





**NC Department of Transportation  
Preliminary Site Assessment  
State Project: R-3405  
WBS Element: 35579.1.1**

**Roby J and Ella Mae Property  
Parcel #210  
March 1, 2011**

**AMEC Earth and Environmental, Inc. of North Carolina  
AMEC Project: 562113405**

  
\_\_\_\_\_  
Troy L. Holzschuh  
Engineering Technician

  
  
\_\_\_\_\_  
Helen P. Corley, L.G.  
Associate Hydrogeologist



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## **1.0 INTRODUCTION**

In accordance with the North Carolina Department of Transportation (NCDOT) Request for Proposal, dated November 19, 2010, AMEC Earth and Environmental, Inc. of North Carolina (AMEC) has performed a Preliminary Site Assessment (PSA) for the Roby J. & Ella Mae Property (the Site) to be effected by a road improvement project along NC 18, Sparta Rd. The Site which is located at 3384 Sparta Rd currently operates as a furniture store called Roby's Furniture. The property is located on the eastern side of Sparta Rd. just south of the intersection with Yellow Banks Rd. in North Wilkesboro of Wilkes County, North Carolina. The investigation was conducted in accordance with AMEC's Technical and Cost proposal dated December 3, 2010.

NCDOT contracted AMEC to perform a PSA on the Roby J. & Ella Mae Property due to the architectural styling of the building on the parcel that suggests it could have operated as a gas station at one time. According to NCDENR's Underground Storage Tank (UST) section registry there are no facility IDs or Groundwater Incidents associated with this Site. The PSA was performed to determine if soils have been impacted by petroleum compounds as a result of past and present uses of the property within the proposed design project area. This site will be affected by construction activities associated with new drainage features for the NCDOT road improvement project along Sparta Rd.

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 #210 and estimates the extent of soil contamination, if applicable.

### **1.1 Site Location and Vicinity**

The Roby J. & Ella Mae Property parcel is located on the eastern side of Sparta Rd. North Wilkesboro, Wilkes County, North Carolina. The properties to the north and south are agricultural. The property to the west is residential with single a family home. The property to the east is wooded. Figure 1 shows the site location and vicinity.

## **1.2 Site Description and History**

The proposed DOT project will parallel the western property edge of Parcel #210 along Sparta Rd. The Site currently operates as a furniture store. The site has one single story building on the property and the proposed ROW lies in front of the building. Customer parking area is a gravel lot in front of the building. The rest of the parcel is grass. Appendix A includes a photo log for the parcel.

AMEC studied the NCDENR UST Registered Tanks Database and the NCDENR Incident Management Database. No known tanks or incidences are listed for this site.

## **2.0 GEOLOGY**

### **2.1 Regional Geology**

The Roby J. & Ella Mae Property is located within the metamorphic sediments of the Inner Piedmont Physiographic Province of western North Carolina. The Grace Shumate Property is located within the Alligator Back Formation of the Ocoee Supergroup located in the Blue Ridge Physiographic Province of western North Carolina. The Alligator Back Formation comprises metamorphic sedimentary rocks that are 750 million years in age. The rocks include mica schist and phyllite that are interlayered with minor biotite. The Alligator Back rocks were named for the large sections of gneiss that descend from the peak of Bluff Mountain that resemble an alligator.

### **2.2 Site Geology**

Site geology was observed through the sampling of 4 shallow direct push probe soil borings (SB) onsite. Borings were extended to a depth of 10 feet below ground surface (bgs). Native soils generally consisted of orange, well sorted clayey silt. Damp soil conditions were typically first encountered at a depth of 0.5 feet (ft) below ground surface (bgs). Boring logs are presented in Appendix B.

## **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 January 17, 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 January 19, 2011 to report the proposed drilling activities and subsequently notify all affected utilities for the parcel. Carolina Soil Investigations, LLC (CSI Drilling) of Olin, North Carolina was retained by AMEC to perform the direct push sampling for soil borings. AMEC coordinated with Schnabel Engineering South (Schnabel) who performed electromagnetic geophysical surveys onsite during December. The geophysical results were reviewed and discussed at their completion. Prism Laboratories, Inc. was contacted for acquisition of sample bottles. Soil boring locations were focused just beyond the existing ROW. Boring locations were strategically placed on proposed drainage features and along the front of the parcel to maximize the likelihood of intercepting any potential soil contamination.

### **3.2 Site Reconnaissance**

AMEC personnel completed site reconnaissance on November 22, 2010. During reconnaissance, the area was visually examined for the presence of any UST, overhead utilities or areas/obstructions that could potentially affect the subsurface investigation. The number of boring locations was discussed. Boring locations were marked on January 17, 2011.

### **3.3 Geophysical Survey**

Schnabel performed the geophysical surveys on December 6, 2010. Schnabel utilized a Geonics EM61-MK2 to perform the electromagnetic induction surveys. Ground-penetrating radar data were not collected due to the lack of EM61 anomalies to suggest probable USTs. The EM61 instrument is specifically calibrated to detect metal anomalies that are buried to about 8 feet bgs. The data collected by Schnabel did not indicate the presence of

metallic USTs in the areas surveyed on the site. The complete report can be found in Appendix C.

### **3.4 Well Survey**

No well survey was performed as part of this PSA and no monitoring wells were observed on the parcel.

### **3.5 Soil Sampling**

Soil boring occurred on January 24, 2011 at Parcel #210. Four direct push soil borings were conducted within the NCDOT design project on Parcel #210, which includes the western side of the site. Figure 2 presents the Site Map with boring locations and identifications. These samples were placed along the western edge of the parcel which runs parallel with Sparta Rd. Soil borings P210-SB-1 through P210-SB-4 were placed in twenty foot intervals along the western edge of the parcel. Screened soil from boring locations did not exhibit elevated Photo Ionized Detector (PID) readings; therefore AMEC personnel concluded that adequate coverage of the site had been obtained.

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 Prism Laboratories in Charlotte, a North Carolina Certified Laboratory following proper chain-of-custody procedures.

## **4.0 SOIL SAMPLING RESULTS**

AMEC conducted soil sampling at the Site on January 24, 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 with PID readings are tabulated in Table 1.

A minimum of one soil sample was collected from each of the 4 completed soil borings from Parcel #210. Typically, if impacted soil is identified, then additional soil samples are obtained; however, at Parcel #210 PID readings did not warrant any additional soil samples. Analyses of soil samples for DRO and GRO did not indicate any sample locations with detections above the reporting limits. Figure 3 shows the Site Map with Analytical Data.

Since the field investigation and the Laboratory analytical report did not indicate contamination, an estimation of contamination was not warranted.

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

## **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 24, 2011.

- The property presently operates as a furniture store.
- UST Database for Incident Management does not have any incidences associated with this site.
- NCDENR UST Registered Tanks Database does not identify the presence of any USTs at the Site.
- Geophysical EM data did not indicate the presence of metallic USTs in the areas surveyed.
- Four soil samples were collected and analyzed for TPH GRO and DRO.
- Laboratory analyses did not indicate DRO and GRO detections above the analytical method reporting level.



## **6.0 RECOMMENDATIONS**

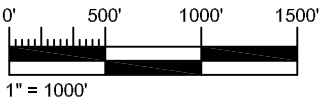
Since no soil contamination was found at this site during field investigation activities or by laboratory analyses, and no known USTs or Groundwater incidences are associated with this property, AMEC does not recommend any additional action.

## **TABLES**

**Table 1**  
**Soil Sampling Analytical Results, DRO-GRO**  
**Parcel 210, Roby J and Ella Mae Mitchell Property**  
**NC DOT**  
**North Wilkesboro, Wilkes County, North Carolina**

SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH (ft bgs)	PID READINGS (ppm)	EPA Method 8015B	
				DRO (mg/kg)	GRO (mg/kg)
<b>NC Action Levels</b>				<b>10</b>	<b>10</b>
P210-SB-1	1/24/2011	3 - 5	0	<8.9	<4.6
P210-SB-2	1/24/2011	3 - 5	0	<8.7	<4.9
P210-SB-3	1/24/2011	3 - 5	0	<8.0	<4.3
P210-SB-4	1/24/2011	3 - 5	0	<9.3	<4.9
<b>NOTES:</b> ft bgs = feet below ground surface; ppm = parts per million mg/kg = milligrams per kilogram <b>Bold</b> Concentrations Exceed Action Levels DRO = Diesel Range Organics GRO = Gasoline Range Organics Standards derived from the North Carolina UST Section Guidelines for Assessment and Corrective Action					

## FIGURES



7.5 Minute Quadrangle  
 North Carolina, 1983  
 Photorevised 1993

### VICINITY MAP

Parcel #210, Roby J. & Ella Mae Mitchell Property  
 (Roby's Furniture)  
 North Wilkesboro, Wilkes County, NC

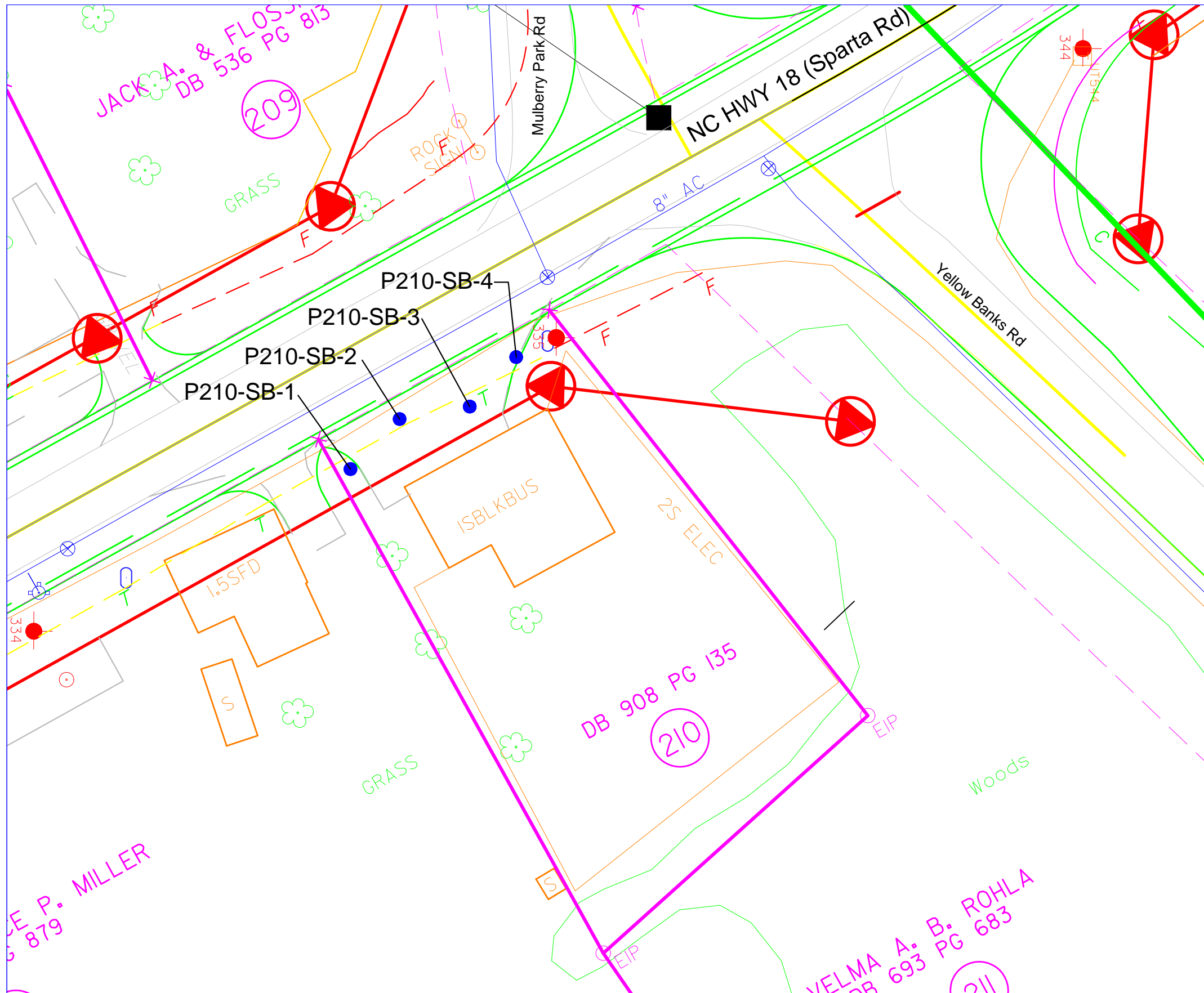
DRAWING NAME: J:\NCDOT\Wilkes\FIG1 DATE: 2-24-11

SCALE: 1 INCH = 1,000 FEET DR: TLH CHK: HPC REV:










PREPARED FOR:  
 NC Department Of Transportation  
 Geotechnical Unit  
 WBS Element: 35579.1.1  
 TIP# R-3405

Prepared By:  
 338 N Elm Ave  
 Suite 112  
 Greensboro, NC 27401  
 (336) 691-5398

Figure:  
 Figure 1



**LEGEND**

-  Proposed Right of Way
-  Existing Property Line
-  Existing Right of Way
-  Cut Line
-  Fill Line
-  Transition Line
-  Soil Boring Location January 2011
-  Utility Easement
-  Utility Pole

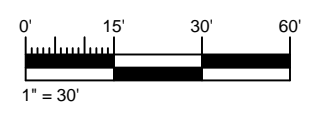
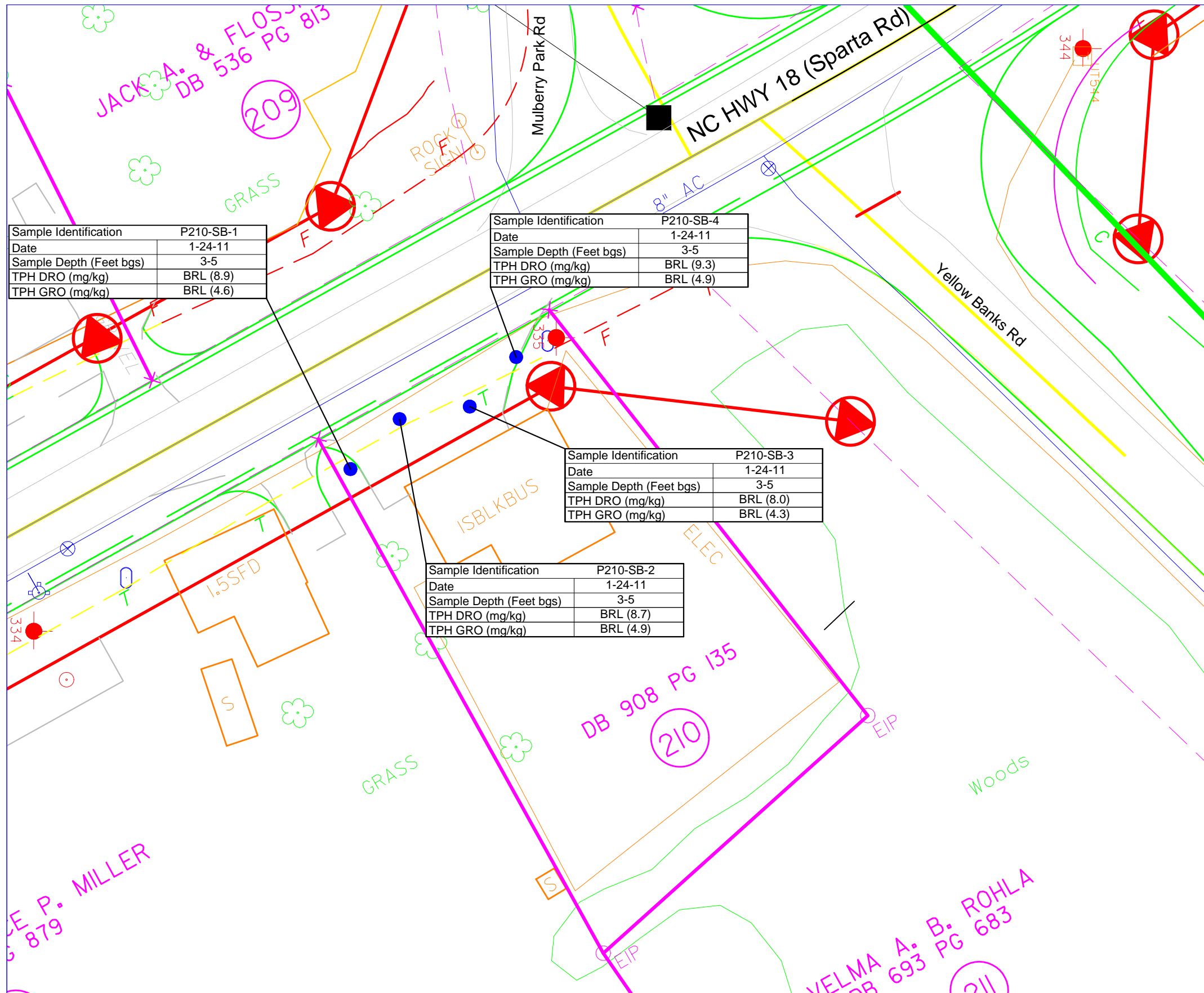


Figure 2  
Parcel #210 Roby J & Ella Mae Mitchell Property  
Site Map

NC Department of Transportation  
Geotechnical Unit  
WBS Element: 35579.1.1  
TIP# R-3405





Sample Identification	P210-SB-1
Date	1-24-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (8.9)
TPH GRO (mg/kg)	BRL (4.6)

Sample Identification	P210-SB-4
Date	1-24-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (9.3)
TPH GRO (mg/kg)	BRL (4.9)

Sample Identification	P210-SB-3
Date	1-24-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (8.0)
TPH GRO (mg/kg)	BRL (4.3)

Sample Identification	P210-SB-2
Date	1-24-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (8.7)
TPH GRO (mg/kg)	BRL (4.9)

### LEGEND

- Proposed Right of Way
- Existing Property Line
- Existing Right of Way
- Cut Line
- Fill Line
- Transition Line
- Soil Boring Location January 2011
- Probable UST
- Utility Easement

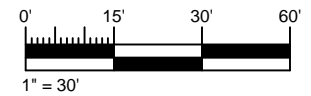


Figure 3  
Parcel #210 Roby J & Ella Mae Mitchell Property  
Site Map With Analytical Data

NC Department of Transportation  
Geotechnical Unit  
WBS Element: 35579.1.1  
TIP# R-3405



**APPENDIX A**

**PHOTO LOG**





**Photo 1**

Viewing northeast from across Sparta Road. The photo is of the ROW.



**Photo 2**

Viewing northwest from the northern corner of the site. The photo shows the track rig setting up to drill.



338 North Elm Street, Suite 112  
Greensboro, NC 27401

W.O. 562113405  
PROCESSED TLH  
DATE January 2011  
PAGE 1

PHOTOGRAPHIC LOG

Preliminary Site Assessment  
Parcel 210, Gary B. Miller Property  
North Wilkesboro, NC

**APPENDIX B**  
**BORING LOGS**









**APPENDIX C**  
**GEOPHYSICAL SURVEY REPORT**



January 28, 2011

Ms. Helen Corley, LG  
AMEC Earth and Environmental of North Carolina, Inc.  
101 W. Friendly Avenue, Suite 603  
Greensboro, NC 27401

RE:           State Project: R-3405  
              WBS Element: 35579.1.1  
              County: Wilkes  
              Description: NC 18 from SR 1002 (Mountain View Road) to SR 1717 (Yellow Banks Road)

**Subject:       Project 09210013.34 Report on Geophysical Surveys  
              Parcel 210, Wilkes County, North Carolina**

Dear Ms. Corley:

**SCHNABEL ENGINEERING SOUTH, PC** (Schnabel) is pleased to present this report on the geophysical surveys we conducted on the subject property. We understand this letter report will be included as an appendix in your report to the NCDOT. The report includes two 11x17 color figures and two 8.5x11 color figures.

## **INTRODUCTION**

The work described in this report was conducted on December 6, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted over the accessible areas of the parcel as indicated by the NCDOT to support their environmental assessment of the subject property. Photographs of the parcel are included on Figure 1. The property is located on the east side of Sparta Road at the intersection of Mulberry Park Road in North Wilkesboro, NC. The purpose of the geophysical surveys was to locate suspect metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement.

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



## **FIELD METHODOLOGY**

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

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing.

## **DISCUSSION OF RESULTS**

The contoured EM61 data collected over Parcel 210 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 USTs.

The early time gate and differential results show anomalies apparently caused by reinforced concrete, buried utilities, or known site features (Figures 3 and 4). GPR data were not collected at the site because of a lack of differential EM61 anomalies that suggested the presence of USTs. The geophysical data do not indicate the presence of metallic USTs within the areas surveyed.

## **CONCLUSIONS**

Our evaluation of the geophysical data collected on the subject property on Project R-3405 in North Wilkesboro, NC indicates the following:

The geophysical data do not indicate the presence of metallic USTs in the areas surveyed on the subject property.

## LIMITATIONS

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

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

Sincerely,

**SCHNABEL ENGINEERING SOUTH, PC**



Jeremy S. Strohmeyer, LG  
Project Manager



Edward D. Billington, LG  
Senior Vice President

JW:JS:NB

Attachments: Figures (4)

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.34 (R-3405, WILKES COUNTY)\REPORT\PARCEL 210\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 210 (R-3405).DOCX



Parcel 210 – Roby J & Ella Mae Mitchell Property, looking southeast



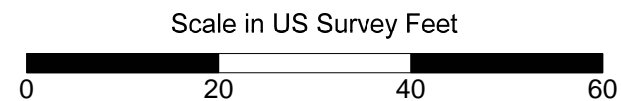
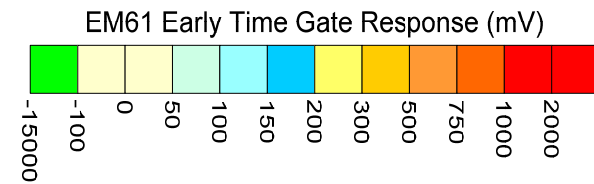
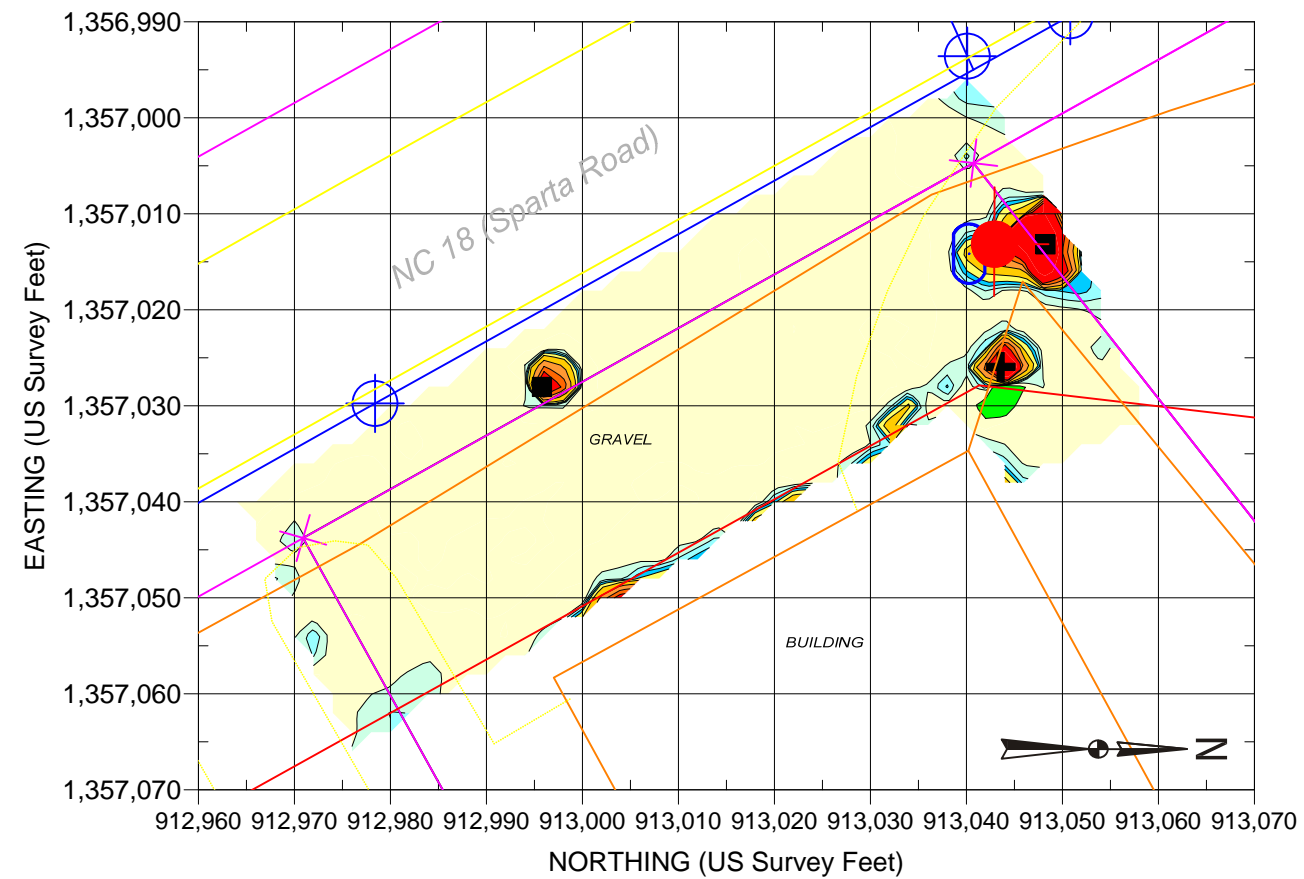
Parcel 210 – Roby J & Ella Mae Mitchell Property, looking north



Geonics EM61-MK2



GSSI SIR-3000

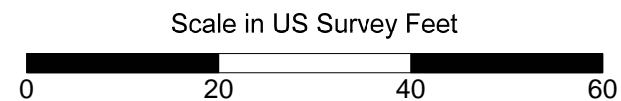
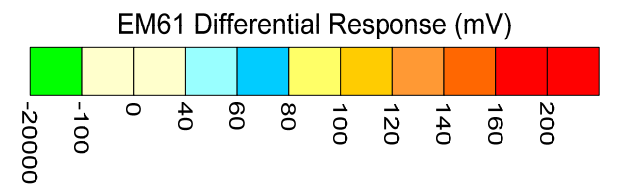
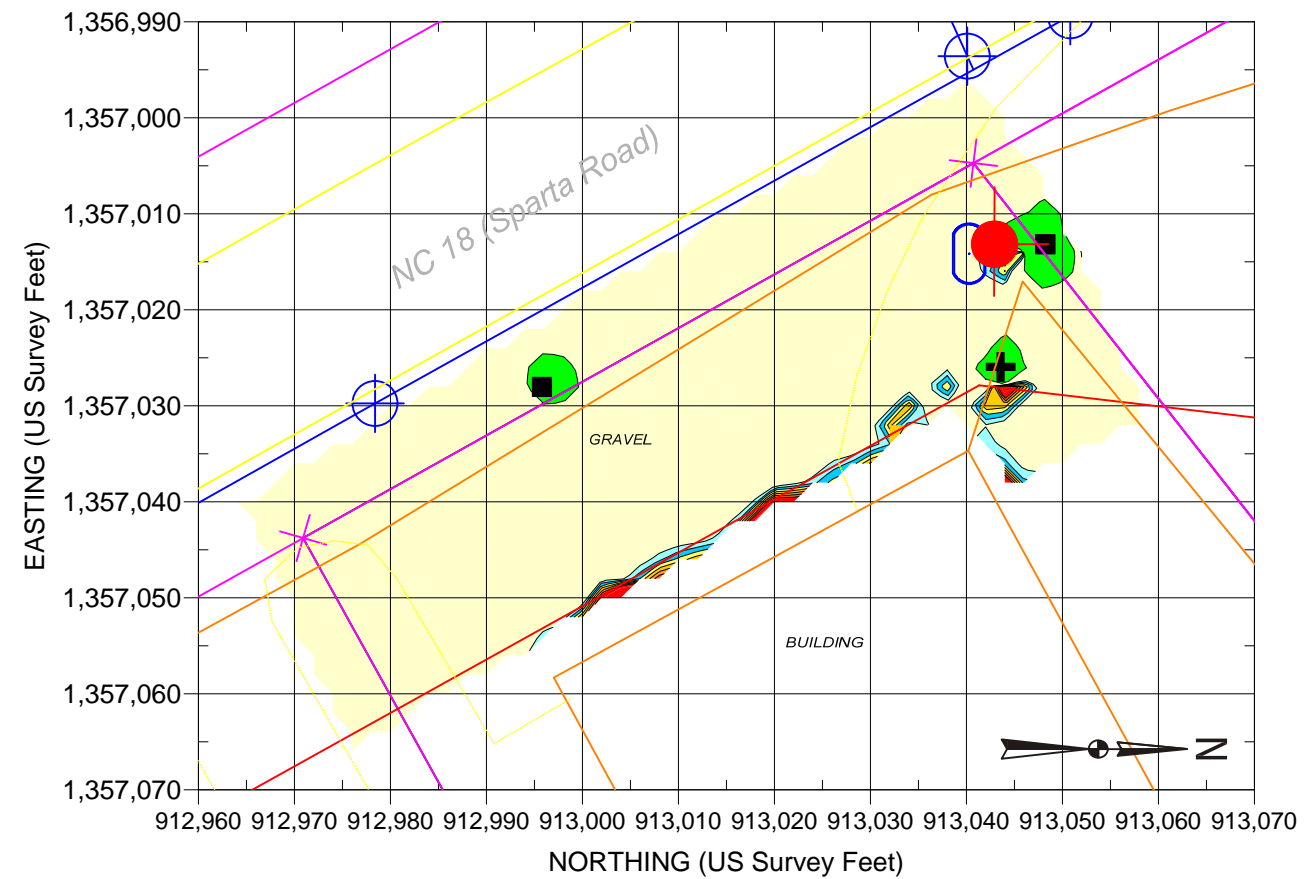


EXPLANATION	
	SIGN
	UTILITY POLE
	GUY WIRE
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	LIGHT POLE
	STORM SEWER INLET
	UST LID
	DOT PROPOSED RW
	DOT PROPOSED UTILITY EASEMENT
	PROPERTY LINE
	UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
	EXAMPLE GPR LINE LOCATION
	GPR SURVEY AREA
	LOCATION OF KNOWN OR SUSPECT USTS MARKED ON SITE

REF.: NCDOT FILE: r3405\_ddc\_psh15\_060530.dgn  
(FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on December 6, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on December , 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

	STATE PROJECT R-3405 WILKES COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.34	PARCEL 210 EARLY TIME GATE RESPONSE
	FIGURE 3	



EXPLANATION	
	SIGN
	UTILITY POLE
	GUY WIRE
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	LIGHT POLE
	STORM SEWER INLET
	UST LID
	DOT PROPOSED RW
	DOT PROPOSED UTILITY EASEMENT
	PROPERTY LINE
	UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
	EXAMPLE GPR LINE LOCATION
	GPR SURVEY AREA
	LOCATION OF KNOWN OR SUSPECT USTS MARKED ON SITE

REF.: NCDOT FILE: r3405\_ddc\_psh15\_060530.dgn  
(FOR SOME SITE FEATURES)

Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on December 6, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on December, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

	STATE PROJECT R-3405 WILKES COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.34	PARCEL 210 DIFFERENTIAL RESPONSE
	FIGURE 4	

## **APPENDIX D**

### **LABORATORY ANALYTICAL RESULTS**

AMEC Earth & Env. Inc.(DOT Gree)  
Helen Corley  
338 North Elm St. Suite 112  
Greensboro, NC 27401

Project: NCDOT: Wilkes County Parcel 210  
Project No.: WBS #35579.1.1  
Lab Submittal Date: 01/26/2011  
Prism Work Order: 1010538

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



President/Project Manager



Reviewed By

**Data Qualifiers Key Reference:**

A Surrogate recovery above the control limits. GRO was not detected in the sample. No further action was taken.  
BRL Below Reporting Limit  
MDL Method Detection Limit  
RPD Relative Percent Difference  
\* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.



Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
P210-SB-1(3-5)	1010538-01	Solid	01/24/11	01/26/11
P210-SB-2(3-5)	1010538-02	Solid	01/24/11	01/26/11
P210-SB-3(3-5)	1010538-03	Solid	01/24/11	01/26/11
P210-SB-4(3-5)	1010538-04	Solid	01/24/11	01/26/11

Samples received in good condition at 2.7 degrees C unless otherwise noted.

AMEC Earth & Env. Inc.(DOT Gree)  
 Attn: Helen Corley  
 338 North Elm St. Suite 112  
 Greensboro, NC 27401

Project: NCDOT: Wilkes County  
 Parcel 210  
 Project No.: WBS #35579.1.1  
 Sample Matrix: Solid

Client Sample ID: P210-SB-1(3-5)  
 Prism Sample ID: 1010538-01  
 Prism Work Order: 1010538  
 Time Collected: 01/24/11 14:10  
 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Diesel Range Organics by GC/FID</b>									
Diesel Range Organics	BRL	mg/kg dry	8.9	1.4	1	*8015C	1/29/11 23:24	JMV	P1A0511
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			98 %		49-124	
<b>Gasoline Range Organics by GC/FID</b>									
Gasoline Range Organics	BRL	mg/kg dry	4.6	0.60	50	*8015C	1/28/11 22:22	HPE	P1A0482
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			92 %		55-129	
<b>General Chemistry Parameters</b>									
% Solids	78.6	% by Weight	0.100	0.100	1	*SM2540 G	1/28/11 15:00	JAB	P1A0512

AMEC Earth & Env. Inc.(DOT Gree)  
Attn: Helen Corley  
338 North Elm St. Suite 112  
Greensboro, NC 27401

Project: NCDOT: Wilkes County  
Parcel 210  
Project No.: WBS #35579.1.1  
Sample Matrix: Solid

Client Sample ID: P210-SB-2(3-5)  
Prism Sample ID: 1010538-02  
Prism Work Order: 1010538  
Time Collected: 01/24/11 14:20  
Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Diesel Range Organics by GC/FID</b>									
Diesel Range Organics	BRL	mg/kg dry	8.7	1.4	1	*8015C	1/30/11 0:00	JMV	P1A0511
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			101 %		49-124	
<b>Gasoline Range Organics by GC/FID</b>									
Gasoline Range Organics	BRL	mg/kg dry	4.9	0.63	50	*8015C	1/28/11 22:54	HPE	P1A0482
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			157 %		55-129	A
<b>General Chemistry Parameters</b>									
% Solids	80.0	% by Weight	0.100	0.100	1	*SM2540 G	1/28/11 15:00	JAB	P1A0512

AMEC Earth & Env. Inc.(DOT Gree)  
 Attn: Helen Corley  
 338 North Elm St. Suite 112  
 Greensboro, NC 27401

Project: NCDOT: Wilkes County  
 Parcel 210  
 Project No.: WBS #35579.1.1  
 Sample Matrix: Solid

Client Sample ID: P210-SB-3(3-5)  
 Prism Sample ID: 1010538-03  
 Prism Work Order: 1010538  
 Time Collected: 01/24/11 14:30  
 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Diesel Range Organics by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	8.0	1.3	1	*8015C	1/30/11 0:35	JMV	P1A0511
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			92 %		49-124	

**Gasoline Range Organics by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	4.3	0.56	50	*8015C	1/28/11 23:25	HPE	P1A0482
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			153 %		55-129	A

**General Chemistry Parameters**

% Solids	86.6	% by Weight	0.100	0.100	1	*SM2540 G	1/28/11 15:00	JAB	P1A0512
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AMEC Earth & Env. Inc.(DOT Gree)  
Attn: Helen Corley  
338 North Elm St. Suite 112  
Greensboro, NC 27401

Project: NCDOT: Wilkes County  
Parcel 210  
Project No.: WBS #35579.1.1  
Sample Matrix: Solid

Client Sample ID: P210-SB-4(3-5)  
Prism Sample ID: 1010538-04  
Prism Work Order: 1010538  
Time Collected: 01/24/11 14:40  
Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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### Diesel Range Organics by GC/FID

Diesel Range Organics	BRL	mg/kg dry	9.3	1.5	1	*8015C	1/30/11 1:11	JMV	P1A0511
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			107 %		49-124	

### Gasoline Range Organics by GC/FID

Gasoline Range Organics	BRL	mg/kg dry	4.9	0.63	50	*8015C	1/28/11 23:57	HPE	P1A0482
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			147 %		55-129	A

### General Chemistry Parameters

% Solids	75.0	% by Weight	0.100	0.100	1	*SM2540 G	1/28/11 15:00	JAB	P1A0512
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AMEC Earth & Env. Inc.(DOT Gree)  
Attn: Helen Corley  
338 North Elm St. Suite 112  
Greensboro, NC 27401

Project: NCDOT: Wilkes County Parcel  
210  
Project No: WBS #35579.1.1

Prism Work Order: 1010538  
Time Submitted: 1/26/11 1:12:00PM

**Gasoline Range Organics by GC/FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P1A0482 - 5035</b>									
<b>Blank (P1A0482-BLK1)</b>					Prepared & Analyzed: 01/28/11				
Gasoline Range Organics	BRL	5.0	mg/kg wet						
Surrogate: a,a,a-Trifluorotoluene	5.25		mg/kg wet	5.00		105 55-129			
<b>LCS (P1A0482-BS1)</b>					Prepared & Analyzed: 01/28/11				
Gasoline Range Organics	41.6	5.0	mg/kg wet	50.0		83 67-116			
Surrogate: a,a,a-Trifluorotoluene	5.30		mg/kg wet	5.00		106 55-129			
<b>LCS Dup (P1A0482-BSD1)</b>					Prepared & Analyzed: 01/28/11				
Gasoline Range Organics	41.2	5.0	mg/kg wet	50.0		82 67-116	1	200	
Surrogate: a,a,a-Trifluorotoluene	5.10		mg/kg wet	5.00		102 55-129			

AMEC Earth & Env. Inc.(DOT Gree)  
Attn: Helen Corley  
338 North Elm St. Suite 112  
Greensboro, NC 27401

Project: NCDOT: Wilkes County Parcel  
210  
Project No: WBS #35579.1.1

Prism Work Order: 1010538  
Time Submitted: 1/26/11 1:12:00PM

**Diesel Range Organics by GC/FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P1A0511 - 3545A</b>										
<b>Blank (P1A0511-BLK1)</b>										
					Prepared: 01/28/11 Analyzed: 01/29/11					
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: <i>o</i> -Terphenyl	1.51		mg/kg wet	1.60		95	49-124			
<b>LCS (P1A0511-BS1)</b>										
					Prepared: 01/28/11 Analyzed: 01/29/11					
Diesel Range Organics	61.9	7.0	mg/kg wet	79.9		78	55-109			
Surrogate: <i>o</i> -Terphenyl	1.67		mg/kg wet	1.60		104	49-124			
<b>LCS Dup (P1A0511-BSD1)</b>										
					Prepared: 01/28/11 Analyzed: 01/29/11					
Diesel Range Organics	61.7	7.0	mg/kg wet	80.0		77	55-109	0.5	200	
Surrogate: <i>o</i> -Terphenyl	1.54		mg/kg wet	1.60		96	49-124			

AMEC Earth & Env. Inc.(DOT Gree)  
Attn: Helen Corley  
338 North Elm St. Suite 112  
Greensboro, NC 27401

Project: NCDOT: Wilkes County Parcel  
210  
Project No: WBS #35579.1.1

Prism Work Order: 1010538  
Time Submitted: 1/26/11 1:12:00PM

**General Chemistry Parameters - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P1A0512 - NO PREP**

**Blank (P1A0512-BLK1)**

Prepared & Analyzed: 01/28/11

% Solids	100	0.100	% by Weight							
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**Sample Extraction Data**

**Prep Method: 3545A**

Lab Number	Batch	Initial	Final	Date
1010538-01	P1A0511	25.1 g	1 mL	01/28/11
1010538-02	P1A0511	25.13 g	1 mL	01/28/11
1010538-03	P1A0511	25.13 g	1 mL	01/28/11
1010538-04	P1A0511	25.14 g	1 mL	01/28/11

**Prep Method: 5035**

Lab Number	Batch	Initial	Final	Date
1010538-01	P1A0482	6.91 g	5 mL	01/28/11
1010538-02	P1A0482	6.43 g	5 mL	01/28/11
1010538-03	P1A0482	6.66 g	5 mL	01/28/11
1010538-04	P1A0482	6.86 g	5 mL	01/28/11

**NO PREP**

Lab Number	Batch	Initial	Final	Date
1010538-01	P1A0512	30 g	30 mL	01/28/11
1010538-02	P1A0512	30 g	30 mL	01/28/11
1010538-03	P1A0512	30 g	30 mL	01/28/11
1010538-04	P1A0512	30 g	30 mL	01/28/11





Full-Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
Phone: 704/529-6364 • Fax: 704/525-0409

Client Company Name: AMEL E+E  
Report To/Contact Name: Helen Corley  
Reporting Address: 338 N Elm St  
Greensboro NC 27401  
Phone: 336-641-5788 Fax (Yes) (No):  
Email (Yes) (No) Email Address: helen.corley@amel.com  
EDD Type: PDF / Excel / Other  
Site Location Name: Parcel 210  
Site Location Physical Address: North Wilkesboro

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: WAS:35579.61

Project Name: Wilkes County  
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)  
\*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements  
Invoice To: Helen Corley  
Address: 338 N Elm St  
Greensboro NC 27401

Purchase Order No./Billing Reference WAS:35579.61  
Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
"Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
Samples received after 15:00 will be processed next business day.  
Turnaround time is based on business days, excluding weekends and holidays.  
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY			
	YES	NO	N/A
Samples INTACT upon arrival?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received ON WET ICE? Temp <u>2.7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VOLATILES rec'd W/OUT HEADSPACE?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL  
Certification: NELAC USACE FL NC  
SC OTHER N/A  
Water Chlorinated: YES NO  
Sample Iced Upon Collection: YES NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED				REMARKS	PRISM LAB ID NO.	
				*TYPE SEE BELOW	NO.	SIZE								
<u>P210-SB-1(3-5)</u>	<u>1-24-11</u>	<u>1410</u>	<u>Soil</u>	<u>G/VOA</u>	<u>4</u>	<u>2 G</u> <u>2 VOA</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<u>01</u>
<u>P210-SB-2(3-5)</u>	<u>↓</u>	<u>1420</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<u>02</u>
<u>P210-SB-3(3-5)</u>	<u>↓</u>	<u>1430</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<u>03</u>
<u>P210-SB-4(3-5)</u>	<u>↓</u>	<u>1440</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<u>04</u>

Sampler's Signature: Troy L Holzschuh Sampled By (Print Name): Troy L Holzschuh Affiliation: AMEL

**PRESS DOWN FIRMLY - 3 COPIES**

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) <u>Troy L Holzschuh</u>	Received By: (Signature) <u>JLH Troy L Holzschuh</u>	Date <u>1-26-11</u>	Military Hours <u>1312</u>	Additional Comments:
Relinquished By: (Signature)	Received By: (Signature)	Date		
Relinquished By: (Signature)	Received For Prism Laboratories By: <u>J.R.O.</u>	Date <u>1/26/11</u>	Military Hours <u>1312</u>	
Method of Shipment: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand-delivered <input type="checkbox"/> Prism Field Service <input type="checkbox"/> Other			NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.	
			COC Group No. <u>1010538</u>	

PRISM USE ONLY	
Site Arrival Time:	
Site Departure Time:	
Field Tech Fee:	
Mileage:	

NPDES: <input type="checkbox"/> NC <input type="checkbox"/> SC	UST: <input type="checkbox"/> NC <input type="checkbox"/> SC	GROUNDWATER: <input type="checkbox"/> NC <input type="checkbox"/> SC	DRINKING WATER: <input type="checkbox"/> NC <input type="checkbox"/> SC	SOLID WASTE: <input type="checkbox"/> NC <input type="checkbox"/> SC	RCRA: <input type="checkbox"/> NC <input type="checkbox"/> SC	CERCLA: <input type="checkbox"/> NC <input type="checkbox"/> SC	LANDFILL: <input type="checkbox"/> NC <input type="checkbox"/> SC	OTHER: <input type="checkbox"/> NC <input type="checkbox"/> SC
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SEE REVERSE FOR TERMS & CONDITIONS  
Page 10 of 10

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)