

NC Department of Transportation

Preliminary Site Assessment State Project: R-3405 WBS Element: 35579.1.1

Helen G. Brown Property Parcel #128 February 24, 2011

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

Troy L. Holzschuh

Engineering Technician

Helen P. Corley, L.G.

Senior Project Manager



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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 Helen G. Brown Property (the Site) to be effected by a road improvement project along NC 18, Sparta Rd. The Site which is located at 1967 Sparta Rd currently operates as a hair salon, Nicole's Salon. The property is located on the northwestern corner of Sparta and Brown Berry Roads 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 Helen G. Brown Property because historically the site operated as a gas station. 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 entire parcel will be taken and thus affected by construction activities associated with road widening and new drainage features 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 #128 and estimates the extent of soil contamination.

1.1 Site Location and Vicinity

The Helen G. Brown Property parcel is located on the northwestern corner of the intersection of Sparta and Brown Berry Roads in North Wilkesboro, Wilkes County, North Carolina, as shown in Figure 1. The properties to the north, south, east and west are residential with single family homes.

1.2 Site Description and History

The Site is currently operating as a hair salon, however historically operated as a gas station. There is one multi-tenant building on the parcel. Nicole's Hair Salon is located in the southern three quarters of the building. The northern quarter of the building is an office



for a Baptist Church. The proposed DOT project will take the entire parcel. Three USTs were observed at this facility. One UST had a visible fuel port while the other two were not identified until the geophysical survey. Appendix A includes a photo log for Parcel #1.

AMEC studied the NCDENR UST Registered Tanks Database as well as the NCDENR Incident Management Database and there are no listed Facility IDs or Groundwater incidents associated with this parcel.

2.0 GEOLOGY

2.1 Regional Geology

The Helen G. Brown 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 ten shallow direct push probe soil borings (SB) onsite. Borings ranged in total depth from 10 to 15 feet below ground surface (bgs). Native soils generally consisted of orange, well sorted and clayey silt. Boring logs are presented in Appendix B.

Damp soil conditions were typically first encountered at a depth of 0.5 feet (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 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 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 drilling and sampling. AMEC coordinated with Schnabel Engineering South (Schnabel) who performed two geophysical surveys (electromagnetic and ground penetrating radar) onsite during December. The geophysical results were reviewed and discussed at the completion of each survey. 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 as close to or around the probable USTs 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 or areas/obstructions that could potentially affect the subsurface investigation and the number of boring locations was discussed. Boring locations were marked on January 17, 2011.

3.3 Geophysical Survey

Schnabel performed the geophysical surveys from December 9 to 22, 2010 for the Sparta Rd corridor. Schnabel utilized a Geonics EM61-MK2 to perform the electromagnetic induction surveys and a Geophysical Survey Systems SIR-3000 to conduct the ground-penetrating radar (GPR) investigations. These instruments are specifically calibrated to detect metal anomalies that are buried deeply and are characteristically large. The data collected by Schnabel indicates the presence of three USTs within the proposed design area. The three USTs are denoted in Figure 2 and their capacities and depths buried are tabulated on the next page. The complete geophysical survey report can be found in Appendix C.



Probable UST-1	1,000 gal.	3-4 ft bgs
Probable UST-2	1,500 gal.	3-4 ft bgs
Probable UST-3	270 gal.	1.5-2.5 ft bgs

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 25, 2011 at Parcel #128. Ten direct push soil borings were conducted within the NCDOT design project on Parcel #128, which includes the southern and western sides of the 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 three USTs and the southern and western edges of the site, which parallel the roads. The first boring, P128-SB-1, was placed at the western side of probable UST-3. Probable UST-3 is not located within the proposed ROW however since parcel 128 is a total take AMEC personnel decided to target that UST. Soil Boring P128-SB-2 was placed at the southern side of probable UST-3. Due to a water line running east and west parallel to Brown Berry Rd. and the required 32 inch clearance of utilities AMEC personnel placed soil boring P128-SB-2 eight feet south of probable UST-3 but couldn't access the area directly east of UST-3. P128-SB-3 targeted probable UST-2 and was placed on its south side. P128-SB-3 exhibited elevated photo ionized detector (PID) readings at the 13-15 foot interval so AMEC personnel chose to place boring P128-SB-4 just south and east of P128-SB-3 to define the area of contamination. Its placement was also chosen to target an area with proposed drainage structures. Soil boring P128-SB-5 targeted the eastern side of probable UST-1 and probable UST-2. This soil boring also showed elevated PID readings through most of the soil column with a maximum at the 13-15 ft interval. Soil borings P128-SB-6 through P128-SB-8 were chosen to define the area of contamination. Sparta Rd. limited the ability to define the area of contamination further to the east. Borings P128-SB-9 and P128-SB-10 were placed along the eastern edge and toward the northern boundary of the parcel to complete coverage along the proposed ROW.



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 25, 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 ten completed soil borings from Parcel #128. Typically, if impacted soil was identified, then additional soil samples were obtained and consequently second samples were collected in four borings with elevated PID readings. Soil borings P128-SB-2 and P128-SB-7 through -SB-10 exhibited low to zero PID values consequently additional soil samples were not warranted. Results from the DRO analyses reported detections in six of the ten borings, with a maximum concentration of 7,600 mg/kg near probable UST-3 from the 5 to 7 ft bgs depth in boring P128-SB1. Six other DRO results exceeded the NC Action Level of 10 mg/kg. Results from GRO analyses reported fewer detections than for DRO. The maximum GRO values were reported in the deeper samples (13-15 ft) from three borings near probable UST-1 and -2 where GRO values ranged from 1,600 to 3,800 mg/kg. In the area of probable UST-3 one elevated GRO value of 170 mg/kg was measured in P128-SB1 from 5 to 7 ft bgs. The remaining soil boring sample results for GRO were all below reporting limits. Figure 3 shows the Site Map with Analytical Data.



Based on the field investigation and laboratory data indicated contamination, AMEC drew two separate estimated areas of contamination as shown on Figure 4. The southwestern contamination near probable UST-3 has an approximate area of 119 square feet and has a thickness from below 5 ft bgs to at least 15 ft bgs. Using a thickness of 10 ft, the resultant volume of estimated contamination would be 1,190 cubic feet, which is roughly 44 cubic yards.

The second area of contamination is near probable USTs -1 and -2 in the southeastern portion of the parcel and it covers 547 square feet roughly with a thickness from 4 ft to at least 15 ft bgs. Using a thickness of 11 ft, the resultant volume of contamination would be 6,017 cubic feet, which is roughly 223 cubic yards.

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 25, 2011.

- The property presently operates as a hair salon and church office but historically the property operated as a gas station.
- The NCDENR's UST Registered Tanks Database and NCDENR's Incident Management Database does not have any information associated with this parcel.
- The geophysical data indicate the presence of three probable USTs. Since this site is a total take the three USTs will be affected by construction activities.
- Fourteen soil samples were collected from ten borings and analyzed for TPH GRO and DRO.
- Laboratory analyses did indicate DRO and/or GRO detections above the analytical method reporting level in seven soil samples from six locations.
- GRO was most concentrated in soil near probable UST-3, while DRO values were the highest in the vicinity of USTs -1 and -2.



• Two separate areas of contamination have been identified and the collective estimation of contaminated soil is at least 267 cubic yards.

6.0 RECOMMENDATIONS

Two of the UST's are within the proposed ROW, however since the entire site will be taken it is recommended that all three USTs, associated piping and impacted soil be removed by the UST owner. Soil will have to be sampled during closure activities and handled following NCDENR's Tank Closure Guidelines.

AMEC understands that a party other than NCDOT may implement the UST closure and following such a situation 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.



Table 1 Soil Sampling Analytical Results, DRO-GRO Parcel 128, Helen G Brown Property NC DOT

North Wilkesboro, Wilkes County, North Carolina

	SAMPLE	SAMPLE DEPTH	PID	EPA Method 8015B		
SAMPLE ID	DATE	(ft bgs)	READINGS (ppm)	DRO (mg/kg)	GRO (mg/kg)	
NC Action Levels		10	10			
P128-SB-1	1/25/2011	5 - 7	60	7600	170	
P128-SB-1	1/25/2011	13 - 15	2	15	<4.9	
P128-SB-2	1/25/2011	10 - 12	0	43	<4.9	
P128-SB-3	1/25/2011	3 - 5	0	<8.9	<4.4	
P128-SB-3	1/25/2011	13 - 15	1263	450	2400	
P128-SB-4	1/25/2011	4 - 6	1	<8.5	<4.9	
P128-SB-5	1/25/2011	2 - 4	82	<8.9	<5.0	
P128-SB-5	1/25/2011	13 - 15	1483	640	3800	
P128-SB-6	1/25/2011	2 - 4	20	<9.3	9.1	
P128-SB-6	1/25/2011	13 - 15	1134	470	1600	
P128-SB-7	1/25/2011	4 - 6	11	16	9.2	
P128-SB-8	1/25/2011	8 - 10	6	<8.8	<4.7	
P128-SB-9	1/25/2011	6 - 8	2	<8.5	<4.9	
P128-SB-10	1/25/2011	4 - 6	0	<8.9	<5.4	

NOTES:

ft bgs = feet below ground surface; ppm = parts per million

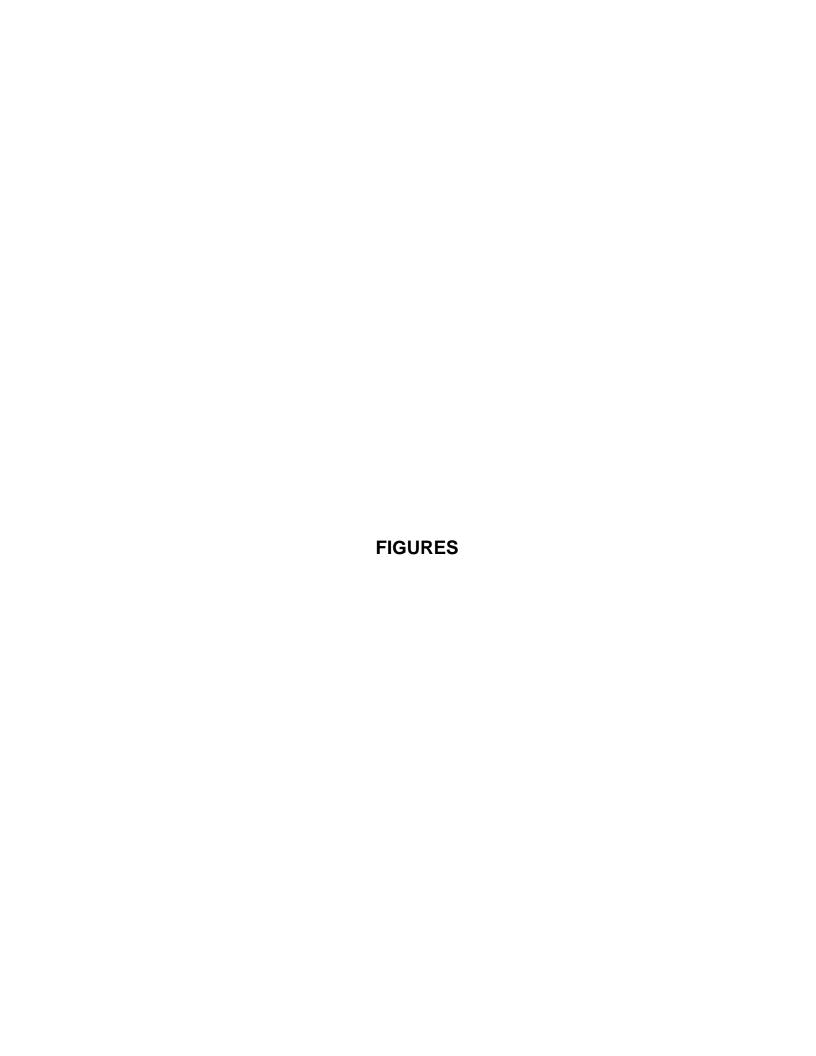
mg/kg = milligrams per kilogram

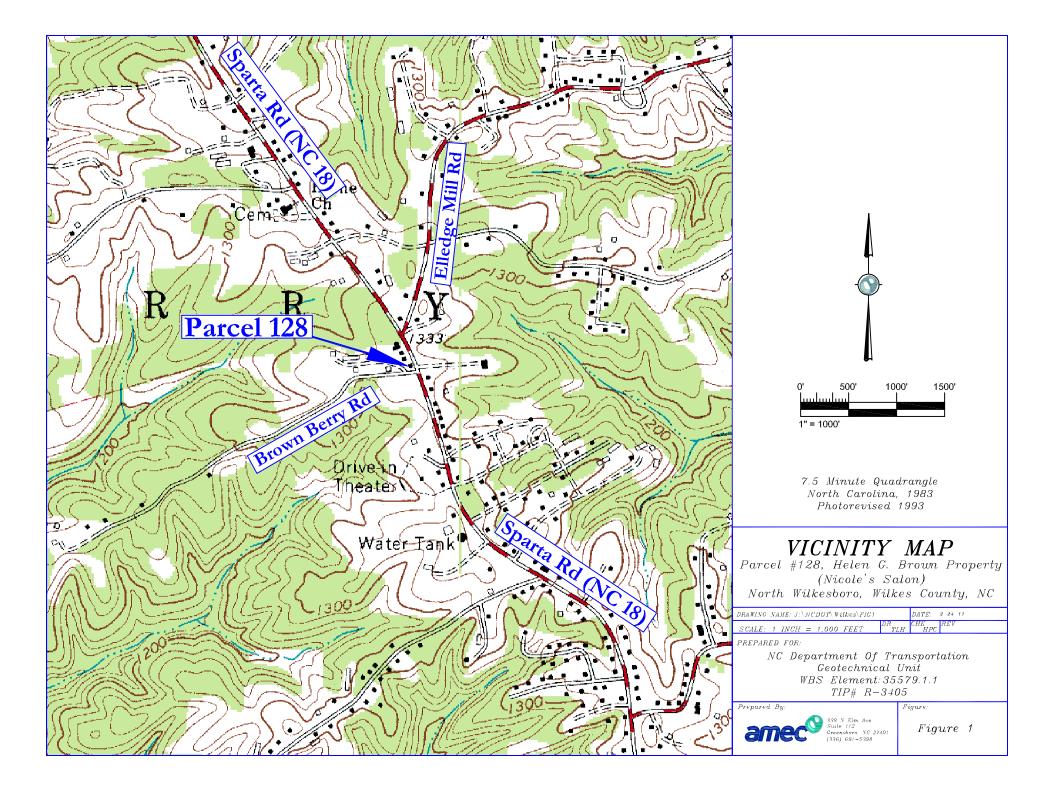
Bold Concentrations Exceed Action Levels

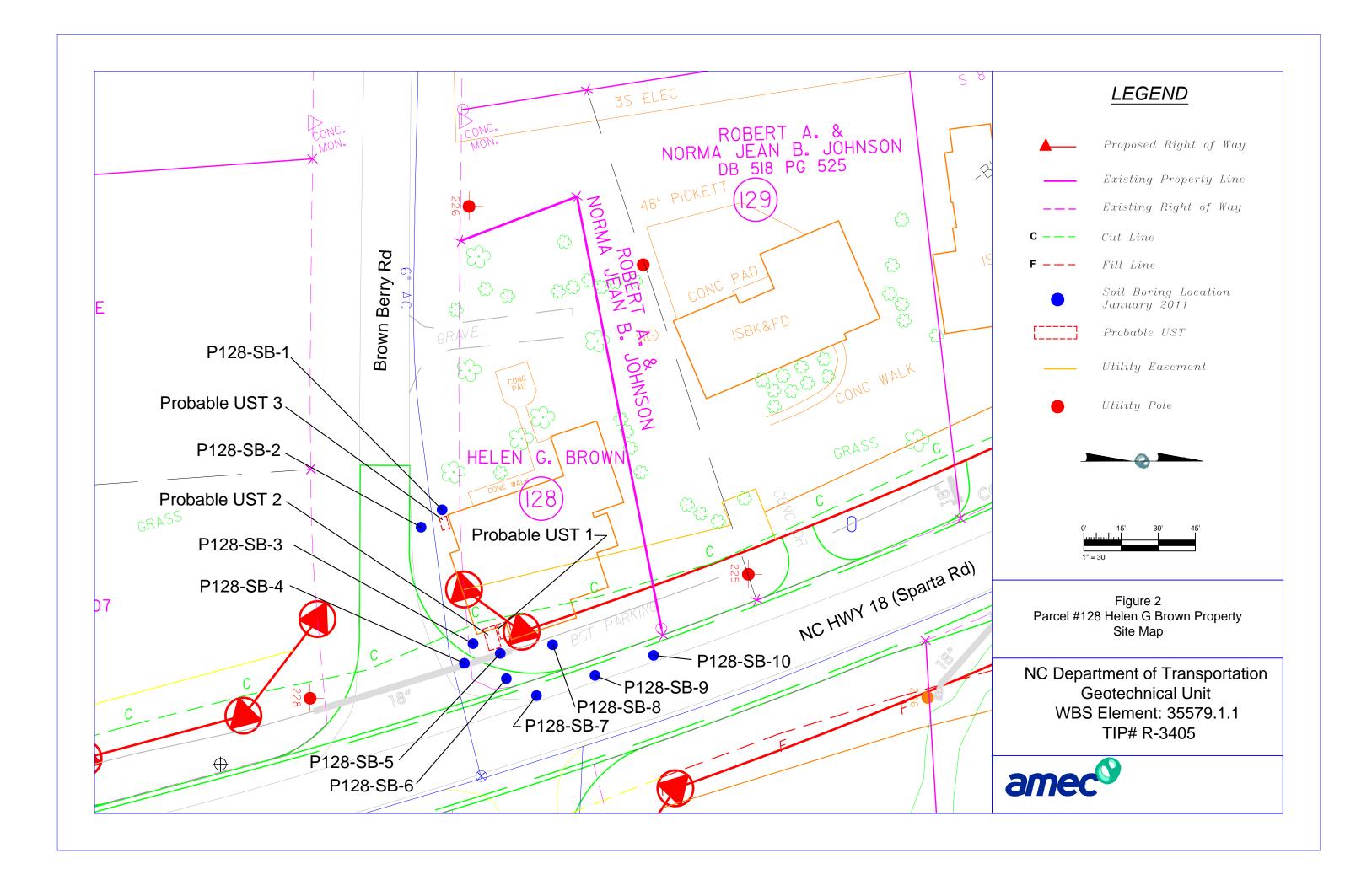
DRO = Diesel Range Organics

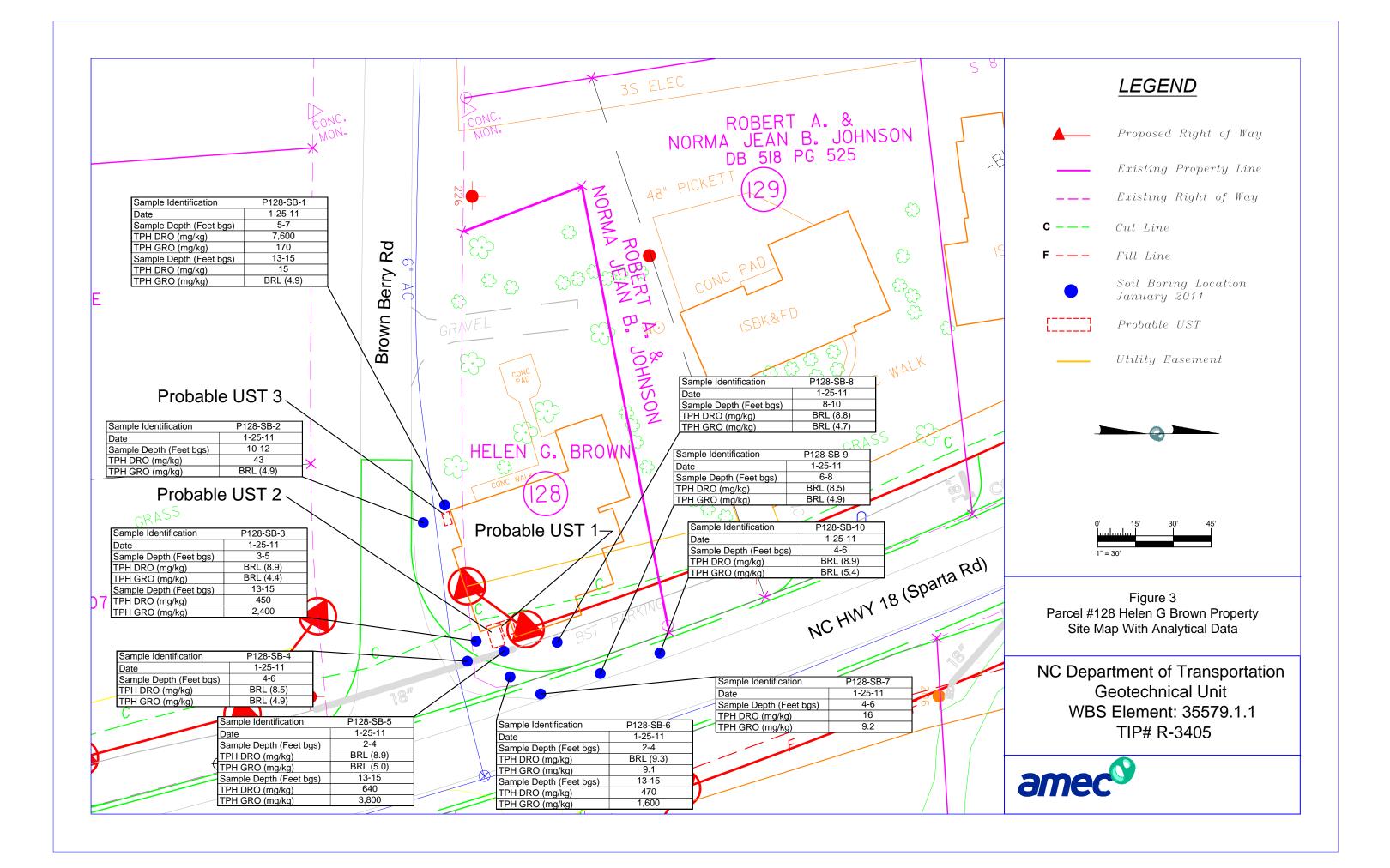
GRO = Gasoline Range Organics

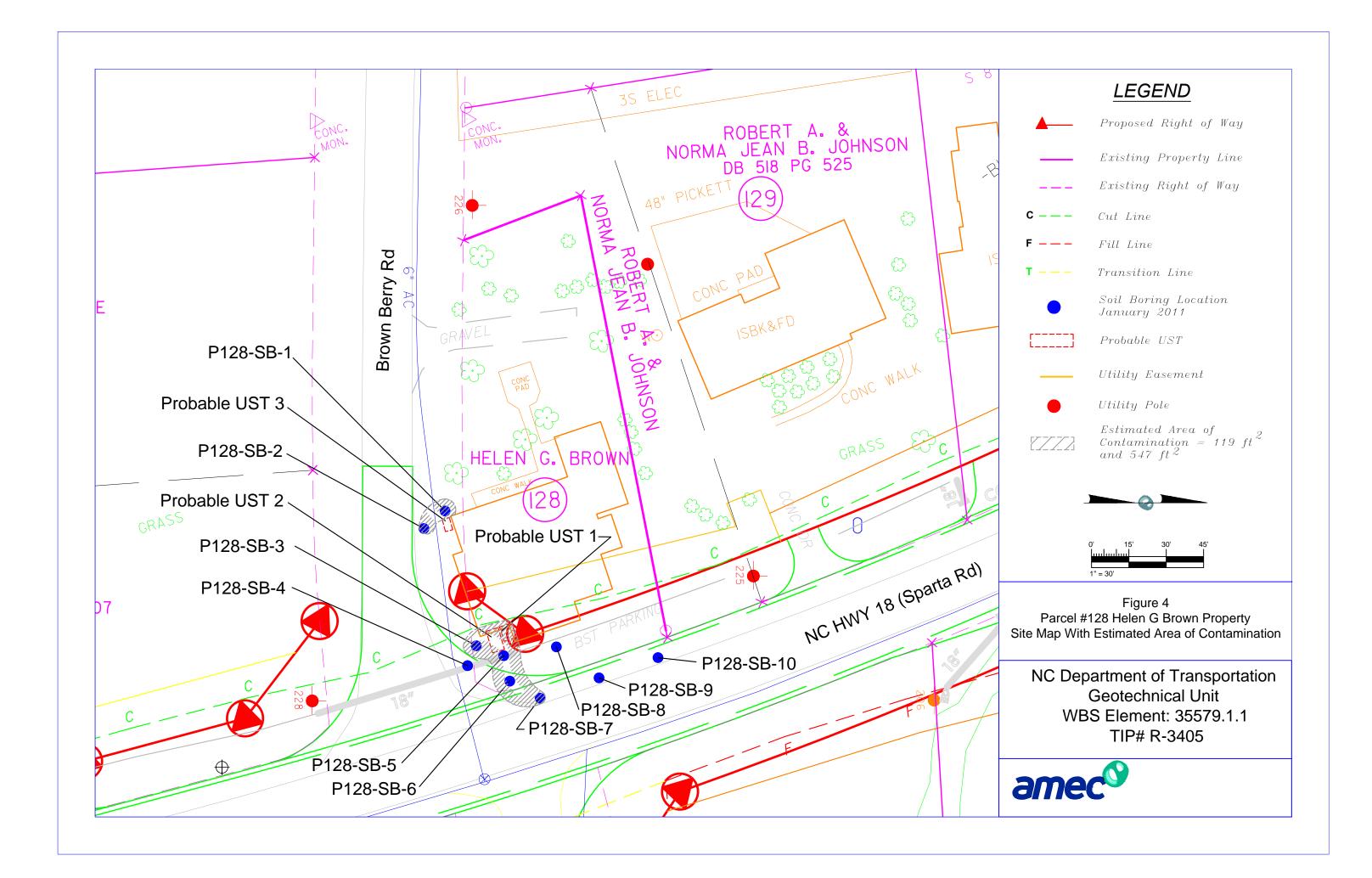
Standards derived from the North Carolina UST Section Guidelines for Assessment and Corrective Action











APPENDIX A

PHOTO LOG



Photo 1

Viewing west from directly across Sparta Road. The photo is of the site prior to drilling.



Photo 2

Viewing north from the southern side of the site. The photo shows UST-3.



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PROCESSED TLH
DATE January 2011
PAGE 1

Preliminary Site Assessment Parcel 128, Gary B. Miller Property North Wilkesboro, NC



Photo 3

Viewing west from southern side of the site. Photo is of CSI preparing to drill by UST-3



Photo 4

Viewing southeast from east central portion of the site. Photo is of CSI drilling east of UST-1 and UST-2



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PROCESSED TLH
DATE January 2011
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Preliminary Site Assessment Parcel 128, Gary B. Miller Property North Wilkesboro, NC APPENDIX B

BORING LOGS



AMEC Earth & Environmental, Inc.

	Site Name: Parcel 128
Date: 1-25-11	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5	,		Grass/Organic Soil
0.5-2	0		Orange, Well Sorted, Clayey Silt, Damp
2-5	0		Orange/Yellow, Well Sorted, Silt, Damp
5-7	60.1		Tan, Well Sorted, Silt, Damp
7-10	7.0		Pink, Well Sorted, Silt, Damp
10-12	6.1		Pink, Well Sorted, Silt, Damp
12-15	1.8		Pink, Well Sorted, Silt, Damp
	_		
		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Dia	meter:		Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
Screen Interva	l:		Bentonite Interval:
Sand Interval:			Slot Size:
			Or di Maria III. I



	Site Name: Parcel 128
Date: 1-25-11	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5			Grass/Organic Soil
0.5-4	0		Red, Well Sorted, Clayey Silt, Damp
4-6	0		Brown, Well Sorted, Silt, Damp
6-8	0		Tan, Well Sorted, Silt, Damp
8-10	0		Tan, Well Sorted, Silt, Damp
10-12	0.6		Tan, Well Sorted, Silt, Damp
12-15	0		Pink, Well Sorted, Silt, Damp
		WELL CONTRA	
/ell Type/Diar	neter:	WELL CONS	TRUCTION DETAILS (If Applicable) Outer Casing Interval:
otal Depth:			Outer Casing Diameter:
creen Interval	:		Bentonite Interval:
and Interval:			Slot Size:



Boring/Well No.: P128-SB3	Site Name: Parcel 128
Date: 1-25-11	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5			Grass/Organic Soil
0.5-3	0		Orange, Well Sorted, Clayey Silt, Damp
3-6	0		Orange, Well Sorted, Clayey Silt, Damp
6-8	651.1		Tan/Brown, Well Sorted, Silty Sand, Fine, Damp
8-11	846.5		Tan/Brown, Well Sorted, Silty Sand, Fine, Damp
11-13	987.3		Pink, Well Sorted, Silty Sand, Fine, Damp
13-15	1263.0		Pink, Well Sorted, Silty Sand, Fine, Damp
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		+	
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		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Diar	meter:		Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
Screen Interva	d:		Bentonite Interval:
Sand Interval:			Slot Size:
Grout Interval:			Static Water Level:



Boring/Well No.: P128-SB4	Site Name: Parcel 128
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	
0-0.5			Grass/Organic Soil
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-7	0.7		Tan, Well Sorted, Silt, Damp
7-9	0.5		Orange/Yellow, Well Sorted, Silt, Damp
9-11	0.3		Orange/Yellow, Well Sorted, Silt, Damp
11-13	0.1		Orange/Yellow, Well Sorted, Silt, Damp
13-15	0.1		Pink, Well Sorted, Silt, Damp
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		+	
		+	
		+	
		1	
		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Diameter:			Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
creen Interval	:		Bentonite Interval:



AMEC Earth & Environmental, Inc.

Boring/Well No.: P128-SB5	Site Name: Parcel 128
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5			Asphalt/Aggregate
0.5-4	82.4		Orange, Well Sorted, Clayey Silt, Damp
4-6	441.4		Yellow, Well Sorted, Silty Sand, Fine, Damp
6-8	451.6		Yellow, Well Sorted, Silty Sand, Fine, Damp
8-10	1224.3		Pink, Well Sorted, Silty Sand, Fine, Damp
10-12	1287.6		Pink, Well Sorted, Silty Sand, Fine, Damp
12-15	1483.1		Pink, Well Sorted, Silty Sand, Fine, Damp
		WELL CONS	TRUCTION DETAILS (If Applicable)
/ell Type/Diar	neter:		Outer Casing Interval:
otal Depth:			Outer Casing Diameter:
creen Interva	l:		Bentonite Interval:
Sand Interval:			Slot Size:



Boring/Well No.: P128-SB6	Site Name: Parcel 128
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	
0-0.5			Asphalt/Aggregate
0.5-4	20.1		Orange, Well Sorted, Clayey Silt, Damp
4-6	41.8		Orange, Well Sorted, Silt, Damp
6-8	648.3		Red, Well Sorted, Silt, Damp
8-9.5	939.5		Red, Well Sorted, Silt, Damp
9.5-13	987.6		Brown/Orange, Well Sorted, Silt, Damp
13-15	1134.1		Pink/Orange, Well Sorted, Silt, Damp
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		WELLOONS	TRUCTION RETAIL O (IC A I'- 1 1)
–		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Diameter:			Outer Casing Interval:
otal Depth:			Outer Casing Diameter:
creen Interval	<u>: </u>		Bentonite Interval:
			Slot Size:



AMEC Earth & Environmental, Inc.

Boring/Well No.: P128-SB7	Site Name: Parcel 128
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5	,		Asphalt/Aggregate
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-6	10.7		Orange, Well Sorted, Clayey Silt, Damp
6-8	5.8		Orange, Well Sorted, Silt, Damp
8-10	6.2		Orange/Pink, Well Sorted, Silt, Damp
		WELL CONS	I TRUCTION DETAILS (If Applicable)
Well Type/Diar	neter:		Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
Screen Interva	l:		Bentonite Interval:
Sand Interval:			Slot Size:
Grout Interval:			Static Water Level:



AMEC Earth & Environmental, Inc.

Boring/Well No.: P128-SB8	Site Name: Parcel 128
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Domth	PID/OVA		
Depth (ft BLS)	Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5	(ppiii)		Asphalt/Aggregate
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-6	3.3		Orange Well Sorted, Silt Damp
6-10	6.4		Orange, Well Sorted, Silt, Damp Yellow/Orange, Well Sorted, Silt, Damp
0.0	G. 1		Tonom, orango, tron contour, only panile
		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Dian	neter:		Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
Screen Interval	:		Bentonite Interval:
Sand Interval:			Slot Size:
Grout Interval:			Static Water Level:



Boring/Well No.: P128-SB9	Site Name: Parcel 128
Date: 1-25-11	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5	,		Asphalt/Aggregate
0.5-2	0.1		Orange, Well Sorted, Clayey Silt, Damp
2-4	0.8		Orange, Well Sorted, Clayey Silt, Damp
4-6	1.2		Orange, Well Sorted, Clayey Silt, Damp
6-8	1.8		Yellow/Orange, Well Sorted, Silt, Damp
8-10	1.4		Yellow/Orange, Well Sorted, Silt, Damp
	l .	WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Diameter:			Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
Screen Interval:			Bentonite Interval:
and Interval:			Slot Size:
			10, ,, 14, , 1 , 1



Boring/Well No.: P128-SB10	Site Name: Parcel 128
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5	(PP)		Asphalt/Aggregate
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-6	0		Orange, Well Sorted, Silt, Damp
6-10	0		Pink/Orange, Well Sorted, Silt, Damp
		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Diameter:			Outer Casing Interval:
Гotal Depth:			Outer Casing Diameter:
Screen Interval:			Bentonite Interval:
Sand Interval:			Slot Size:

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 128, 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 four 8.5x11 color figures.

INTRODUCTION

The work described in this report was conducted on December 9 and 22, 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 northwest quadrant of the intersection of Brown Berry Road and Sparta 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. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over areas of reinforced concrete and anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. 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 Parcel 128 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 of unknown cause, in addition to those apparently caused by reinforced concrete, buried utilities, or known site features (Figures 3 and 4). The GPR data collected near the easternmost building corner indicate the presence of two probable USTs located within approximately 10 to 20 feet of the easternmost building corner. The GPR data collected near the southernmost building corner indicate the presence of a probable UST located within approximately 5 to 10 feet of the southernmost building corner. The USTs are inside the limits of the planned right-of way and/or easement. Example GPR images showing the reflections from the probable USTs are shown on Figure 5. Figures 3 and 4 show the location of the probable USTs as marked in the field. Apparent fill and vent pipes are present at the location of probable UST No. 3.

The GPR data indicate that Probable UST No. 1 is buried approximately 3.0 to 4.0 feet below ground surface, and is about 5 feet in diameter and at least 6 feet long, equivalent to a capacity of at least 1,000 gallons. The GPR data indicate that Probable UST No. 2 is buried approximately 3.0 to 4.0 feet below ground surface, and is about 5 feet in diameter and at least 9 feet long, equivalent to a capacity of at least 1,500 gallons. It was not possible to determine the exact lengths of probable UST Nos. 1 and 2 because of their proximity to the building, so the capacities may be underestimated. The GPR data indicate that Probable UST No. 3 is buried approximately 1.5 to 2.5 feet below ground surface, and is about 3 feet in diameter and about 5 feet long, equivalent to a capacity of about 270 gallons. Photographs of the probable UST locations, as marked in the field, are included on Figure 6.

NCDOT, Geotechnical Engineering Unit State Project R-3405, Wilkes County

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 indicate the presence of three probable USTs on Parcel 128. The three USTs are inside the planned right-of-way and/or easement. Probable UST No. 1 is about 1,000-gallon capacity and is buried about 3.0 to 4.0 feet below ground surface. Probable UST No. 2 is about 1,500-gallon capacity and is buried about 3.0 to 4.0 feet below ground surface. It was not possible to determine the exact lengths of probable UST Nos. 1 and 2 because of their proximity to the building, so the capacities may be underestimated. Probable UST No. 3 is about 270-gallon capacity and is buried about 1.5 to 2.5 feet below ground surface.

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 (6)

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.34 (R-3405, WILKES COUNTY)\REPORT\PARCEL 128\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 128 (R-3405).DOCX



Parcel 128 – Helen G. Brown Property, looking northwest



Parcel 128 - Helen G. Brown Property, looking northeast



STATE PROJECT R-3405 NC DEPT. OF TRANSPORTATION WILKES CO., NORTH CAROLINA PROJECT NO. 09210013.34

PARCEL 128 SITE PHOTOS

FIGURE 1



Geonics EM61-MK2

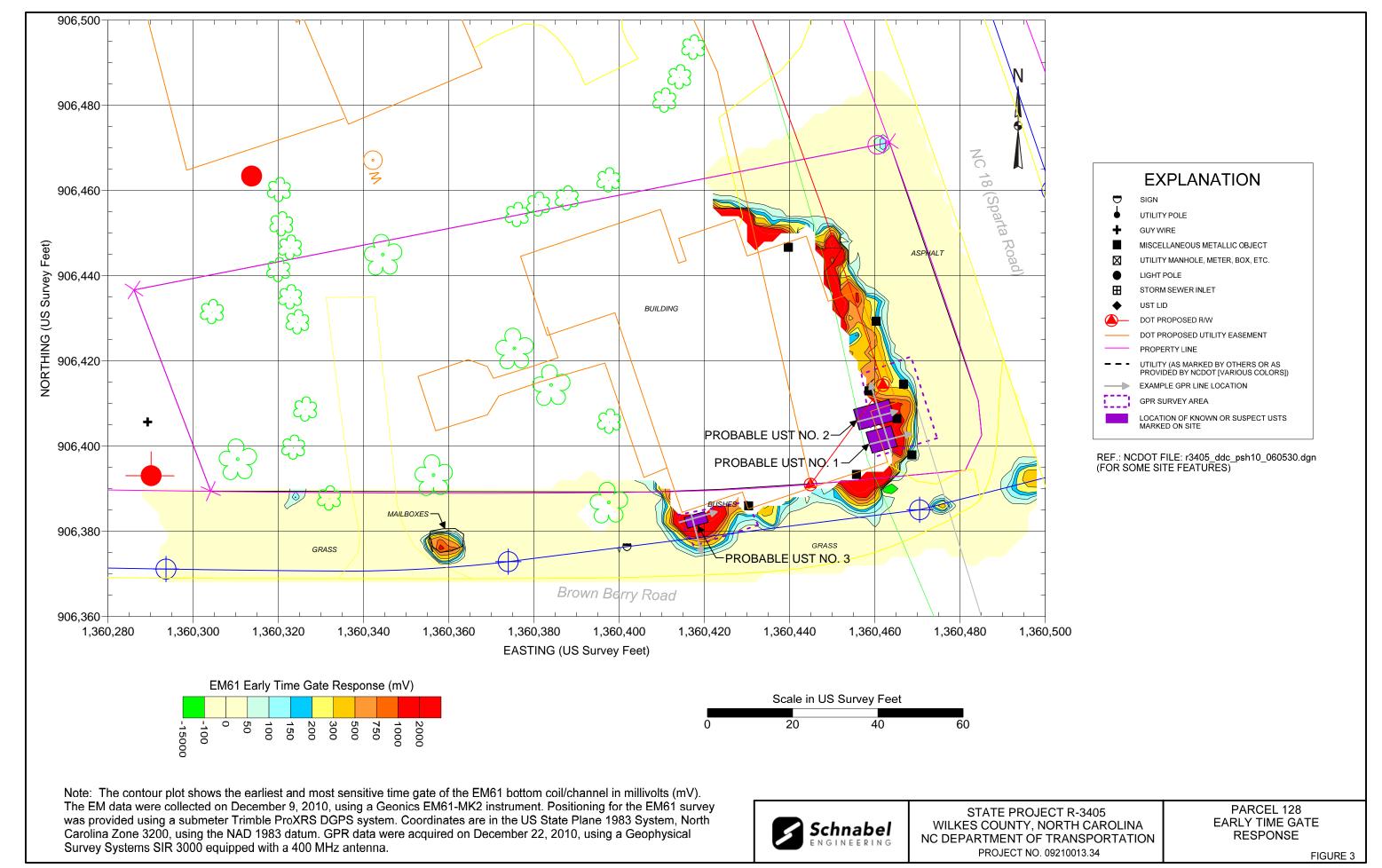


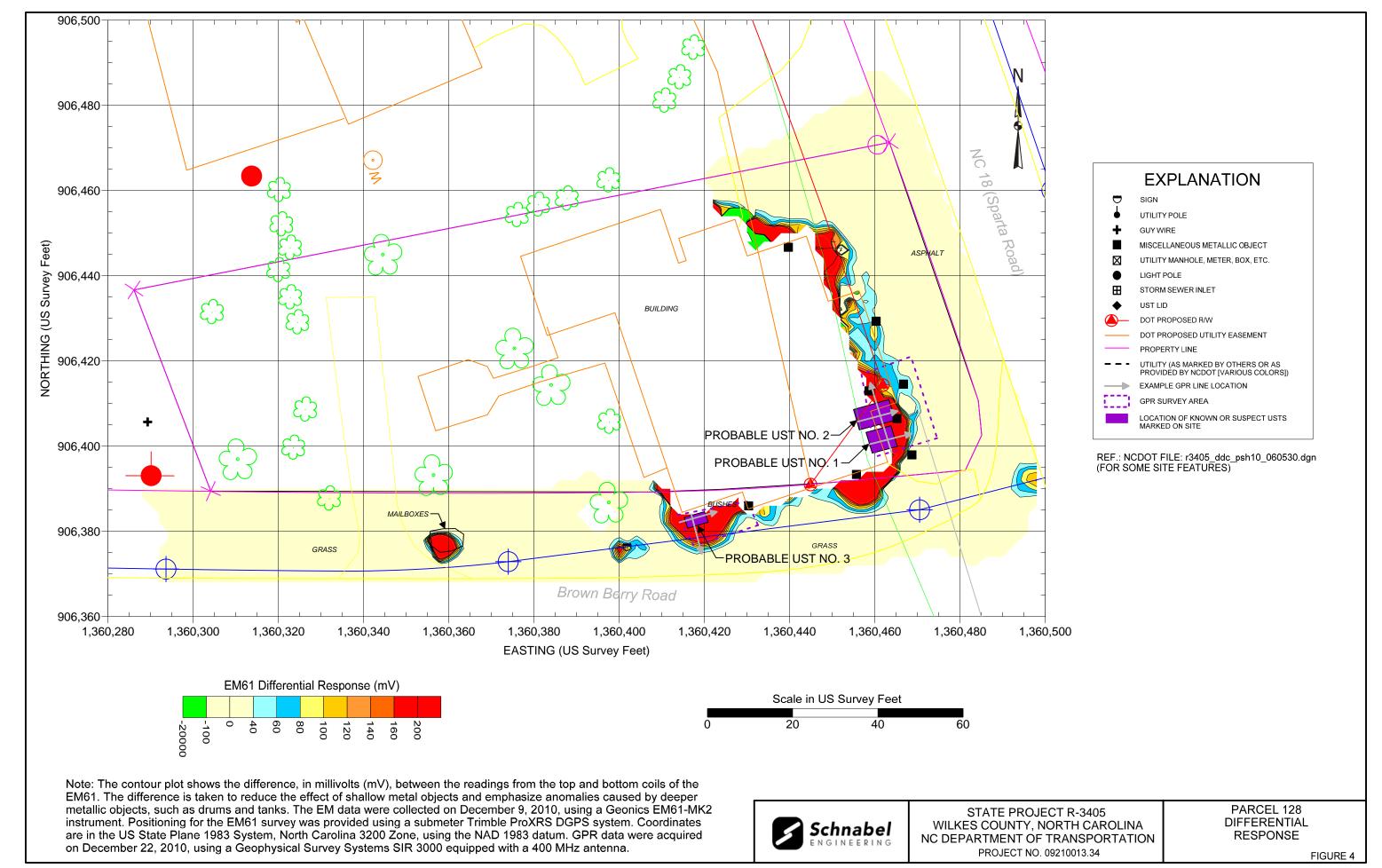
GSSI SIR-3000

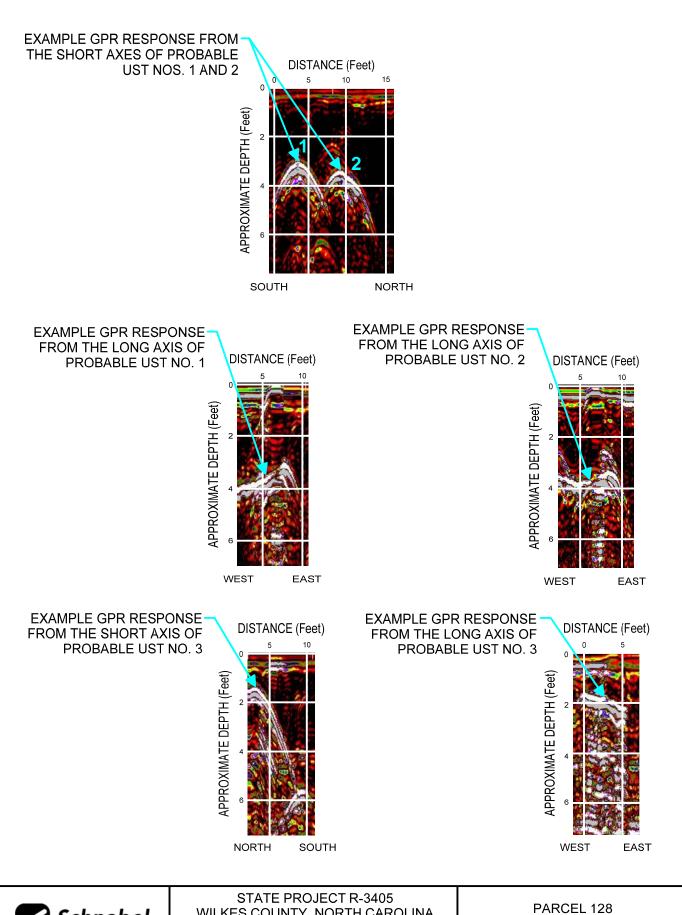


STATE PROJECT R-3405 NC DEPT. OF TRANSPORTATION WILKES CO., NORTH CAROLINA PROJECT NO. 09210013.34 PHOTOS OF GEOPHYSICAL EQUIPMENT USED

FIGURE 2









WILKES COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.34

GPR IMAGES

FIGURE 5



Parcel 128 – Helen G. Brown Property, looking west. Photo shows approximate marked location of Probable UST Nos. 1 and 2 near the easternmost building corner.



Parcel 128 – Helen G. Brown Property, looking north. Photo shows approximate marked location of Probable UST No. 3 near the southernmost building corner.



STATE PROJECT R-3405 WILKES CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.34

PHOTOS OF PROBABLE UST LOCATIONS

FIGURE 6

APPENDIX D

LABORATORY ANALYTICAL RESULTS



NC Certification No. 402 SC Certification No. 99012 NC Drinking Water Cert No. 37735 **Case Narrative**

02/02/2011

AMEC Earth & Env. Inc.(DOT Gree) Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County Parcel 128

Project No.: WBS #34749.1.1 Lab Submittal Date: 01/26/2011 Prism Work Order: 1010531

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

Korti a. 9

Data Qualifiers Key Reference:

A Surrogate recovery above the control limits. GRO was not detected in the sample. No further action was taken.

Aa Surrogate recovery outside established limits due to matrix interference.

DO Surrogates diluted out.

M Matrix spike outside of the control limits.

SR Surrogate recovery outside the QC limits.

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.



Sample Receipt Summary

02/02/2011

Prism Work Order: 1010531

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
P128-SB-1(5-7)	1010531-01	Solid	01/25/11	01/26/11
P128-SB-1(13-15)	1010531-02	Solid	01/25/11	01/26/11
P128-SB-2(10-12)	1010531-03	Solid	01/25/11	01/26/11
P128-SB-3(3-5)	1010531-04	Solid	01/25/11	01/26/11
P128-SB-3(13-15)	1010531-05	Solid	01/25/11	01/26/11
P128-SB-4(4-6)	1010531-06	Solid	01/25/11	01/26/11
P128-SB-5(2-4)	1010531-07	Solid	01/25/11	01/26/11
P128-SB-5(13-15)	1010531-08	Solid	01/25/11	01/26/11
P128-SB-6(2-4)	1010531-09	Solid	01/25/11	01/26/11
P128-SB-6(13-15)	1010531-10	Solid	01/25/11	01/26/11
P128-SB-7(4-6)	1010531-11	Solid	01/25/11	01/26/11
P128-SB-8(8-10)	1010531-12	Solid	01/25/11	01/26/11
P128-SB-9(6-8)	1010531-13	Solid	01/25/11	01/26/11
P128-SB-10(4-6)	1010531-14	Solid	01/25/11	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 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-1(5-7)
Prism Sample ID: 1010531-01
Prism Work Order: 1010531
Time Collected: 01/25/11 09:30
Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analys Date/Ti		Analyst	Batch ID
Diesel Range Organics by GC/FID										
Diesel Range Organics	7600	mg/kg dry	330	53	40	*8015C	1/31/11	9:43	JMV	P1A0489
			Surrogate			Recov	very		Control L	imits
			o-Terphenyl			0	%		49-124	DO
Gasoline Range Organics by GC/F	ID									
Gasoline Range Organics	170	mg/kg dry	5.0	0.64	50	*8015C	1/28/11	4:44	HPE	P1A0466
			Surrogate			Recov	very		Control L	imits
			a,a,a-Trifluo	rotoluene		12	5 %		55-129	
General Chemistry Parameters										
% Solids	84.6	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11	16:15	JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-1(13-15)
Prism Sample ID: 1010531-02
Prism Work Order: 1010531
Time Collected: 01/25/11 09:40

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	15	mg/kg dry	8.4	1.4	1	*8015C	1/28/11 12:56	JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terpheny			98	3 %	49-124	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.9	0.64	50	*8015C	1/27/11 19:2	I HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluc	rotoluene		14	0 %	55-129	Α
General Chemistry Parameters									
% Solids	83.2	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	j JAB	P1A0542



02/02/2011



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

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-2(10-12)
Prism Sample ID: 1010531-03
Prism Work Order: 1010531
Time Collected: 01/25/11 09:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	43	mg/kg dry	8.1	1.3	1	*8015C	1/28/11 13:31	JMV	P1A0489
			Surrogate			Recov	very	Control I	Limits
			o-Terphenyl			88	3 %	49-124	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.9	0.63	50	*8015C	1/27/11 18:50	HPE	P1A0466
			Surrogate			Recov	very	Control I	Limits
			a,a,a-Trifluo	rotoluene		16	0 %	55-129	Α
General Chemistry Parameters									
% Solids	85.9	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-3(3-5) Prism Sample ID: 1010531-04 Prism Work Order: 1010531 Time Collected: 01/25/11 10:05 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.9	1.4	1	*8015C	1/28/11 14:0	6 JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terphenyl			10	4 %	49-124	
Gasoline Range Organics by GC/FIE)								
Gasoline Range Organics	BRL	mg/kg dry	4.4	0.57	50	*8015C	1/27/11 19:5	2 HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluo	rotoluene		14	3 %	55-129	Α
General Chemistry Parameters									
% Solids	78.7	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:1	5 JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-3(13-15)
Prism Sample ID: 1010531-05
Prism Work Order: 1010531
Time Collected: 01/25/11 10:10

Parameter	Result	Units	Report	MDL	Dilution	Method	Analysis	Analyst	Batch
Tarameter	resuit	Office	Limit	IVIDL	Factor	Motriod	Date/Time		ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	450	mg/kg dry	85	14	10	*8015C	1/28/11 23:32	2 JMV	P1A0489
			Surrogate			Recov	/ery	Control I	Limits
			o-Terphenyl			10	5 %	49-124	
Gasoline Range Organics by GC/F	D								
Gasoline Range Organics	2400	mg/kg dry	180	24	2000	*8015C	1/28/11 5:47	HPE	P1A0466
			Surrogate			Recov	very	Control I	Limits
			a,a,a-Trifluo	otoluene		0	%	55-129	DC
General Chemistry Parameters									
% Solids	81.9	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	5 JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-4(4-6) Prism Sample ID: 1010531-06 Prism Work Order: 1010531 Time Collected: 01/25/11 10:25 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.5	1.4	1	*8015C	1/28/11 14:42	. JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terphenyl			90) %	49-124	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.9	0.64	50	*8015C	1/27/11 20:23	HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluo	rotoluene		13	8 %	55-129	Α
General Chemistry Parameters									
% Solids	82.1	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	JAB	P1A0542



02/02/2011



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

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-5(2-4) Prism Sample ID: 1010531-07 Prism Work Order: 1010531 Time Collected: 01/25/11 10:35 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.9	1.4	1	*8015C	1/28/11 15:17	7 JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terphenyl			10	4 %	49-124	
Gasoline Range Organics by GC/FID)								
Gasoline Range Organics	BRL	mg/kg dry	5.0	0.66	50	*8015C	1/27/11 20:5	5 HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluo	rotoluene		12	8 %	55-129	
General Chemistry Parameters									
% Solids	77.7	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	jab	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-5(13-15)
Prism Sample ID: 1010531-08
Prism Work Order: 1010531
Time Collected: 01/25/11 10:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analy: Date/T		Analyst	Batch ID
Diesel Range Organics by GC/FID										
Diesel Range Organics	640	mg/kg dry	81	13	10	*8015C	1/29/11	0:08	JMV	P1A0489
			Surrogate			Recov	very		Control L	imits
			o-Terphenyl			10	7 %		49-124	
Gasoline Range Organics by GC/FI	D									
Gasoline Range Organics	3800	mg/kg dry	200	26	2000	*8015C	1/28/11	5:16	HPE	P1A0466
			Surrogate			Recov	very		Control L	imits
			a,a,a-Trifluo	rotoluene		0	%		55-129	DO
General Chemistry Parameters										
% Solids	86.4	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11	16:15	JAB	P1A0542



02/02/2011



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

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-6(2-4) Prism Sample ID: 1010531-09 Prism Work Order: 1010531 Time Collected: 01/25/11 11:00 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	9.3	1.5	1	*8015C	1/28/11 15:52	2 JMV	P1A0489
			Surrogate			Recov	very	Control	Limits
			o-Terphenyl			95	5 %	49-124	
Gasoline Range Organics by GC/F	ID								
Gasoline Range Organics	9.1	mg/kg dry	5.3	0.69	50	*8015C	1/27/11 21:26	HPE	P1A0466
			Surrogate			Recov	very	Control	Limits
			a,a,a-Trifluo	rotoluene		12	7 %	55-129	
General Chemistry Parameters									
% Solids	74.7	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	jab	P1A0542



02/02/2011



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

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-6(13-15)
Prism Sample ID: 1010531-10
Prism Work Order: 1010531
Time Collected: 01/25/11 11:10

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	470	mg/kg dry	42	6.8	5	*8015C	1/31/11 10:19	JMV	P1A0489
			Surrogate			Reco	very	Control I	_imits
			o-Terphenyl			14	1 %	49-124	Aa
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	1600	mg/kg dry	200	26	2000	*8015C	1/28/11 10:33	HPE	P1A0466
			Surrogate			Reco	very	Control I	_imits
			a,a,a-Trifluoi	rotoluene		0	%	55-129	DO
General Chemistry Parameters									
% Solids	82.4	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:15	JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-7(4-6)
Prism Sample ID: 1010531-11
Prism Work Order: 1010531
Time Collected: 01/25/11 11:20
Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	16	mg/kg dry	8.2	1.3	1	*8015C	1/28/11 16	28 JMV	P1A0489
			Surrogate			Recov	very	Control	Limits
			o-Terphenyl			10	8 %	49-124	
Gasoline Range Organics by GC/FI	D								
Gasoline Range Organics	9.2	mg/kg dry	5.2	0.68	50	*8015C	1/28/11 10:	01 HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluoi	rotoluene		11	9 %	55-129	
General Chemistry Parameters									
% Solids	85.4	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16	15 JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-8(8-10) Prism Sample ID: 1010531-12 Prism Work Order: 1010531 Time Collected: 01/25/11 11:40 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.8	1.4	1	*8015C	1/28/11 17:0	3 JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terphenyl			10	4 %	49-124	
Gasoline Range Organics by GC/FID)								
Gasoline Range Organics	BRL	mg/kg dry	4.7	0.61	50	*8015C	1/28/11 0:02	2 HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluorotoluene			17	0 %	55-129	Α
General Chemistry Parameters									
% Solids	79.0	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:1	5 JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-9(6-8) Prism Sample ID: 1010531-13 Prism Work Order: 1010531 Time Collected: 01/25/11 11:50 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.5	1.4	1	*8015C	1/28/11 17:3	9 JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terphenyl			94	1 %	49-124	
Gasoline Range Organics by GC/FI	D								
Gasoline Range Organics	BRL	mg/kg dry	4.9	0.63	50	*8015C	1/28/11 0:33	B HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluo	rotoluene		14	4 %	55-129	Α
General Chemistry Parameters									
% Solids	81.9	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:1	5 JAB	P1A0542







Project: NCDOT: Wilkes County

Parcel 128

Project No.: WBS #34749.1.1

Sample Matrix: Solid

Client Sample ID: P128-SB-10(4-6) Prism Sample ID: 1010531-14 Prism Work Order: 1010531 Time Collected: 01/25/11 12:00 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID	
Diesel Range Organics by GC/FID										
Diesel Range Organics	BRL	mg/kg dry	8.9	1.4	1	*8015C	1/28/11 18:4	9 JMV	P1A0489	
			Surrogate			Reco	very	Control Limits		
			o-Terphenyl			88	8 %	49-124		
Gasoline Range Organics by GC/FID										
Gasoline Range Organics	BRL	mg/kg dry	5.4	0.70	50	*8015C	1/28/11 1:05	5 HPE	P1A0466	
			Surrogate			Reco	very	Control	Limits	
			a,a,a-Trifluo	rotoluene		14	4 %	55-129	Α	
General Chemistry Parameters										
% Solids	78.4	% by Weight	0.100	0.100	1	*SM2540 G	1/31/11 16:1	5 JAB	P1A0542	



Project: NCDOT: Wilkes County Parcel

128

Project No: WBS #34749.1.1

Prism Work Order: 1010531

Time Submitted: 1/26/11 1:12:00PM

Gasoline Range Organics by GC/FID - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P1A0466 - 5035										
Blank (P1A0466-BLK1)			ı	Prepared	& Analyze	ed: 01/27/1	1			
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	5.40		mg/kg wet	5.00		108	55-129			
LCS (P1A0466-BS1)			ı	Prepared	& Analyze	ed: 01/27/1	1			
Gasoline Range Organics	42.3	5.0	mg/kg wet	50.0		85	67-116			
Surrogate: a,a,a-Trifluorotoluene	5.35		mg/kg wet	5.00		107	55-129			
LCS Dup (P1A0466-BSD1)			ı	Prepared	& Analyze	d: 01/27/1	1			
Gasoline Range Organics	42.9	5.0	mg/kg wet	50.0		86	67-116	1	200	
Surrogate: a,a,a-Trifluorotoluene	5.25		mg/kg wet	5.00		105	55-129			
Matrix Spike (P1A0466-MS1)	Sour	ce: 101053	1-03	Prepared	& Analyze	d: 01/27/1	1			
Gasoline Range Organics	76.7	5.8	mg/kg dry	58.2	BRL	132	57-113			М
Surrogate: a,a,a-Trifluorotoluene	10.7		mg/kg dry	5.82		184	55-129			SR
Matrix Spike Dup (P1A0466-MSD1)	Sour	ce: 101053	1-03 F	Prepared	& Analyze	d: 01/27/1	1			
Gasoline Range Organics	76.3	5.8	mg/kg dry	58.2	BRL	131	57-113	0.5	23	M
Surrogate: a,a,a-Trifluorotoluene	10.8		mg/kg dry	5.82		186	55-129			SR



Project: NCDOT: Wilkes County Parcel

Project No: WBS #34749.1.1

Prism Work Order: 1010531

Time Submitted: 1/26/11 1:12:00PM

Diesel Range Organics by GC/FID - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P1A0489 - 3545A										
Blank (P1A0489-BLK1)			ı	Prepared	01/27/11	Analyzed	: 01/28/11			
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.31		mg/kg wet	1.60		82	49-124			
LCS (P1A0489-BS1)			ı	Prepared	01/27/11	Analyzed	: 01/28/11			
Diesel Range Organics	57.3	7.0	mg/kg wet	79.7		72	55-109			
Surrogate: o-Terphenyl	1.39		mg/kg wet	1.59		87	49-124			
LCS Dup (P1A0489-BSD1)			ı	Prepared	01/27/11	Analyzed	: 01/28/11			
Diesel Range Organics	59.3	7.0	mg/kg wet	79.8		74	55-109	3	200	
Surrogate: o-Terphenyl	1.43		mg/kg wet	1.60		89	49-124			



Project: NCDOT: Wilkes County Parcel

128

Project No: WBS #34749.1.1

Danamina

Prism Work Order: 1010531

Time Submitted: 1/26/11 1:12:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Level	Result	%REC	%REC Limits	RPD	Limit	Notes
Batch P1A0542 - NO PREP										
Blank (P1A0542-BLK1)				Prepared	& Analyze	ed: 01/31/1	1			
% Solids	100	0.100	% by Weight	t						
Duplicate (P1A0542-DUP1)	So	urce: 1010531	1-09	Prepared	& Analyze	ed: 01/31/1	1			
% Solids	78.4	0.100	% by Weight		74.7			5	20	

Sample Extraction Data

Prep Method: 3545A

1010531-14

P1A0542

30 g

Lab Number	Batch	Initial	Final	Date	
1010531-01	P1A0489	25.1 g	1 mL	01/27/11	
1010531-02	P1A0489	25.13 g	1 mL	01/27/11	
1010531-03	P1A0489	25.08 g	1 mL	01/27/11	
1010531-04	P1A0489	25.04 g	1 mL	01/27/11	
1010531-05	P1A0489	25.06 g	1 mL	01/27/11	
1010531-06	P1A0489	25.02 g	1 mL	01/27/11	
1010531-07	P1A0489	25.18 g	1 mL	01/27/11	
1010531-08	P1A0489	25.03 g	1 mL	01/27/11	
1010531-09	P1A0489	25.06 g	1 mL	01/27/11	
1010531-10	P1A0489	25.14 g	1 mL	01/27/11	
1010531-11	P1A0489	25.14 g	1 mL	01/27/11	
1010531-12	P1A0489	25.14 g	1 mL	01/27/11	
1010531-13	P1A0489	25.01 g	1 mL	01/27/11	
1010531-14	P1A0489	25.13 g	1 mL	01/27/11	
Prep Method: 5035					
Lab Number	Batch	Initial	Final	Date	
1010531-01	P1A0466	5.96 g	5 mL	01/27/11	
1010531-02	P1A0466	6.14 g	5 mL	01/27/11	
1010531-03	P1A0466	5.99 g	5 mL	01/27/11	
1010531-04	P1A0466	7.25 g	5 mL	01/27/11	
1010531-05	P1A0466	6.73 g	5 mL	01/27/11	
1010531-06	P1A0466	6.23 g	5 mL	01/27/11	
1010531-07	P1A0466	6.38 g	5 mL	01/27/11	
1010531-08	P1A0466	5.89 g	5 mL	01/27/11	
1010531-09	P1A0466	6.27 g	5 mL	01/27/11	
1010531-10	P1A0466	5.96 g	5 mL	01/27/11	
1010531-11	P1A0466	5.6 g	5 mL	01/27/11	
1010531-12	P1A0466	6.7 g	5 mL	01/27/11	
1010531-13	P1A0466	6.26 g	5 mL	01/27/11	
1010531-14	P1A0466	5.9 g	5 mL	01/27/11	
NO PREP					
Lab Number	Batch	Initial	Final	Date	
1010531-01	P1A0542	30 g	30 mL	01/31/11	
1010531-02	P1A0542	30 g	30 mL	01/31/11	
1010531-03	P1A0542	30 g	30 mL	01/31/11	
1010531-04	P1A0542	30 g	30 mL	01/31/11	
1010531-05	P1A0542	30 g	30 mL	01/31/11	
1010531-06	P1A0542	30 g	30 mL	01/31/11	
1010531-07	P1A0542	30 g	30 mL	01/31/11	
1010531-08	P1A0542	30 g	30 mL	01/31/11	
1010531-09	P1A0542	30 g	30 mL	01/31/11	
1010531-10	P1A0542	30 g	30 mL	01/31/11	
1010531-11	P1A0542	30 g	30 mL	01/31/11	
1010531-12	P1A0542	30 g	30 mL	01/31/11	
1010531-13	P1A0542	30 g	30 mL	01/31/11	
1010501 11					

30 mL

01/31/11



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		TIME	MATRIX	SAMPL	E CONTA	AINER			ANA	YSES REQ	UESTED	, ,		PRISM			
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		HOURS	SLUDGE)	SEE BELOW	NO.	SIZE		1	De Brix					ID NO.			
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1128-58-2 10-12)	950						X	٧			Х		03			
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P128-58-4/4-6)	a.	1025				<u> </u>		X	K			50-11		06			
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submitted in writing to t Relinquished By: (Signature)	he Prism Proj	ect Manager. Th	ere Will be ci	narges for any	changes	after analys	es have been in	itialized				े श्रे	PRISM	USE ONLY			
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	LABORATORIES, INC.

NPDES:

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_NC _SC _NC _SC _NC _SC

GROUNDWATER:

DRINKING WATER:

□NC □SC

SOLID WASTE:

□NC □SC

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

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ite Location Physical	Address:	WILK	asbolo	(SEE REVE	RSE FOR TI	ERMS & COND!	ays, excluding wee	SERVICES						ollection: YI		NO	
		TIME	MATRIX	4			ES, INC. TO CLIENT)				QUESTE					
CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	COLLECTED MILITARY HOURS	(SOIL, WATER OR SLUDGE)	*TYPE SEE BELOW	E CONTA	SIZE	PRESERVA- TIVES	1	30	day				RE	EMARKS		PRISM LAB ID NO.
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SEE REVERSE FOR TERMS & CONDITIONS Page 22 of 22

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