-846 8015C GRO			n a sa na na sa				
4-Bromofiluorobenzene 98.4 70.0-130 % 1 11/21/2011 19:0 Batch Information Analytical Batch: VGC1527 Analytical Mathod: SW-446 8015C GRO Instrument: GG7 Analytical Date/Time: 11/21/2011 19:02 Analytical Date/Time: 11/21/2011 19:02 Prep Extract Vol: 5 mL Prep Extract Vol: 5 mL	Parameter	<u>Result</u>						
Analytical Batch: V&C1527 Analytical Batch: V&C1527 Analytical Batch: V&C1527 Analytical Batch: V&C1528 Analytical Date/Time: 11/21/2011 13:02 Analytical Date/Time: 11/21/201	Surrogates 4-Bromofluorobenzene	98.4		70.0-130	%	1	11/21/2011	19:02
Analytical Batch: VXX2396 Prep Batch: VXX2396 Analytical Mothod: SW-346 8015C GRO Prep Method: SW-346 5035 Instrument: GC7 Prep Date/Time: 11/19/2011 13:02 Analytical Date/Time: 11/21/2011 19:02 Prep Extract Vol: 6:728 g Analytical Date/Time: 11/21/2011 19:02 Prep Extract Vol: 5 mL	Batch Information	an an an Arish	, second constants		al recorder of	····	an a	s ar e se s
	Analytical Batch: VGC1527 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY			Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol	846 5035 1/19/2011 : 6.728 g	13:02		
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Results of SB-22 Client Sample ID: SB-22 Client Project ID: NCDOT Form Lab Sample ID: 31103290008-0 Lab Project ID: 31103290	er Crumbl	y Property	Collection Da Received Da Matrix: Soil- Solids (%): 1	ite: 11/18/2 Solid as dry	011 15:0	
Results by SW-846 8015C DRO	n anan ing sami		in generation of the second		na salahan ilin dalam takin takin ilin	
horn on encode and the committee of the second and a se	Result	<u>Qual</u>	LOQ/CL	Units	<u>DF</u>	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	ana na si		*		u mara na na siyo ya	was the second second second
Analytical Batch: XGC1741 Analytical Method: SW-846 80156 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2011			Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/20/2011 09 .1 33.12 g):11	
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Print Date: 12/01/2011	· · · · · · · · · · · · · · · · · · ·	an a	. N. Ministratione (Claude Clamps Constants	nisin temperatura		N.C. Certification #481
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SG 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 <u>Result</u> Qual LOQ/CL Units DF Date Analyzed 11/21/2011 19:28 Gasoline Range Organics (GRO) ND 3.77 mg/kg 1 Surrogates 4-Bromofluorobenzene 99.1 70.0-130 % 1 11/21/2011 19:28 Batch Information Analytical Batch: VGC1527 Prep Batch: VXX2396 Prep Method: SW-846 5035 Analytical Method: SW-846 8015C GRO Instrument: GC7 Prep Date/Time: 11/19/2011 13:05 Analyst: MDY Prep Initial Wt./Vol.: 5.7 g Analytical Date/Time: 11/21/2011 19:28 Prep Extract Vol: 5 mL

Print Date: 12/01/2011

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Prosuble of 5B-23 Collection Date: 11/16/2011 11:55 Collection Date: 11/16/2011 11:55 Roce/red Date: 11/16/2011 11:55 Lab Project ID: 311032900 Solid (%): 53.00 Results by SW-466 8015C DRO Solid (%): 53.00 Parameter Deskill Deset Range Organica (DRO) ND Surrogates Terphanyl Terphanyl 76.5 Analytical Betch: XCC1741 Prep Batch: XCX2002 Analytical Betch: XCC1741 Prep Eatch: XCX2002 Analytical Betch: XCC1741 N.C. Certhagen/4 Bit Solid Analytic Trime: 11/22/2011 21:03 N.C. Certhagen/4 Bit	SGS							
Parameter Result Qual LOQ/CL Units DE Date Analyzed Dised Range Organics (DRO) ND 5.69 mg/kg 1 11/22/2011 21:03 Surrogates Terphenyl 76.5 40.0-140 % 1 11/22/2011 21:03 Analytical Backt: XXX2002 Prep Mathical: SW-846 3911 Prep Mathical: SW-846 3911 Instrument: GG Prep Mathical: SW-846 3911 Prep Mathical: SW-846 3911 Analytical Data/Time: 11/22/2011 21:03 Prep Mathical: SW-846 3911 Prep Mathical: SW-846 3911 Analytical Data/Time: 11/22/2011 21:03 Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL	Client Sample ID: SB-23 Client Project ID: NCDOT Forr Lab Sample ID: 31103290009	ner Crumbly	y Property	Received Date: 11/18/2011 15:00 Matrix: Soll-Solid as dry weight				
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 Method: SW-446 80+5C DRO Instrument: CC6 Analytical Method: SW-446 80+5C DRO Instrument: CC6 Analytical Date/Time: 11/22/2011 Prep Batch: XXX2002 Prep Method: SW-446 8541 Prep Initial WL/Vol: SU/446 Prep Date/Time: 11/22/2011 09:11 Analytical Date/Time: 11/22/2011 21:03 Prep Extract Vol: 10 mL 91/04 91/04	Results by SW-846 8015C DRC)		n an an		-3209 <u>- 1 - 1 - 1</u> - 1		
Surrogates o-Terphenyl 76.5 40.0-140 % 1 11/22/2011 21:03 Batch Information Analytical Batch: XXX2002 Instrument: GC6 Analytical Dato/Time: 11/22/2011 21:03 Prep Batch: XXX2002 Prep Mathical: SW-468 63:01 Prep Data/Time: 11/22/2011 09:11 Prep Initial WL/Voi: 32.14 g Preo Extract Vol: 10 mL	<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	LOQ/CL	<u>Units</u>	DF	Date Analyzed	
o-Terphenyl 76.5 40.0-140 % 1 11/22/2011 21:03 Batch Information Analytical Batch: XXX2002 Prep Batch: XXX2002 Prep Mathical SM 66 5511 Analytical Date/Time: 11/22/2011 21:03 Prep Batch: XXX2002 Prep Mathical SM 66 5511 Analytical Date/Time: 11/22/2011 21:03 Prep Batch: XXX2002 Prep Mathical SM 66 5511 Prep Jointal WL/Vol.: 32.14 g Prep Date/Time: 11/22/2011 09:11 Prep Date/Time: 11/20/2011 09:11 Prep Jointal WL/Vol.: 32.14 g Prep Extract Vol: 10 ml. Prep Mathical Mathical SM 66 551 Prep Jointal WL/Vol.: 32.14 g Prep Extract Vol: 10 ml. Prep Jointal WL/Vol.: 32.14 g Prep Jointal WL/Vol.: 32.14 g Prep Jointal WL/Vol.: 32.14 g Prep Jointal WL/Vol.: 32.14 g	Diesel Range Organics (DRO)	ND		6.69	mg/kg	1	11/22/2011 21:03	
Batch Information Prep Batch: XXX2002 Analytical Batch: XSC1741 Prep Batch: XXX2002 Analytical Method: SW-846 8015C DRO Prep Method: SW-846 8311 Instrument: GC6 Prep Date/Time: 11/02/2011 09:11 Analytical Date/Time: 11/02/2011 21:03 Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL State Sta		70.5		10.0.110		4		
Analytical Batch: XXX2002 Analytical Method: SW-448 8015C DRO Instrument: GC6 Prep Dethold: SW-446 3541 Analytical Date/Time: 11/22/2011 21:03 Prep Datinital WL/Vol: 32.14 g Analytical Date/Time: 11/22/2011 21:03 Prep Extract Vol: 10 nL	o-lerpnenyl	76,5		40.0-140	%	1	11/22/2011 21:03	
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Results of SB-24 Client Sample ID: SB-24 Client Project ID: NCDOT Formulab Sample ID: 31103290010-A Lab Project ID: 31103290	er Crumk		Collection Da Received Da Matrix: Soll- Solids (%): 4	ite: 11/18/ Solid as dr	2011 15:0	
Results by SW-846 8015C GRO			en van oosternaatse een	y a salatage, taxa	iya iya kirki si ya	
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 4.05	<u>Units</u> mg/kg	<u>DF</u> 1	Date Analyzed 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 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011			Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 6	846 5035 1/19/2011 1 : 5.854 g		
Print Date: 12/01/2011	5500 BI	usiness Drive, Wilmington, N	C 28405	• • • • • • • •		N.C. Certification # 481
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Results of SB-24 Client Sample ID: SB-24 Client Project ID: NCDOT Form Lab Sample ID: 31103290010-C Lab Project ID: 31103290	er Crumbly		Collection D Received Da Matrix: Soil- Solids (%):	ate: 11/18/ Solid as di	2011 15:00	99-99-99-99-99-99-99-99-99-99-99-99-99-
yen boonen bis waarde een die staat wat is soon als staat waarde een die soon die soor die soor die soor die so	te de seus a com en er					
Results by SW-846 8015C DRO <u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 7.51	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 21:32
Surrogates o-Terpheny!	77.3		40.0-140	%	1	11/22/2011 21:32
Batch Information					as.#Na	
Analytical Batch: XGC1741 Analytical Method: SW-846 80154 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/2011			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol;	846 3541 1/20/2011(.: 31.56 g	19:11	
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Results of SB-25 Client Sample ID: SB-25 Client Project ID: NCDOT Forme Lab Sample ID: 31103290011-A Lab Project ID: 31103290	er Crumbl		Collection Da Received Da Matrix: Soil- Solids (%): 4	ite: 11/18/2 Solid as dr	2011 15:0	
Results by SW-846 8015C GRO	****** .N.a.denia da			****		
<u>Parameter</u> Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3.43	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 13:22
Surrogates 4-Bromofluorobenzene	99.8		70.0-130	%	1	11/22/2011 13:22
Analytical Batch: VGC1532 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011			Prep Batch: VXX2 Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 5035 1/19/2011 1 : 6.838 g	3:07	
Print Date: 12/01/2011		se i . I is mage un sum i su . L	2017 - 11 - 12 - 12 - 12 - 12 - 12 - 12 -			N.C. Certification # 481
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Results of SB-25			1				
Client Sample ID: SB-25 Client Project ID: NCDOT For Lab Sample ID: 31103290011 Lab Project ID: 31103290	mer Crumbly	v Property	Collection D Received Da Matrix: Soll- Solids (%):	ate: 11/18/ Solid as dr	2011 15:0		
Results by SW-846 8015C DR	0						
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 7.32	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyz</u> 11/22/2011	
Surrogates o-Terphenyl	80.4		40.0-140	%	1	11/22/2011	22.00
	0011			70	·	11/22/2011	22.00
Batch Information Analytical Batch: XGC1741 Analytical Method: SW-846 80 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/22/20			Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/20/2011 0 .: 32.02 g	9:11	u un un un manager a san ann an an ann	t ar dar minne
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Results of SB-26	· · · · · · · · · · · · · · · · · · ·		ang manang m Manang manang				
Results of SB-26 Client Sample ID: SB-26 Client Project ID: NCDOT Form Lab Sample ID: 31103290012-A Lab Project ID: 31103290	ent Sample ID: SB-26 ent Project ID: NCDOT Former Crumbly Property b Sample ID: 31103290012-A		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					والمراجع فرواب والمحافظ والمحاوي والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والمحافظ والم	Managara ang sang sa	
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/Cl.</u> 3.65	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 13:4	
urrogates 4-Bromofluorobenzene	100		70.0-130	%	1	11/22/2011 13:4	
Batch Information		ورواقه المترارينين		e e construction de la construcción de la construcc			
Analytical Batch: VGC1532 Analytical Batch: VGC1532 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011			Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 6	846 5035 1/19/2011 1 : 6.064 g	3:08		
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nt Date: 12/01/2011	·	. N. Y. (1997) Marcal Composition				N.C. Certification #	

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Results of SB-26 Client Sample ID: SB-26 Client Project ID: NCDOT For Lab Sample ID: 31103290012 Lab Project ID: 31103290	mer Crumbly Property	Collection D Received D Matrix: Soil Solids (%):	ate: 11/18/ -Solid as di	2011 15:0	
Results by SW-846 8015C DR	0	and a set of			ar an
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result Qual</u> ND	<u>LOQ/CL</u> 6.82	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 7:07
urrogates					
o-Terpheny!	101	40.0-140	%	1	11/24/2011 7:07
Analytical Batch: XGC1744 Analytical Method: SW-846 80' Instrument: GC6	ISC DRO	Prep Batch: XXX2 Prep Method: SW	-846 3541		
Analyst: DTF Analytical Date/Time: 11/24/20	11 07:07	Prep Date/Time: Prep Initial Wt./Vo Prep Extract Vol:	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g		
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g		
Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	
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Analyst: DTF	11 07:07	Prep Initial Wt./Vo	l.: 32.48 g	15:15	

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z jagastis maratikis, jatas, ja			146-16-1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
<u>LOQ/CL</u> 3.23	<u>Units</u> mg/kg	<u>DF</u> 1	Date Analyzed 11/22/2011 14:15
70.0-130	%	1	11/22/2011 14:15
	an a star way a wara	o manana ana	a ha da a da anticipa da compositiva da compositiva da compositiva da compositiva da compositiva da compositiva
Prep Method: SW-	846 5035	- 4 -	
		3:09	
Prep Extract Vol: 5	mL		
	Received Da Matrix: Soil-3 Solids (%): 8 <u>LOQ/CL</u> 3.23 70.0-130 Prep Batch: VXX24 Prep Method: SW-4 Prep Date/Time: 1' Prep Initial Wt./Vol.	Received Date: 11/18/2 Matrix: Soil-Solid as dr Solids (%): 82.30 <u>LOQ/CL Units</u> 3.23 mg/kg 70.0-130 % Prep Batch: VXX2404 Prep Method: SW-846 5035	LOQ/CL Units DF 3.23 mg/kg 1 70.0-130 % 1 Prep Batch: VXX2404 Prep Method: SW-846 5035 Prep Date/Time: 11/19/2011 Prep Initial Wt./Vol.: 7.523 g

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Results of SB-27 Client Sample ID: SB-27 Client Project ID: NCDOT Form Lab Sample ID: 31103290013-4 Lab Project ID: 31103290	ner Crumbl		Collection Da Received Da Matrix: Soll- Solids (%): 4	te: 11/18/ Solid as dr	2011 15:00		
Results by SW-846 8015C DRO	in a sana sa an an an an I						
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 7.52	<u>Units</u> malka	<u>DF</u> 1	Date Analyzed	
Surrogates	ND		7.52	mg/kg	1	11/24/2011 7	:35
o-Terphenyl	88.6		40.0-1 40	%	1	11/24/2011 7	;35
Batch Information		n sa kana kata kata kata kata kata kata kat		energy of a fine pro-	i suu sitti in t	e and the second and second second	
Analytical Batch: XGC1744 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2011			Prep Batch: XXX20 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/22/2011 1 : 32,33 g	5:15		
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Results of SB-28 Client Sample ID: SB-28 Client Project ID: NCDOT Form Lab Sample ID: 31103290014-, Lab Project ID: 31103290	er Crumbly Property	Collection D Received Da Matrix: Soil Solids (%):	ate: 11/18/ -Solid as di	2011 15:0	
Results by SW-846 8015C GRO				ik Baarda da kata da kata ana da k	
Parameter Gasoline Range Organics (GRO)	<u>Result</u> <u>Qual</u> ND	<u>LOQ/CL</u> 3.46	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 14:41
Surrogates 4-Bromofluorobenzene	99.6	70.0-130	%	1	11/22/2011 14:41
Batch Information	Wiley and the state of the state of the term the terms and the state of the state o	112 - N.S.A.B 2 - 1100 - 111 - 12000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 -		alah seria tang ang sa s	 Notification and the statement with which is
Analytical Batch: VGC1532 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011		Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 4	-846 5035 1/19/2011 .: 6.689 g	13:11	
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Results of SB-28 Client Sample ID: SB-28 Client Project ID: NCDOT Form Lab Sample ID: 31103290014-0 Lab Project ID: 31103290	er Crumbly Property	Collection Da Received Da Matrix: Soil- Solids (%): 4	ite: 11/18/2 Solid as dry	2011 15:0		
Results by SW-846 8015C DRO	n and have a second		مربع بي من البري ويكم وي		NOT 111 111 111 111 111 111 111	
Parameter	<u>Result</u> Qual	LOQ/CL	Units	<u>DF</u>	Date Analyzed	4
	ND	7.03	mg/kg	1	11/24/2011 8	-
Surrogates						
o-Te r phenyl	81.8	40.0-140	%	1	11/24/2011 8	3:03
Batch Information	an Anna an an ann an an Anna a	- ಆಗ್ ಗೇ ಹೋಟರನ್ನು ನಡೆಸಲಾಸು, ಎರಡ್ ಎಂ. ನೀರ್ನ ಎಂ. ಇಂಗ		to and the set of the		
Analytical Batch: XGC1744 Analytical Method: SW-846 80150 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2011		Prep Batch: XXX20 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 1	846 3541 1/22/2011 15 : 32.94 g	5:15		
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Results of SB-29 Client Sample ID: SB-29 Client Project ID: NCDOT Forme Lab Sample ID: 31103290015-A Lab Project ID: 31103290	er Crumbly I		Collection Da Received Da Matrix: Soil- Solids (%): 4	ite: 11/18/ Solid as dr	2011 15:00	997192-94994a-94994a-9494
Results by SW-846 8015C GRO		• 629 62 6162 • 12 1 •				
<u>Parameter</u>	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		ana na mangana na arawa na arawa	an an ann an tar anns an martaire an an an tar	-0a-2		ر. ۱۹۹۵ - ۲۰۰۹ میکند با در ۱۹۹۵ - ۲۰۰۹ میکند است. ۱۹۹۹ - ۲۰۰۹ - ۲۰۰۹ میکند از ۲۰۰۹ میکند است.
Analytical Batch: VGC1532 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011			Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 5035 1/19/2011 1 .: 6.952 g	13:12	
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<u>L</u> Qual	LOQ/CL 7.45 40.0-140 Prep Batch: XX Prep Method: S Prep Date/Time: Prep Initial Wt./V Prep Extract Vol	W-846 3541 11/22/2911 1 (ol.: 32.85 g	<u>DF</u> 1 1	Date Analyzed 11/24/2011 8 11/24/2011 8
<u>It Qual</u>	7.45 40.0-140 Prep Batch: XX Prep Method: S Prep Date/Time: Prep Initial Wt./V	mg/kg % X2010 W-846 3541 11/22/2011 fol: 32.85 g	1	11/24/2011 8
	40.0-140 Prep Batch: XX Prep Method: S Prep Date/Time: Prep Initial Wt./V	% X2010 W-846 3541 11/22/2011 1 ′ol.: 32.85 g	1	
	Prep Batch: XX Prep Method: S Prep Date/Time: Prep Initial Wt./V	X2010 W-846 3541 11/22/2011 ′ol.: 32.85 g	nan antara an atat dat ta	11/24/2011 8
	Prep Batch: XX Prep Method: S Prep Date/Time: Prep Initial Wt./V	X2010 W-846 3541 11/22/2011 ′ol.: 32.85 g	nan antara an atat dat ta	11/24/2011 8
	Prep Method: S Prep Date/Time: Prep Initial Wt./V	W-846 3541 11/22/2911 1 (ol.: 32.85 g	15:15	
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Results of SB-30 Client Sample ID: SB-30 Client Project ID: NCDOT Form Lab Sample ID: 31103290016-A Lab Project ID: 31103290	er Crumbly		Collection Da Received Da Matrix: Soll- Solids (%): 4	ite: 11/18/: Solid as dr	2011 15:00	металанын (насула) (такалан алтан алтан алтан	
Results by SW-846 8015C GRO						a an	Ļ
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 3.49	<u>Units</u> mg/kg	<u>DF</u> 1	Date Analyzed 11/22/2011 15:34	
Surrogates							
4-Bromofluorobenzene	98.3		70.0-130	%	1	11/22/2011 15:34	
Batch Information			en maar meelik kan saar meering maaraada ayaa saa	eren Artzailtaelt Mene	a an	a na ana ang ang ang ang ang ang ang ang	
Analytical Batch: VGC1532 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011			Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 8	846 5035 1/19/2011 1 : 7.138 g	3:13		
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Results of SB-30 Client Sample ID: SB-30 Client Project ID: NCDOT Lab Sample ID: 31103290 Lab Project ID: 31103290	Former Crumbly	y Property	Collection D Received Da Matrix: Soil Solids (%):	ate: 11/18/ -Solid as di	2011 15:0	
Results by SW-846 8015C						
<u>Parameter</u> Diesel Range Organics (DRC	Result D) ND	<u>Qual</u>	<u>LOQ/CL</u> 7.60	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 8
Surrogates o-Terphenyl	69.1		40.0-140	%	1	11/24/2011 8
Analytical Batch: XGC174 Analytical Method: SW-84 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/2	6 8015C DRO		Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 3541 1/22/2011 .: 32.83 g	15:15	
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Results of SB-31 Client Sample ID: SB-31 Client Project ID: NCDOT Form Lab Sample ID: 31103290017-/ Lab Project ID: 31103290	er Crumbly Property	Collection D Received Da Matrix: Soll- Solids (%):	ate: 11/18/2 Solid as dry	2011 15:0	
Results by SW-846 8015C GRO		دور المراجع و مراجع و م			
Parameter Gasoline Range Organics (GRO)	<u>Result Qual</u> ND	LOQ/CL 3.75	<u>Units</u> mg/kg	<u>DF</u> 1	Date Analyzed 11/22/2011 16:00
Surrogates					
4-Bromofluorobenzene	99.3	70.0-130	%	1	11/22/2011 16:00
Batch Information		n Martin Son and a state of a state of the son state of the state.	فالاستنار متحريته الإلاران	tation constants	an a successión a construction de la construction de la construction de la construction de la construction de l
Analytical Batch: VGC1532 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/22/2011		Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 5035 1/19/2011 1 .: 6.724 g	3:16	
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Results of SB-31 Client Sample ID: SB-31 Client Project ID: NCDOT F Lab Sample ID: 311032900 Lab Project ID: 31103290	ormer Crumbly Property	Collection D Received D Matrix: Soil Solids (%):	ate: 11/18/ -Solid as di	2011 15:0	
Results by SW-846 8015C D		n tan ini kangguna na kana na na kana na kana da kata kata kata kata kata kata kata			
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result Qual</u> ND	<u>LOQ/CL</u> 7.86	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 9:26
urrogates					
o-Terphenyl	68.0	40.0-140	%	1	11/24/2011 9:26
Analytical Method: SW-846 8 Instrument: GC6 Analyst: DTF	8015C DRO	Prep Method: SW Prep Date/Time: * Prep Initial Wt./Vo	11/22/2011	15:15	
Analytical Date/Time: 11/24/	2011 09:26	Prep Extract Vol:			
Analytical Date/Time: 11/24/	2011 09:26				
Analytical Date/Time: 11/24/	2011 09:28				
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Analytical Date/Time: 11/24/	2011 09:28				

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Results of SB-32 Client Sample ID: SB-32 Client Project ID: NCDOT Form Lab Sample ID: 31103290018-A Lab Project ID: 31103290	er Crumbly F		Collection Da Received Da Matrix: Soil- Solids (%): {	ite: 11/18/2 Solid as dry	2011 15:00	антариянанын жалан тараалык тараалык калан к
Results by SW-846 8015C GRO						
Parameter Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3.32	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/22/2011 16:26
Surrogates						
4-Bromofiuorobenzene	96.0		70.0-130	%	1	11/22/2011 16:26
Batch InformationAnalytical Batch: VGC1532Analytical Method: SW-846 80154Instrument: GC7Analyst: MDYAnalytical Date/Time: 11/22/2011		1999 - 1997 - 1997 - 1997 - 1998 - 1997 - 1997 - 1997 - 199	Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 4	846 5035 1/19/2011 1 .: 7.233 g	3:18	1
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Lab Project ID; 31103290 Results by SW-846 8015C DR(-C	Matrix: Soll Solids (%):		2011 15:0 y weight
Parameter	<u>Result Qual</u>	LOQ/CL	<u>Units</u>	DF
Diesel Range Organics (DRO)	ND	7.46	mg/kg	1
Surrogates				

Print Date: 12/01/2011

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Date Analyzed

11/24/2011 9:54

11/24/2011 9:54

SG Results of SB-33A Collection Date: 11/16/2011 16:55 Client Sample ID: SB-33A Received Date: 11/18/2011 15:00 Client Project ID: NCDOT Former Crumbly Property Matrix: Soil-Solid as dry weight Lab Sample ID: 31103290019-A Lab Project ID: 31103290 Solids (%): 76.80 Results by SW-846 8015C GRO Parameter LOQ/CL <u>Units</u> <u>DF</u> Date Analyzed Result <u>Qual</u> Gasoline Range Organics (GRO) 4.30 3.86 mg/kg 1 11/22/2011 16:53 Surrogates 4-Bromofluorobenzene 98.4 70.0-130 11/22/2011 16:53 % 1 **Batch Information** Analytical Batch: VGC1532 Prep Batch: VXX2404 Analytical Method: SW-846 8015C GRO Prep Method: SW-846 5035 Instrument: GC7 Prep Date/Time: 11/19/2011 13:19 Prep Initial Wt./Vol.: 6.747 g Analyst: MDY Prep Extract Vol: 5 mL Analytical Date/Time: 11/22/2011 16:53 Print Date: 12/01/2011

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SG Results of SB-33A Collection Date: 11/16/2011 16:55 Client Sample ID: SB-33A Client Project ID: NCDOT Former Crumbly Property Received Date: 11/18/2011 15:00 Matrix: Soil-Solid as dry weight Lab Sample ID: 31103290019-C Lab Project ID: 31103290 Solids (%): 76.80 Results by SW-846 8015C DRO naarsteeldhaan LOQ/CL Units <u>DF</u> Date Analyzed Parameter Result Qual Diesel Range Organics (DRO) ND 8,08 mg/kg 1 11/24/2011 10:22 Surrogates 69.4 40.0-140 11/24/2011 10:22 o-Terphenyl % 1 **Batch Information** Analytical Batch: XGC1744 Prep Batch: XXX2010 Analytical Method: SW-846 8015C DRO Prep Method: SW-846 3541 Instrument: GC6 Prep Date/Time: 11/22/2011 15:15 Analyst: DTF Prep Initial Wt./Vol.: 32.24 g Analytical Date/Time: 11/24/2011 10:22 Prep Extract Vol: 10 mL

Print Date: 12/01/2011

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Results by SW-846 8015C GROParameterResultQualLOQ/CLUnitsDFDate AnalyzedGasoline Range Organics (GRO)12.23.85mg/kg111/28/201115:Surrogates4-Bromofluorobenzene95.370.0-130%111/28/201115:Batch InformationAnalytical Batch:VGC1537Prep Batch:VXX2420Prep Method:SW-846 5035Analytical Method:SW-846 8015C GROPrep Method:SW-846 5035Prep Date/Time:11/19/201113:22Analytical Date/Time:11/28/201115:39Prep Extract Vol:5 mL	Client Sample ID: SB-33B Client Project ID: NCDOT Former Crumbly Property Lab Sample ID: 31103290020-A Lab Project ID: 31103290		Collection D Received Da Matrix: Soil- Solids (%):				
Gasoline Range Organics (GRO) 12.2 3.85 mg/kg 1 11/28/2011 15: Surrogates 4-Bromofluorobenzene 95.3 70.0-130 % 1 11/28/2011 15: Batch Information Analytical Batch: VGC1537 Prep Batch: VXX2420 VXX2420 Analytical Method: SW-846 8015C GRO Prep Method: SW-846 5035 Instrument: GC7 Prep Date/Time: 11/19/2011 13:22 Analyst: MDY Prep Initial Wt./Vol.: 6.552 g	Results by SW-846 8015C GR	0 The second states and states at the second states at the second states at the second states at the second states		- <u></u>			n sound 14 546, proch , , 200, Cry HVC <mark>7</mark> 49
Surrogates 4-Bromofluorobenzene 95.3 Batch Information Analytical Batch: VGC1537 Prep Batch: VXX2420 Analytical Method: SW-846 8015C GRO Instrument: GC7 Analyst: MDY			Qual				
4-Bromofluorobenzene 95.3 70.0-130 % 1 11/28/2011 15: Batch Information		12.2		3.00	mg/xy	1	11/20/2011 15:3
Batch Information Analytical Batch: VGC1537 Prep Batch: VXX2420 Analytical Batch: SW-846 8015C GRO Prep Method: SW-846 5035 Instrument: GC7 Prep Date/Time: 11/19/2011 13:22 Analyst: MDY Prep Initial Wt./Vol.: 6.552 g		95.3		70 0-130	%	1	11/28/2011 15:3
	Instrument: GC7 Analyst: MDY			Prep Date/Time: 1 Prep Initial Wt./Vol	1/19/2011 1 .: 6.552 g	3:22	

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Results of SB-33B		h Marine Constantion	Managalan Makalan katalan katalan seri ana sara katan kat	diyi	-	
Client Sample ID: SB-33B Client Project ID: NCDOT For Lab Sample ID: 31103290020 Lab Project ID: 31103290	mer Crumbly	/ Property	Collection D Received Da Matrix: Soil- Solids (%):	ate: 11/18/2 Solid as dry	2011 15:0	
Results by SW-846 8015C DR	0	·····	nya kacazana ka na kata kipala kisata kisata ing		m;0,0%)==	
Parameter Diesel Range Organics (DRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 7.84	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 10:50
Surrogates						
o-Terphenyl	78.6		40.0-140	%	1	11/24/2011 10:50
Batch Information		ه این در چو میهندرو رسو	a l'anna a tha a bha ann an t-airtean an			an a sharan a sharan ay an
Analytical Batch: XGC1744 Analytical Method: SW-846 80 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/20			Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	-846 3541 1/22/2011 1 .: 32.15 g	5:15	
Red Dete: 1201/011	11.411.1 = 11.111 = 11.11			<u></u>		N.C. Certification # 481
Print Date: 12/01/2011	Iccos a	Data MPL 1 - 4	NC 20105			N.C. Certification # 481
SGS North America Inc.		ness Drive, Wilmington, 1903 f 910.350.1557 wy		₩~~~		Member of SGS Group

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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				
	laans of seath call of Result	Qual	Loq/cl	<u>Units</u>	DF	Date Analyzed	
5 5 ()	۱D		3.82	mg/kg	1	11/28/2011 16:06	
Surrogates 4-Bromofluorobenzene 9	18.0		70.0-130	%	1	11/28/2011 16:06	
Batch Information	e eser entre e		unter a construction	·	·····		
Analytical Batch: VGC1537 Analytical Method: SW-846 8015C (Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/28/2011 1			Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: {	846 5035 1/19/2011 1 .: 6.764 g	3:23		

Print Date: 12/01/2011

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Results of SB-34A		<u></u>				
Client Sample ID: SB-34A Client Project ID: NCDOT Form Lab Sample ID: 31103290021-C Lab Project ID: 31103290	er Crumbly		Collection Da Received Da Matrix: Soll- Solids (%):	ate: 11/18/ Solid as di	2011 15:00	
Results by SW-846 8015C DRO			v te, eye til s bl. som end a tid sam s	uhikin hirun si si bashiri 193	State Countries and a state of the state	
Parameter Diesel Range Organics (DRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 8.00	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 12:14
Surrogates o-Terphenyl	70.0		40.0-140	%	1	11/24/2011 12:14
Batch Information	and the second second			v. 2012 o sanco s	na kranisti nizmus	
Analytical Batch: XGC1744 Analytical Method: SW-846 80156 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2011			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 3541 1/22/2011 (.: 32.25 g	07:20	
rint Date: 12/01/2011		···· ··· ··· ··· ··· ··· ··· ··· ··· ·	····		par ser e	N.C. Certification #
SGS North America Inc.		ness Drive, Wilmington, 1903 f 910:350:1557 ww				Member of SGS Group

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<u>JUJ</u>				
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 Da Received Da Matrix: Soil- Solids (%): {	te: 11/18/ Solid as dr	2011 15:0	
Results by SW-846 8015C GRO	<u></u>			
Parameter Result Qual	LOQ/CL	<u>Units</u>	<u>DF</u>	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	and the conservation of the second second			· · · · · · · = = · · · · · · · · · · ·
Analytical Batch: VGC1537 Analytical Method: SW-846 8015C GRO Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/28/2011 16:32	Prep Batch: VXX24 Prep Method: SW-f Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	346 5035 I/19/2011 1 6.504 g	3:24	

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Client Sample ID: SB-34B Client Project ID: NCDOT For Lab Sample ID: 3110329002 Lab Project ID: 31103290		y Property	Collection D Received Da Matrix: Soil Solids (%):	ate: 11/18/ -Solid as dr	2011 15:0	
Results by SW-846 8015C DR	o			5914-9662282-to4 <u></u>		Service States States Services
<u>Parameter</u>	Result	Qual	LOQ/CL	<u>Units</u>	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	fallfalt 11. 1 7 - 11. 11. 11. 11. 11.	ז אין געער גער איז	era de la companya d	ur alli vi rali		
Analytical Batch: XGC1744 Analytical Method: SW-846 80 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/20			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 3541 1/22/2011 (.: 32.19 g	07:20	

Print Date: 12/01/2011

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Results of SB-35A						
Client Sample ID: SB-35A Client Project ID: NCDOT For Lab Sample ID: 31103290023 Lab Project ID: 31103290	mer Crumbl	y Property	Collection Da Received Da Matrix: Soil- Solids (%): a	ite: 11/18/ Solid as di	2011 15:00	
Results by SW-846 8015C GR	D	· · · · · · · · · · · · · · · · · · ·	MAD ANG MAD BAL SHOPP THOUGH STATEMENT	<u> Talan kina maning ina n</u>		
Parameter Gasoline Range Organics (GRO)	<u>Result</u> 47.0	Qual	<u>LOQ/CL</u> 6.95	<u>Units</u> mg/kg	<u>DF</u> 2	Date Analyzed 11/29/2011 12:31
Surrogates 4-Bromofluorobenzene	98.8		70.0-130	%	2	11/29/2011 12:31
Batch Information			and a sub-state of the state of the sub-			u di suutu soo ee joo u a joo joo ayaa ku
Analytical Batch: VGC1540 Analytical Method: SW-846 891 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/29/201			Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 6	846 5035 1/19/2011 1 : 7 g	13:26	
Print Date: 12/01/2011		, for the set of set of the set of the	an a			N.C. Certification # 481
SGS North America Inc.	5500 Busin <u>1 910,350.</u>	ness Drive, Wilmington, 1 1903 f 910.350.1557 - ww	NC 28405 w.us.sgs.com	- -	1919900-1919-1919-1919-1919-1919	Member of SGS Group

Results of SB-35A Client Sample ID: SB-35A Client Project ID: NCDOT Fo Lab Sample ID: 3110329002 Lab Project ID: 31103290		y Property	Collection D Received D Matrix: Soil Solids (%):	ate: 11/18/ -Solid as dr	2011 15:0	
Results by SW-846 8015C D <u>Parameter</u> Diesel Range Organics (DRO)	RO <u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 7.38	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 13:11
u rrogates o-Terphenyl	81.2		40.0-140	%	1	11/24/2011 13:11
Batch Information		e i se seguire an esta in	and a second			
Analytical Batch: XGC1744 Analytical Method: SW-846 8 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: Prep Initial Wt./Vo Prep Extract Vol:	/-846 3541 11/22/2011 (I.: 32.98 g	97:20	
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Results of SB-35B Client Sample ID: SB-35B Client Project ID: NCDOT Form Lab Sample ID: 31103290024-4 Lab Project ID: 31103290	er Crumbly Property	Received Da	ate: 11/17/2011 ate: 11/18/2011 Solid as dry welg 82.80	15:00
Results by SW-846 8015C GRO		the addet to see the experimental address	****	
Parameter Gasoline Range Organics (GRO)	<u>Result Qual</u> 7270	<u>LOQ/CL</u> 1590	<u>Units</u> DF mg/kg500	
Surrogates			inging out	1,20,2011 10.10
4-Bromofluorobenzene	96.9	70.0-130	% 500	11/29/2011 13:48
Batch Information Analytical Batch: VGC1540 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/29/2011		Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 5	846 5035 1/19/2011 13:27 : 7.579 g	
Print Date: 12/01/2011 SGS North America Inc.	5500 Business Drive, Wilmington,	NC 28405	*** *** * * * * *	N.C. Certification # 481
JUJ NULUT AMERICA INC.	t 910.350.1903 f 910.350.1557 ww	w.us.sgs.com		Mambar of SGS Group

Client Sample ID: SB-35B Client Project ID: NCDOT Form Lab Sample ID: 31103290024-0	er Crumbly	rana and and and and and and and and and	Collection D Received Da Matrix: Soil-	ate: 11/18/. Solid as dr	2011 15:0		
Lab Project ID: 31103290			Solids (%):	82.80			
Results by SW-846 8015C DRO			Hanna an Stan an Ala an Ala an Ala an Ala an Ala an Ala an Ala an Ala				
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> 1360	<u>Qual</u>	<u>LOQ/CL</u> 73.8	<u>Units</u> mg/kg	<u>DF</u> 10	<u>Date Analyze</u> 11/30/2011	
Surrogates	1000		75.6	ng/kg	10	11/30/2011	4.41
o-Terphenyl	94.9		40.0-140	%	10	11/30/2011	4:41
Batch Information		· · · · · · · · · · · · ·			····	n a state tana ang ang ang ang ang ang ang ang ang	· ···
Analytical Batch: XGC1750 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/30/2011			Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 3541 1/22/2011 0 .: 32.7 g	17:20		
rint Date: 12/01/2011	112° -	1991 - San Constanting - San	en de la companya de la companya		•••••••••	N.C. Certificat	ion # 45
SGS North America Inc.		uess Drive, Wilmington, NC 1903 f 910,350,1557_www.j					

Results of SB-36A Client Sample ID: SB-36A Client Project ID: NCDOT Form Lab Sample ID: 31103290025-/ Lab Project ID: 31103290	er Crumbly		Collection D Received D Matrix: Soil Solids (%):	ate: 11/18, -Solid as d	/2011 15:0	
Results by SW-846 8015C GRO	·····				WY RATE Street start and	
<u>Parameter</u> Gasoline Range Organics (GRO)	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u> 3.22	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/28/2011 17
Surrogates 4-Bromofluorobenzene	102		70.0-130	%	1	11/28/2011 17:
Batch Information		Anna at an ann ann ann ann an	-19 - Rok Tresson was not na parabarana ba			Thintie at a second second
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: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 5035 1/19/2011 .: 7.533 g	13:30		

Print Date: 12/01/2011

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Results of SB-36A Client Sample ID: SB-36A Client Project ID: NCDOT Form Lab Sample ID: 31103290025-C Lab Project ID: 31103290		Collection D Received Da Matrix: Soil- Solids (%): 4	ite: 11/18/ Solid as dr	2011 15:00	
Results by SW-846 8015C DRO				s <u> </u>	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>Units</u>	<u>DF</u>	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	nan arma oo ah	ne e name war e bran staar an oordere deel an oordere de		a na na na ana	
Analytical Batch: XGC1759 Analytical Method: SW-846 80150 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/30/2011		Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	846 3541 1/29/2011 1 : 32.8 g	17:18	
rint Date: 12/01/2011	1 (m. 1971) 1 (m. 1972) 1 (m.		// a.rv		N.C. Certification # 4
SGS North America Inc.	5500 Business Drive, Wilmington, 1 910,350,1903 f 910,350,1557, ww				

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Results of SB-36B Client Sample ID: SB-36B Client Project ID: NCDOT Form Lab Sample ID: 31103290026-A Lab Project ID: 31103290	er Crumbly Property	Collection Da Received Da Matrix: Soil- Solids (%):	ite: 11/18/20 Solid as dry v	11 15:00	ан өн алтан ал
Results by SW-846 8015C GRO					
Parameter	<u>Result</u> <u>Qual</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	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 80154 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/29/2011		Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 5035 1/19/2011 13: : 6.769 g	31	x + + + + + + + + + + + + + + + + + + +
Print Date: 12/01/2011	a se a contra transmissión de la contra contra contra de la	en an an ann an an an an an an an an		···. •• ···.	N.C. Certification # 481
SGS North America Inc.	5500 Business Drive, Wilmington, No t 910.350.1903 f 910.350.1557 www	C 28405 .us.sqs.com			
	1 WWW	<u>99999996000</u>			Member of SGS Group

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Results of SB-36B Client Sample ID: SB-36B Client Project ID: NCDOT For Lab Sample ID: 31103290026 Lab Project ID: 31103290	ner Crumbly		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)		<u></u>		······		
Parameter Diesel Range Organics (DRO)	<u>Result</u> 45.2	<u>Qual</u>	<u>LOQ/CL</u> 8.13	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 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-846 801 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/201			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 3541 1/22/2011 0 .: 32.16 g	07:20		
Print Date: 12/01/2011	in a terretakin tara a	a an an tar in a far in seac	nag Meripana ang pang birtan ang	·	···· - <u>-</u> ····,····	N.C. Certification # 481	
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Results of SB-37 Client Sample ID: SB-37	the second second		Collection Da				
Client Project ID: NCDOT Forme Lab Sample ID: 31103290027-A Lab Project ID: 31103290	r Crumbly	Property	Received Date: 11/18/2011 15:00 Matrix: Soil-Solid as dry weight Solids (%): 76.80				
Results by SW-846 8015C GRO	مەمىرىيە مەر يەرىيە مەر ب					Orthoff Markets and Annual	
	<u>Result</u>	Qual	LOQ/CL	<u>Units</u>	DF 5	Date Analyzed	
000,,,,	104		19.8	mg/kg	5	11/29/2011 13:2	
urrogates 4-Bromofluorobenzene	102		70.0-130	%	5	11/29/2011 13:2	
Batch Information	ander and a standard	5-1 - 5-1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1 11 11 1 1			n ang manang mang mang mang manang	
Analytical Batch: VGC1540 Analytical Method: SW-846 8015C Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/29/2011			Prep Batch: VXX24 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 5035 1/19/2011 1 : 6.571 g	13:32		
int Date: 12/01/2011		ess Drive, Wilmington, N		1000 000 () · · · · · · · · · · · · · · · · · ·		N.C. Certification f	

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Results of SB-37 Client Sample ID: SB-37 Client Project ID: NCDOT Forn Lab Sample ID: 31103290027- Lab Project ID: 31103290	ner Crumbl		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			11 mar 11 mar 10 mar 10 Marine				
<u>Parameter</u> Diesel Range Organics (DRO)	<u>Result</u> ND	<u>Qual</u>	<u>LOQ/CL</u> 8.00	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/24/2011 16:55	
o -Terphenyl	80.7		40.0-140	%	1	11/24/2011 16:55	
Batch Information	and a start of the	ەر يۇرىيىنى تەركىيىنى بىرىكىيىنى بەر يەركىيە يەركىيى	te na venera a venera seria te este en este en el soto se a soto se el este se el este se el este se el este s	يرسد المعام ولكرار المعاد	ter states and to		
Analytical Batch: XGC1744 Analytical Method: SW-846 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2011			Prep Batch: XXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 3541 1/22/2011 (.: 32.57 g	97:20		
nt Date: 12/01/2011	<u>-</u> .		a nan an an an tao an an an an	····. =····		N.C. Certification # /	
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Results of SB-38A				MCGANING THE AVER	6467-8-4 W. 577-7408-9-6 (####	
Client Sample ID: SB-38A Client Project ID: NCDOT Forme Lab Sample ID: 31103290028-A Lab Project ID: 31103290	er Crumbly		Collection Date: 11/17/2011 10:40 Received Date: 11/18/2011 15:00 Matrix: Soll-Solid as dry weight Sollds (%): 74.80			
Results by SW-846 8015C GRO					••• • ••• • •• ••	
	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3.86	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/28/2011_18:43
u rrogates 4-Bromofluorobenzene	101		70.0-130	%	1	11/28/2011 18:43
Batch Information Analytical Batch: VGC1537 Analytical Method: SW-846 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/28/2011		an a grann ar an an an an an	Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: {	-846 5035 1/19/2011 1 .: 6.928 g	13:33	, 99°° № 30° • • 171 - 200 - 1720 -
int Date: 12/01/2011		· · · · · · · · · · · · · · · · · · ·	·			N.C. Certification #
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Calent Sample ID: SB-36A Clent Sample ID: SB-36A Clent Sample ID: S1103290 Collection Date: 11/17/2011 10:40 Received Date: 11/17/2011 11/24/2011 17:2 Batch Information Analytical Date/Time: 11/24/2011 17:2 Prep Batch: XXX2015 Prep Millind: WM-448 0316C DR0 Prep DateTime: 11/24/2011 17:2 Prep DateTime: 11/24/2011 17:2 Prep DateTime: 11/24/2011 17:2 Prep DateTime: 11/24/2011 17:2 Prep Extract Vol: 10 mL	SGS							
Control Control S LOQ/CL Units DE Date Analyzed Diesel Range Organics (DRO) ND 8.24 mg/kg 1 11/24/2011 17.2 Urrogates - - - 40.0-140 % 1 11/24/2011 17.2 Batch Information - - - - - 11/24/2011 17.2 Analytical Methic: SV-448 8015C DRO Prep Batch: XXX2015 Prep Methica: NV-448 3341 Prep Date Analyzed Instrument: CG 66 Prep Date Control Prep Date Control 32.45 g Prep Date Control 32.45 g Analytical Date/Time: 11/24/2011 17.23 Prep Extract Vol: 10 mL 10.0 10.0 10.0 10.0 10.0 10.0 11.0 10.0	Client Sample ID: SB-38A Client Project ID: NCDOT Forme	er Crumbly		Received Date: 11/18/2011 15:00 Matrix: Soil-Solid as dry weight				
Diesel Range Organices (DRO) ND 8.24 ng/kg 1 11/24/2011 17:3 c-Terphenyl 78.5 40.0-140 % 1 11/24/2011 17:3 Batch Information Analytical Batch: XXX2015 Analytical Batch: XXX2015 Analytical Batch: XXX2015 Prep Batch: XXX2015 Analytical Date: TXF Prep Date: SW-846 3541 Prep Date/Time: 11/22/2011 07:20 Prep Date/Time: 11/22/2011 07:20 Prep Date/Time: 11/22/2011 07:20 Analytical Date/Time: 11/22/2011 17:23 Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL	Results by SW-846 8015C DRO		·····					
urrogates c-Terphenyl 76.5 40.0-140 % 1 11/24/2011 17/3 Batch Information Analytical Batch: XXX2015 Prep Batch: XXX2015 Prep Datch: XXX2015 Analytical Batch: XXX2017 Prep Datch: XXX2015 Prep Datch: XXX2015 Prep Datch: XXX2015 Analytical Date/Time: 11/22/2011 07:20 Prep Datch: XXX2015 Prep Datch: XXX2015 Prep Datch: XXX2015 Analytical Date/Time: 11/22/2011 07:20 Prep Datch: XXX2015 Prep Datch: XXX45 g Prep Datch: XXX45 g Analytical Date/Time: 11/22/2011 07:20 Prep Datch: XXX460 X00: 10 mL Prep Datch: XXX45 g Analytical Date/Time: 11/22/2011 07:20 Prep Datch: XXX460 X00: 10 mL Prep Datch: XXX460 X00: 10 mL	<u>Parameter</u>	<u>Result</u>	Qual	LOQ/CL	<u>Units</u>	<u>DF</u>	Date Analyzed	
e-Terphenyl 76.5 40.0-140 % 1 11/24/2011 17:3 Batch Information Analytical Batch: XSC1744 Analytical Batch: XSC1744 Analytical Batch: XSC1744 Analytical Method: SW-348 8016C DRO Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2011 17:23 Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL	Diesel Range Organics (DRO)	ND		8.24	mg/kg	1	11/24/2011 17:23	
Batch Information Analytical Method: SW-348 8015C DRO Instrument: GC6 Analytical Date/Time: 11/24/2011 17:23 Prep Extract Vol: 10 mL	urrogates							
Analytical Batch: XSC1744 Analytical Mothod: SW-848 8015C DRO Instrument: CGG Analysis: DTF Analytical Date/Time: 11/24/2011 17:23 Analytical Date/Time: 11/24/2011 17:23 Prep Extract Vol: 10 mL Prep Extract Vol: 10 mL N.C. Certification: 1500 Business Drive, Wilmington, NC 28405	o-Terphenyl	76.5		40.0-140	%	1	11/24/2011 17:23	
SGS North America Loc 5500 Business Drive, Wilmington, NC 28405	Analytical Batch: XGC1744 Analytical Batch: XGC1744 Analytical Method: SW-846 80150 Instrument: GC6 Analyst: DTF		992 999	Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol.	846 3541 1/22/2011(.: 32.45 g	07:20		
SCS North America Loc 5500 Business Drive, Wilmington, NC 28405								
SGS Neeth America Lac 5500 Business Drive, Wilmington, NC 28405								
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SGS North America Loc 5500 Business Drive, Wilmington, NC 28405								
SGS North America Loc 5500 Business Drive, Wilmington, NC 28405	nt Date: 12/01/2011				en clem and e com		N.C. Certification #	

Client Sample ID: SB-38B Client Project ID: NCDOT Forme Lab Sample ID: 31103290029-A Lab Project ID: 31103290	er Crumbly		Collection Da Received Da Matrix: Soll- Solids (%): 1	ite: 11/18/ Solid as di	2011 15:00	
Results by SW-846 8015C GRO				alana a managara		lað lið þanna skildar som s
	<u>Result</u>	Qual	LOQ/CL	<u>Units</u>	<u>DF</u>	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 80150 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/28/2011		en je na slovenske se na slovenske se na slovenske se slovenske s	Prep Batch: VXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 5	846 5035 1/19/2011 : 6.996 g	13:34	a Marana (anganta anganta angan
rint Date: 12/01/2011			a , anan an gang , an anan a sa		u.u. 1979. <u>u</u> .u. 1979.	N.C. Certification #
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Results of SB-38B Client Sample ID: SB-38B Client Project ID: NCDOT Form Lab Sample ID: 31103290029-0 Lab Project ID: 31103290	er Crumbl		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	·····				131-1		
Parameter Diesel Range Organics (DRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 8,19	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 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 8015 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/2011			Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 4	846 3541 1/22/2011 (.: 32.14 g	97:20	а и цана, кола на около и около и кака и	
Print Date: 12/01/2011			na sura na sina na sina na sina si katu	ant fa na warm	n an tha an t	N.C. Certification #	
SGS North America Inc.	5500 Busi t 910.350	iness Drive, Wilmington, N 1903 f 910,350,1557 www.	28405 us.sgs.com			Member of SGS Group	

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Client Sample ID: SB-39A	er Crumbly	nt Sample ID: SB-39A nt Project ID: NCDOT Former Crumbly Property Sample ID: 31103290030-A		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			nara na ya kutu wakaza na nitarika ya kutu a	in a standard and a standard		and the second		
<u>Parameter</u> Gasoline Range Organics (GRO)	<u>Result</u> ND	Qual	<u>LOQ/CL</u> 3.62	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/29/2011 14:41		
urrogates 4-Bromofluorobenzene	101		70.0-130	%	1	11/29/2011 14:41		
Batch Information Analytical Batch: VGC1540 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY Analytical Date/Time: 11/29/2011		in ten ten generation de spontentes	Prep Batch: VXX2 Prep Method: SW Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol:	-846 5035 1/19/2011 1 .: 6.63 g	3:35	a tala a sana a san		
			r top Enddor ton					
	. .							

sults of SB-39A ent Sample ID: SB-39A ent Project ID: NCDOT Former Crumbly Property o Sample ID: 31103290030-C o Project ID: 31103290		Received Date Matrix: Soil-S	Collection Date: 11/17/2011 Received Date: 11/18/2011 Matrix: Soil-Solid as dry weig Solids (%): 83,40			
Results by SW-846 8015C D						
Parameter	Result Qual	LOQ/CL	Units	DE	Date Analyzed	
Diesel Range Organics (DRO)		7.40	mg/kg	<u>pr.</u> 1	11/24/2011 18:20	
urrogates						
-Terphenyl	70.8	40.0-140	%	1	11/24/2011 18:20	
Batch Information	. مەرەپ ئىستىرىمىرىمىرىم بىرى بىلار بىرىكىيىرى بىرىكىيىرى بىرى بىرى	a active a success and the second of the second		an a	naan taan ka si ka sa ka sa	
Analytical Batch: XGC1744 Analytical Method: SW-846 t Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/		Prep Batch: XXX201 Prep Method: SW-8 Prep Date/Time: 11/ Prep Initial Wt./Vol.; Prep Extract Vol: 10	46 3541 22/2011 0 32.41 g	7:20		

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Results of SB-39B Client Sample ID: SB-39B Client Project ID: NCDOT Form Lab Sample ID: 31103290031-, Lab Project ID: 31103290	er Crumbly Property	Received D Matrix: Soil	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 Gasoline Range Organics (GRO)	<u>Result</u> <u>Qual</u>	LOQ/CL 3.85	<u>Units</u> mg/kg	<u>DF</u> 1	<u>Date Analyzed</u> 11/29/2011 15:07		
urrogates I-Bromofluorobenzene	104	70.0-130	%	1	11/29/2011 15:07		
Batch Information		n a long war i si kolong song atawara ta	ana a sa ang masagénanan		1999 - 1999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -		
Analytical Batch: VGC1540 Analytical Batch: VGC1540 Analytical Method: SW-846 8015 Instrument: GC7 Analyst: MDY		Prep Batch: VXX Prep Method: SW Prep Date/Time: Prep Initial Wt./Vo	/-846 5035 11/19/2011 1	13:36			
Analytical Date/Time: 11/29/2011	1 15:07	Prep Extract Vol:					
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						
Analytical Date/Time: 11/29/201	1 15:07						

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Results of SB-39B Client Sample ID: SB-39B Client Project ID: NCDOT Form Lab Sample ID: 31103290031- Lab Project ID: 31103290	ner Crumbly		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 DRC)						
Parameter	<u>Result</u>	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 8019 Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/24/201		an an the state of the second	Prep Batch: XXX2 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol Prep Extract Vol: 1	846 3541 1/22/2011 0 .: 32.85 g	07:20	- 99 ** 282.92.1 **2.5 **2.0* **2.92.00* **2.90*****2.*2	
Print Date: 12/01/2011	nako artzu uteraturua	aan ay ahaa ahaa ahaa ahaa ahaa ahaa aha		41-41-0 C	5	N.C. Certification # 48	
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-Results of MW-1

SG:

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

arameter	<u>Result</u> <u>Qual</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Date Analyzed
1,1,2-Tetrachloroethane	ND	1.00	ug/L	1	11/22/2011 18:1
1,1-Trichloroethane	ND	1.00	ug/L	1	11/22/2011 18:1
i,2,2-Tetrachloroethane	ND	1.00	ug/L	1	11/22/2011 18:1
1,2-Trichloroethane	ND	1.00	ug/L	1	11/22/2011 18:1
I-Dichloroethane	ND	1.00	ug/L	1	11/22/2011 18:1
1-Dichloroethene	ND	1.00	ug/L	1	11/22/2011 18:1
1-Dichioropropene	ND	1.00	ug/L	1	11/22/2011 18:1
2,3-Trichlorobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
2,3-Trichloropropane	ND	1,00	ug/L	1	11/22/2011 18:1
2,4-Trichlorobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
2,4-Trimethylbenzene	6.57	1.00	ug/L	1	11/22/2011 18:1
2-Dibromo-3-chloropropane	ND	5.00	ug/L	1	11/22/2011 18:1
2-Dibromoethane	ND	1.00	ug/L	1	11/22/2011 18:1
2-Dichlorobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
2-Dichloroethane	ND	1.00	ug/L	1	11/22/2011 18:1
2-Dichloropropane	ND	1.00	ug/L	1	11/22/2011 18:1
3,5-Trimethylbenzene	3.12	1.00	ug/L	1	11/22/2011 18:1
3-Dichlorobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
3-Dichloropropane	ND	1.00	ug/L	1	11/22/2011 18:1
4-Dichlorobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
2-Dichloropropane	ND	1.00	ug/L	1	11/22/2011 18:1
Butanone	ND	25.0	ug/L	1	11/22/2011 18:1
Chlorotoluene	ND	1.00	ug/L	1	11/22/2011 18:1
Hexanone	ND	5.00	ug/L	1	11/22/2011 18:1
-Chlorotoluene	ND	1.00	ug/L	1	11/22/2011 18:1
-Isopropyltoluene	ND	1.00	ug/L	1	11/22/2011 18:1
Methyl-2-pentanone	ND	5.00	ug/L	1	11/22/2011 18:1
cetone	ND	25.0	ug/L	1	11/22/2011 18:1
enzene	ND	1.00	ug/L	1	11/22/2011 18:1
romobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
romochloromethane	ND	1.00	ug/L	1	11/22/2011 18:1
romodichloromethane	ND	1.00	ug/L	1	11/22/2011 18:1
romoform	ND	1.00	ug/L	1	11/22/2011 18:1
romomethane	ND	1.00	ug/L	1	11/22/2011 18:1
Butylbenzene	2.13	1.00	ug/L	1	11/22/2011 18:1
arbon disulfide	ND	1.00	ug/L	1	11/22/2011 18:1
arbon tetrachloride	ND	1.00	ug/L	1	11/22/2011 18:1
lorobenzene	ND	1.00	ug/L	1	11/22/2011 18:1
nioroethane	ND	1.00	ug/L	1	11/22/2011 18:1
hloroform	ND	1.00	ug/L	1	11/22/2011 18:1
hloromethane	ND	1.00	ug/L	1	11/22/2011 18:1
ibromochloromethane	ND	1.00	ug/L	1	11/22/2011 18:1
bromomethane	ND	1.00	ug/L	1	11/22/2011 18:1

Print Date: 12/01/2011

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Lab Project ID: 31103290 Results by SW-846 8260B 20202010 gott growthe NEW COMPANY CONTRACTOR LOQ/CL <u>Units</u> DF Parameter <u>Result</u> <u>Qual</u> Date Analyzed Dichlorodifluoromethane ND 5.00ug/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 1.00 ug/L 11/22/2011 18:12 Methyl iodide ND 1.00 1 11/22/2011 18:12 ug/L Methylene chloride ND 5.00 ug/L 1 11/22/2011 18:12 Naphthalene 7 22 1.00 11/22/2011 18:12 ug/L 1 Styrene ND 1.00 ug/L 1 11/22/2011 18:12 Tetrachloroethene ND 1.00 ua/L 1 11/22/2011 18:12 Toluene ND 1.00 11/22/2011 18:12 ug/L 1 Trichloroethese ND ug/L 1.00 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 1 11/22/2011 18:12 ug/L 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 1.00 1.15 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 Prep Batch: VXX2409 Analytical Method: SW-846 8260B Prep Method: SW-846 5030B Instrument: MSD2 Prep Date/Time: 11/22/2011 10:52 Analyst: BWS Prep Initial Wt./Vol.: 40 mL Analytical Date/Time: 11/22/2011 18:12 Prep Extract Vol: 40 mL Print Date: 12/01/2011 N.C. Certification # 481 5500 Business Drive, Wilmington, NC 28405 SGS North America Inc. 910.350.1903 f 910.350.1557 www.us.sgs.com Member of SGS Group

Client Sample ID: MW-1 Client Project ID: NCDOT Former Crumbly Property Lab Sample ID: 31103290032-B

Collection Date: 11/17/2011 12:15 Received Date: 11/18/2011 15:00 Matrix: Water



Results of MW-1

Results of MW-1 Client Sample ID: MW-1 Client Project ID: NCDOT For Lab Sample ID: 31103290032 Lab Project ID: 31103290	mer Crumbly Property	Collection D Received Da Matrix: Wat	ate: 11/18		
Results by MADEP VPH					
elanaven anders novies provins provinsion Parameter			Units	DF	Data Analyzad
C5-C8 Aliphatics	<u>Result Qual</u> 306	<u>LOQ/CL</u>		<u>Dr</u> 1	Date Analyzed
C9-C10 Aromatics	103	100 100	ug/L ug/L	1	11/22/2011 13:0 11/22/2011 13:0
09-C12 Aliphatics	156	100	ug/L	1	11/22/2011 13:0
	100	100	ugi L	I	11/22/2011 10:0
irrogates					
ID - 4-Bromofluorobenzene	110	70.0-130	%	1	11/22/2011 13:0
ID - 4-Bromofluorobenzene	99.0	. 70.0-130	%	1	11/22/2011 13:0
atch information	a water and the second seco				
an a the a sector of the state of the sector of					
Analytical Batch: VGC1533		Prep Batch: VXX2			
Analytical Method: MADEP VP	H	Prep Method: SW			
Instrument: GC4 Analyst: MDY		Prep Date/Time: 1		14:39	
Analysic MDT Analytical Date/Time: 11/22/20	11 13-06	Prep Initial Wt./Vol Prep Extract Vol:			
		· · · · · · · · · · · · · · · · · · ·			

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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

arameter	<u>Result Qual</u>	LOQ/CL	<u>Units</u>	DF	Date Analyzed
2,4-Trichlorobenzene	ND	5,20	ug/L	1	11/21/2011 20:03
2-Dichlorobenzene	ND	5.20	ug/L	1	11/21/2011 20:03
3-Dichlorobenzene	ND	5.20	ug/L	1	11/21/2011 20:03
4-Dichlorobenzene	ND	5.20	ug/L	1	11/21/2011 20:0
4,5-Trichlorophenol	ND	5.20	ug/L	1	11/21/2011 20:0
4,6-Trichlorophenol	ND	5.20	ug/L	1	11/21/2011 20:0
4-Dichlorophenol	ND	5,20	ug/L	1	11/21/2011 20:0
4-Dinitrophenol	ND	26.0	ug/L	1	11/21/2011 20:0
4-Dinitrotoluene	ND	5,20	ug/L	1	11/21/2011 20:0
6-Dinitrotoluene	ND	5.20	ug/L	1	11/21/2011 20:0
Chloronaphthalene	ND	5.20	ug/L	1	11/21/2011 20:0
Chloropheno!	ND	5.20	ug/L	1	11/21/2011 20:0
Methylnaphthalene	6.08	5.20	ug/L	1	11/21/2011 20:0
Methylphenol	ND	5.20	ug/L	1	11/21/2011 20:0
Nitroaniline	ND	5.20	ug/L	1	11/21/2011 20:0
Nitrophenol	ND	5.20	ug/L	1	11/21/2011 20:0
and/or 4-Methylphenol	ND	5.20	ug/L	1	11/21/2011 20:0
3'-Dichlorobenzidine	ND	10.4	ug/L	1	11/21/2011 20:0
Nitroaniline	ND	26.0	ug/L	1	11/21/2011 20:0
6-Dinitro-2-methylphenol	ND	26.0	ug/L	1	11/21/2011 20:0
Chloro-3-methylphenol	ND	5.20	ug/L	1	11/21/2011 20:0
Chloroaniline	ND	26.0	ug/L	1	11/21/2011 20:0
Chlorophenyl phenyl ether	ND	5.20	ug/L	1	11/21/2011 20:0
cenaphthene	ND	5.20	ug/L	1	11/21/2011 20:0
cenaphthylene	ND	5.20	ug/L	1	11/21/2011 20:0
nthracene	ND	5.20	ug/L	1	11/21/2011 20:0
enzo(a)anthracene	ND	5.20	ug/L	1	11/21/2011 20:0
enzo(a)pyrene	ND	5.20	ug/L	1	11/21/2011 20:0
enzo(b)fluoranthene	ND	5.20	ug/L	1	11/21/2011 20:0
enzo(g,h,i)perylene	ND	5.20	ug/L	1	11/21/2011 20:0
enzo(k)fluoranthene	ND	5.20	ug/L	1	11/21/2011 20:0
enzoic acid	ND	5.20	ug/L	1	11/21/2011 20:0
s(2-Chloroethoxy)methane	ND	5.20	ug/L	1	11/21/2011 20:0
s(2-Chloroethyl)ether	ND	5,20	ug/L	1	11/21/2011 20:0
s(2-Chloroisopropyl)ether	ND	5.20	ug/L	1	11/21/2011 20:0
s(2-Ethylhexyl)phthalate	ND	5.20	ug/L	1	11/21/2011 20:0
Bromophenyl phenyl ether	ND	5.20	ug/L	1	11/21/2011 20:0
utyl benzyl phthalate	ND	5.20	ug/L	1	11/21/2011 20:0
hrysene	ND	5.20	ug/L	1	11/21/2011 20:0
-n-butyl phthalate	ND	5.20	ug/L	1	11/21/2011 20:0
-n-octyl phthalate	ND	5.20	ug/L	1	11/21/2011 20:0
benz(a,h)anthracene	ND	5.20	ug/L	1	11/21/2011 20:07
benzofuran	ND	5.20	ug/L ug/L	1	11/21/2011 20:07

Print Date: 12/01/2011

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SG:

Results of MW-1

. there is a con 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

Result ND ND ND ND ND ND ND	<u>Qual</u>	LOQ/CL 5.20 5.20 5.20 5.20 5.20 5.20 5.20 5.20	<u>Units</u> ug/L ug/L ug/L ug/L ug/L ug/L	<u>DF</u> 1 1 1 1	<u>Date Analyzed</u> 11/21/2011 20:07 11/21/2011 20:07 11/21/2011 20:07 11/21/2011 20:07 11/21/2011 20:07
ND ND ND ND ND ND		5.20 5.20 5.20 5.20 5.20 5.20	ug/L ug/L ug/L ug/L	1 1 1 1	11/21/2011 20:07 11/21/2011 20:07 11/21/2011 20:07
ND ND ND ND ND		5.20 5.20 5.20 5.20	ug/L ug/L ug/L	1 1 1	11/21/2011 20:07 11/21/2011 20:07
ND ND ND ND		5.20 5.20 5.20	ug/L ug/L	1 1	11/21/2011 20:07
ND ND ND		5.20 5.20	ug/L	1	
ND		5.20	-		
ND				1	11/21/2011 20:07
		0.20	ug/L	1	11/21/2011 20:07
		5.20	ug/L	1	11/21/2011 20:07
ND		10.4	ug/L	1	11/21/2011 20:07
ND		5.20	ug/L	1	11/21/2011 20:07
ND		5.20	ug/L	1	11/21/2011 20:07
ND		5.20	ug/L	1	11/21/2011 20:07
7.95		5.20	ug/L	1	11/21/2011 20:07
ND		26,0	ug/L	1	11/21/2011 20:07
ND		5.20	ug/L	1	11/21/2011 20:07
ND		26.0	ug/L	1	11/21/2011 20:07
ND		26.0	ug/L	1	11/21/2011 20:07
ND		5.20	ug/L	1	11/21/2011 20:07
ND		5.20		1	11/21/2011 20:07
ND		5.20	-	1	11/21/2011 20:07
ND		5.20	ug/L	1	11/21/2011 20:07
128		20 3-152	%	1	11/21/2011 20:07
102				-1	11/21/2011 20:07
93.0		33.1-118	%	1	11/21/2011 20:07
105		46.0-118	%	1	11/21/2011 20:07
101		49.0-120	%	1	11/21/2011 20:07
111		22.1-142	%	1	11/21/2011 20:07
	. 10) элтгээдэг (хоран төст гар түүсэг (ж.)	771 1783 21783 24 - v 131 ev., 24 Mart 144 - v. e. e. 1411 3 - v. e. 251	e yr Roll yn ei yn ei ei ei ei yr roll yn ei	·····	
		Dron Datah. VVV4	306		
'0D		•			
~ **				14:56	
		-			
11 20:07		-			
	ND ND 7.95 ND ND ND ND ND ND 128 102 93.0 105 101 111	ND ND 7.95 ND ND ND ND ND ND ND ND 128 102 93.0 105 101 111	ND 5.20 ND 5.20 ND 26.0 ND 26.0 ND 26.0 ND 26.0 ND 26.0 ND 5.20 128 29.3-152 102 50.0-107 93.0 33.1-118 105 46.0-118 101 49.0-120 111 22.1-142 YOD Prep Batch: XXX19 Prep Date/Time: 1 Prep Initial Wt./Vol.	ND 5.20 ug/L ND 5.20 ug/L 7.95 5.20 ug/L ND 26.0 ug/L ND 5.20 ug/L 102 50.0-107 % 103 49.0-120 % 111 <td>ND 5.20 ug/L 1 ND 5.20 ug/L 1 7.95 5.20 ug/L 1 ND 26.0 ug/L 1 ND 5.20 ug/L 1 ND 26.0 ug/L 1 ND 5.20 ug/L 1 102 50.0-107 % 1 103.0 33.1-118 % 1 104 49.0-120 % 1 111 22.1-142 % 1 70D Prep Metho</td>	ND 5.20 ug/L 1 ND 5.20 ug/L 1 7.95 5.20 ug/L 1 ND 26.0 ug/L 1 ND 5.20 ug/L 1 ND 26.0 ug/L 1 ND 5.20 ug/L 1 102 50.0-107 % 1 103.0 33.1-118 % 1 104 49.0-120 % 1 111 22.1-142 % 1 70D Prep Metho

Client Project ID: NCDOT Fo ab Sample ID: 3110329003 ab Project ID: 31103290	ormer Crumbly	vaa≪erenense∛ v Property	Collection D Received Da Matrix: Wate	ate: 1 1/1 8		
Results by MADEP EPH	n an					
and the second	<u>R</u> esult	Qual	LOQ/CL	<u>Units</u>	DE	Data Applyzad
11-C22 Aromatics	ND		0.0953	mg/L	1	<u>Date Analyzed</u> 11/29/2011 1:03
19-C36 Aliphatics	ND		0.0448	mg/L	1	11/28/2011 0:35
9-C18 Aliphatics	ND		0.0336	mg/L	1	11/28/2011 0:35
rrogates				Ũ		
-Bromonaphthalene	120		40.0-140	%	1	11/29/2011 1:03
-Fluorobiphenyl	108		40.0-140	%	1	11/29/2011 1:03
-Tricosane	105		40.0-140	%	1	11/28/2011 0:35
-Terphenyl	96.0		40.0-140	%	1	11/29/2011 1:03
Analytical Batch: XGC1748 Analytical Batch: XGC1748 Analytical Method: MADEP EF Instrument: GC6 Analyst: DTF Analytical Date/Time: 11/29/20		, fiù orner re≕tat karrinake≱	Prep Batch: XXX20 Prep Method: SW- Prep Date/Time: 1 Prep Initial Wt./Vol. Prep Extract Vol: 5	846 3520C 1/27/2011 (: 892 mL	09:36	ч ^{на} 1953 г. и Ланин от д ете, <u>да Са</u> ба <u>т</u> ија де цанана се се

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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

Parameter	<u>Result</u>	Qual	LOQ/CL	<u>Units</u>	DF	Date Analyzed
,1,1,2-Tetrachloroethane	ND		1.00	ug/L	1	11/22/2011 16:5
,1,1-Trichloroethane	ND		1.00	ug/L	1	11/22/2011 16:5
,1,2,2-Tetrachloroethane	ND		1.00	ug/L	1	11/22/2011 16:5:
,1,2-Trichloroethane	ND		1.00	ug/L	1	11/22/2011 16:59
,1-Dichloroethane	ND		1.00	ug/L	1	11/22/2011 16:5
,1-Dichloroethene	ND		1.00	ug/L	1	11/22/2011 16:5
,1-Dichloropropene	ND		1,00	ug/L	1	11/22/2011 16:5
,2,3-Trichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:5
,2,3-Trichloropropane	ND		1.00	ug/L	1	11/22/2011 16:5
,2,4-Trichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:5
,2,4-Trimethylbenzene	ND		1.00	ug/L	1	11/22/2011 16:5
,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	11/22/2011 16:5
,2-Dibromoethane	ND		1.00	ug/L	1	11/22/2011 16:5
,2-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:5
,2-Dichloroethane	ND		1.00	ug/L	1	11/22/2011 16:5
,2-Dichloropropane	ND		1,00	ug/L	1	11/22/2011 16:5
,3,5-Trimethylbenzene	ND		1.00	ug/L	1	1 1 /22/2011 16:5
,3-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:5
,3-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 16:5
4-Dichlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:5
,2-Dichloropropane	ND		1.00	ug/L	1	11/22/2011 16:5
Butanone	ND		25.0	ug/L	<u>1</u>	11/22/2011 16:5
-Chlorotoluene	ND		1.00	ug/L	1	11/22/2011 16:5
Hexanone	ND		5.00	ug/L	1	11/22/2011 16:5
-Chlorotoluene	ND		1.00	ug/L	1	11/22/2011 16:55
-Isopropyltoluene	ND		1.00	ug/L	1	11/22/2011 16:5
-Methyl-2-pentanone	ND		5.00	ug/L	1	11/22/2011 16:5
cetone	ND		25.0	ug/L	1	11/22/2011 16:5
enzene	ND		1.00	ug/L	1	11/22/2011 16:5
romobenzene	ND		1.00	ug/L	1	11/22/2011 16:5
romochloromethane	ND		1.00	ug/L	1	11/22/2011 16:55
romodichloromethane	ND		1.00	ug/L	1	11/22/2011 16:5
romoform	ND		1.00	ug/L	1	11/22/2011 16:5
romomethane	ND		1.00	ug/L	1	11/22/2011 16:5
Butylbenzene	ND		1.00	ug/L	1	11/22/2011 16:5
arbon disulfide	ND		1.00	ug/L	1	11/22/2011 16:55
arbon tetrachloride	ND		1.00	ug/L	1	11/22/2011 16:5
hlorobenzene	ND		1.00	ug/L	1	11/22/2011 16:55
hloroethane	ND		1.00	ug/L	1	11/22/2011 16:5
hloroform	ND		1,00	ug/L	1	11/22/2011 16:55
hloromethane	ND		1.00	ug/L	1	11/22/2011 16:55
ibromochloromethane	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

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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

	<u>Result Qual</u>	LOQ/CL	<u>Units</u>	<u>DF</u>	Date Analyzed
Dichlorodifluoromethane	ND	5,00	ug/L	1	11/22/2011 16:55
sis-1,3-Dichloropropene	ND	1.00	ug/L	1	11/22/2011 16:55
rans-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 lodide	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
urrogates					
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	ne au control en existente control o se retrauraturaturaturat	איניגע עבונים ומינייני איישני אני בין ג' מיניגע דבפיר ובאנע איייי איניג אייני איני	z grentization navos	uter wert is the set of dur	N 1 1.121 / 2000 (KD 1 1.1402 (KT 2 TZ 10) (KT 2 TZ 10) (TZ 10)
Analytical Batch: VMS1722		Prep Batch: VXX2	409		
Analytical Method: SW-846 82	60B	Prep Method: SW			
Instrument: MSD2		Prep Date/Time: 1		10:52	
		Prep Initial Wt./Vol			
Analyst: BWS Analytical Date/Time: 11/22/2011 16:55		Prep Extract Vol:			



Results of Trip Blanks (Not on COC) Client Sample ID: Trip Blanks (Not on COC) Collection Date: 11/17/2011 00:00 Client Project ID: NCDOT Former Crumbly Property Received Date: 11/18/2011 15:00 Lab Sample ID: 31103290034-B Matrix: Water Lab Project ID: 31103290 Results by MADEP VPH NEW LET TRANSPORT 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 % 11/22/2011 11:56 1 PID - 4-Bromofluorobenzene 97.0 70.0-130 % 11/22/2011 11:56 1 **Batch Information** Analytical Batch: VGC1533 Prep Batch: VXX2405 Analytical Method: MADEP VPH Prep Method: SW-846 5030B Instrument: GC4 Prep Date/Time: 11/22/2011 14:39 Analyst: MDY Prep Initial Wt./Vol.: 40 mL Analytical Date/Time: 11/22/2011 11:56 Prep Extract Vol: 40 mL

Print Date: 12/01/2011

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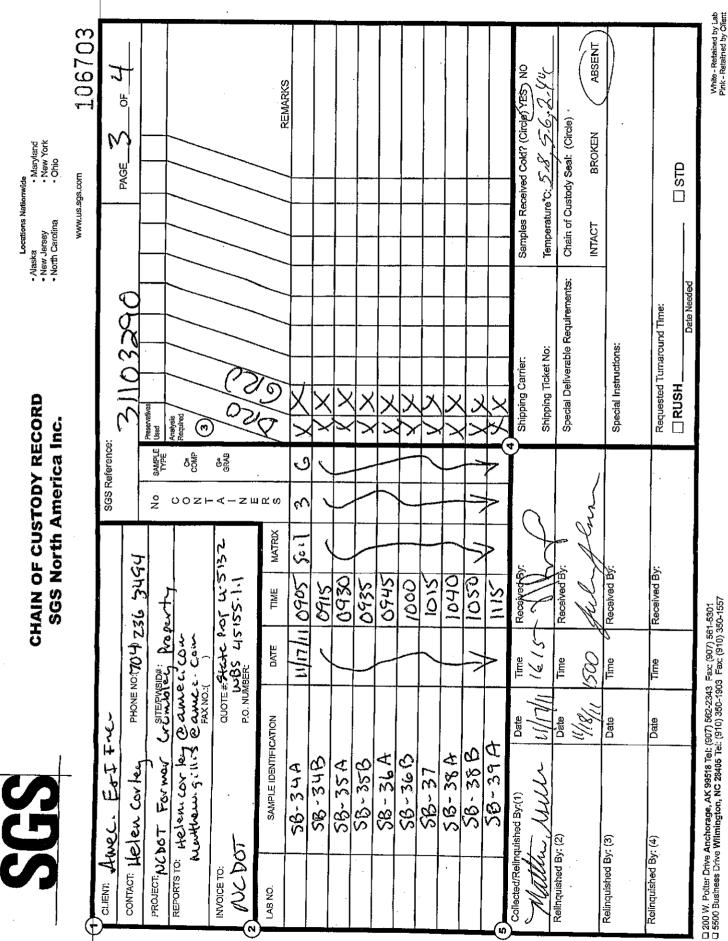
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CLIENT: AMEC	ec EtI, Inc					SGS R	sference:								
NTACT: He	CONTACT: Helen Cortey	PHONE NO	PHONE NO:(JOH) 236	236 349	१५	-	3110	103	200				PAGE	0F _	\mathcal{H}
DIECT: UC D	oct Former Crumh	s EEPwa	Roert	5		No	SAMPLE L	Preservatives Used							
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INVOICE TO: NCDOT		QUOTE#:	QUOTE # State Proj . D. BS : 45155 P.O. NUMBER.	1-1-251	5132	- < - Z u	G= GRAB	00/07							
LAB NO.	SAMPLE IDENTIFICATION	z	DATE	TIME	MATRIX	1 CC VO	<u> </u>	10						-	
	58-15		11/10/11	1015	Seil	3	J	X	+		+			REMARKS	
	58-16											-	_		
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	58-19			011		-	-								
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ected/Relinqu	shed By:(1)	te /	Time	Received By:	λ:)-	Shipping Carrier.	amer		Sam	ples Receiv	Samples Received Cold? (Circle) YES		о М
Wallow	LING	5/21 11/11/11	1615	r/(r	V	V	\cap	Shipping Ticket No:	cket No:		Tem	Temperature°C:_	5,8,56.	56.2.94	5
Relinquished By. (2)		Űi	/Size	Received B		n n		Special Deliverable Requirements:	iverable R	equirement		in of Custor	Chain of Custody Seal: (Circle) INTACT RROKEN		
Relinquished By: (3)	(3) Date		Time	Received By:	× ¢			Special Instructions:	ructions:					\downarrow	
Relinquished By. (4)	(4) Date		Time	Received By.	5			Requested Turnaround Time:	Tumaroun	ď Time:			CTD		

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Page 75 of 79

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CLIENT: AWEL Ed-I, In C CONTACT: Helen Corley PHONE NO: 784 PROJECT: NCDOT Former Crumbles: PA REPORTS TO: Helen Corley & CAMEL Com REPORTS TO: Helen Corley & CAMEL Com	236 3494			
MI AMEL Ed. I. In C MACT: Helen Coriey PHONE NO: 784 JECT: NCDOT Former Crumbler P. ORTS TO: Helen Lorley E OMEL. Con Norther Star No.: ()	236 3494		WWW.US.	www.us.sga.com 106704
UTACT: HELEU CONTENT PHONE NO: (784) JECT: NCDOT FORMER CRUMBLED: P. ORTS TO: HELEULOVIELE OMEL. COM	236 3494	SGS Reference:		
UECT: NCDOT Former Crumbley P. ORTS TO: Helencorley @ OMEC.Com hothews.S.M.S.@omec.Com	وهداب		5110 5240	PAGE 7 OF 7
DRTS TO: HELEWEN Sitt & OMEC-COM hothew Sitt & Barner Com		SAMPLE TYPE		
		Comp Required		
INVOICE TO: QUOTE # SPORTE NCDO T P.O. NUMBER:	45155. U-5132 A	are 3/0/0/0	2 /2t /+/ /	
LAB NO. SAMPLE IDENTIFICATION DATE	TIME MATRIX S	12/2/2/2/		/ /
58-39B 11/17/11	1125 Son 1	6 X X		REMARKS
WW-1 1/11/1	1215	<u>ر</u> ا	x x	
Collected/Relinquished By:(1) Date , Time	Received By:	A Shipping Carrier:	Samples Re	Samples Received Cold? (Circle YFS NO
Mathe Me 11/17/11/11/11/11/11/11	A CAR	Shipping Ticket No:	Temperature	$) \dot{\gamma}$
Relinquished By: (2) Date Time (1//8/1, 1/500	Received BK	Special Deliverable Requirements:		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Relinquished By: (3) Date Time	C Received By:	Special Instructions:		
Relinquished By: (4) Date Time	Received By:	Requested Turnaround Time:		

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SGS North America	Inc.
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Sample Receipt Checklist (SRC)

Clie	nt:	NCDOT-AECOM	Work Order No.:	31103290
	1.	Shipped <u>x</u> Hand Delivered	Notes:	
	2.	x COC Present on Receipt No COC Additional Transmittal Forms		
	3.	Custody Tape on Container No Custody Tape		······································
	4.	Samples Intact _x_Samples Broken / Leaking		
	5.	x Chilled on Receipt Actual Temp.(s) in °C: Ambient on Receipt Walk-in on Ice; Coming down to temp. Received Outside of Temperature Specification		
	6.	<u>x</u> Sufficient 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*		
1	0.	x No Headspace present in VOC vials		
Comment	s:	9 vials for 8260 and VPH		
	· · · · ·	·		
		Inspec	eted and Logged in by: <u>TP</u> Date:f	Fri-11/18/11 00:00