FROEHLING & ROBERTSON, INC.

PRELIMINARY SITE ASSESSMENT

BRUCE LUTHER PROPERTY (PARCEL #36)
1178 N US 220 Hwy
Rockingham, NC
State Project: R-3421C
WBS Element: 34542.1.2
February 28, 2011

Prepared for:

North Carolina Department of Transportation
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

310 Hubert Street Raleigh, North Carolina 27603 919.828.3441

SINCE 1881

FROEHLING & ROBERTSON, INC.

Engineering Stability Since 1881

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February 28, 2011

North Carolina Department of Transportation
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, North Carolina 27610

NORTH CAROLINA PROFESSIONAL SEAL 029927 ENGINEER MICHAEL S. SABODISH, JR.
2-28-11

Attn.: Mr. Ethan J. Caldwell, L.G., P.E.
GeoEnvironmental Project Manager

Re: State Project: R-3421C
WBS Element: 34542.1.2
US 220 Bypass from Southwest of SR 1304 (Harrington Road) to Future US 220 Business/US 220 Bypass Interchange South of Ellerbe

Subject: **Preliminary Site Assessment**
Bruce Luther Property (Parcel #36)
1178 N US 220 Hwy
Rockingham, NC

Dear Mr. Caldwell:

Froehling and Robertson, Inc. (F&R) has completed the authorized Preliminary Site Assessment at the Bruce Luther Property in Rockingham, North Carolina. The work was performed in general accordance with F&R's Proposal No. 1166-336E dated December 8, 2010 and revised December 12, 2010. This report documents our field activities, presents the results of laboratory analysis and provides recommendations regarding the property.

Please do not hesitate to contact us if you should have any questions regarding this report.

Sincerely,

FROEHLING & ROBERTSON, INC.

Michael S. Sabodish, Jr., Ph.D., P.E.
Engineering and Remediation Services Manager

Christopher J. Burkhardt
Environmental Department Manager

TABLE OF CONTENTS

Preliminary Site Assessment Report
Bruce Luther Property (Parcel #36)
Rockingham, Richmond County, North Carolina
F&R Project No. 66M-0178-0003

1.0 Introduction

Froehling and Robertson, Inc. (F&R) has prepared this Preliminary Site Assessment Report (PSA) to document soil assessment activities performed at the Bruce Luther Property (Parcel #36) addressed as 1178 US 220 Hwy, Rockingham, Richmond County, North Carolina. The site is located on the southeast quadrant of the intersection of Haywood Cemetery Road and US 220 Hwy (Appendix I, Figure 1). Currently, the site is a gravel parking lot. However, based on information collected in interviews with local residents conducted by the North Carolina Department of Transportation (NCDOT), this site may have operated as a gas station at one time. This work was performed in general accordance with F&R's Proposal No. 1166-336E dated December 8, 2010 and revised December 12, 2010. The purpose of this report is to document field activities, present the results of laboratory analysis, and provide recommendations regarding the property.

Based on conversations and a site visit with NCDOT, it has been determined that the proposed construction of "service road #2" extending from US Hwy 220 to Haywood Cemetery Road will impact the project site (See Figure No.3). As such, the NCDOT requested a Preliminary Site Assessment be performed to assess the possibility of encountering petroleum impacted soil from known or unknown USTs which may exist/existed at the project site. As previously mentioned, the site is currently a gravel covered parking lot. However, during a site reconnaissance meeting prior to starting the work, F&R visually observed concrete at the ground surface which was believed to be associated with the foundation of the former building. The concrete was located parallel to US Hwy 220 and extended for approximately 20 feet across the site. Photos detailing existing site features are attached as Appendix IV of this report.

2.0 Geophysical Survey

Prior to F&R's soil assessment activities, Schnabel Engineering conducted a geophysical survey of the project site to locate suspect metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement. The geophysical work was conducted on January 4 and 5, 2011 under Schnabel's 2009 contract with NCDOT.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies were investigated using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart, while the GPR data were collected along survey lines spaced 1 to 2 feet apart in orthogonal directions. The data was reviewed in the field to evaluate the possible presence of USTs and later transferred to a desktop computer for further review.

Based on the results of the geophysical survey, two anomalies of unknown cause, in addition to those apparently caused by reinforced concrete, buried utilities and known site features were encountered. The GPR data indicate the presence of one probable UST located approximately 35 to 45 feet northwest of the southernmost GPR grid corner (See Figures No. 3 and 4). The GPR data indicate that the probable UST is buried approximately 3 to 4 feet below ground surface, and is approximately 3.5 feet in diameter and approximately 7.5 feet long, resulting in a tank with a capacity of approximately 560 gallons. The complete geophysical report is attached as Appendix II.

3.0 Site Assessment Activities

Prior to performing the Preliminary Site Assessments, F&R attended a site meeting with NCDOT on November 29, 2010, to observe existing site conditions and determine the quantity of soil borings and their locations.

F&R returned to the site on January 18, 2011 to perform the Preliminary Site Assessment. The assessment consisted of advancing ten borings into the soils at the project site. Four of the borings (B-1 through B-4) were advanced at each side of the probable UST, three of the borings (B-5 through B-7) were advanced in the vicinity of the visible former concrete foundation and the remaining three borings (B-8 through B-10) were advanced in the right-of-way grassed area (Appendix I, Figure 3). The borings were advanced using direct-push technology (Geoprobe) to depths ranging from 10 to 12 feet below ground surface (bgs). As directed by the NCDOT, borings in the vicinity of the probable UST were terminated at a depth of 12 feet, while the remaining borings were terminated at a depth of 10 feet bgs. Boring locations were determined by F&R staff based on the location of the probable UST, site features and directives from the NCDOT during a previous site meeting.

Soil sample cores from the borings (B-1 through B-10) were collected in disposable, 4-foot long acetate sleeves. The soil samples were visually/manually classified and screened in the field using a photo-ionization detector (PID) for evidence of petroleum hydrocarbons. Evaluation of VOC concentrations were performed using a MiniRae 2000 PID which produces results in parts per million (ppm). A

representative soil sample was collected from one foot sections of each sleeve and placed in a re-sealable plastic bag and the vapors were then allowed to equilibrate in the headspace of the bag for approximately ten minutes prior to measurement with the PID. The measurements were collected by placing the probe tip into the headspace of the bag. PID measurements can be found in the Environmental Borings Logs in Appendix III.

The soil sample which exhibited the highest PID concentration or the sample at boring termination was submitted for laboratory analysis for diesel range organics (DRO) by EPA Method 3510 and gasoline range organics (GRO) by EPA Method 5030 with preparation by EPA Method 8015C.

The samples were collected in laboratory-supplied sample containers, placed in a cooler with ice, and delivered by courier to SGS North America, Inc. (SGS) in Wilmington, North Carolina following standard chain-of custody procedures.

4.0 Subsurface Conditions

As indicated in the attached Environmental Boring Logs (Appendix III), the ground surface at the boring locations consisted of concrete (Boring B-1), approximately 4 inches of ABC Stone (Borings B-2, B-3, B-4, B-5 and B-7) or minimal surficial soils (Borings B-6, B-8, B-9 and B-10). Underlying the concrete, ABC Stone or surficial soils, the subsurface conditions generally consisted of moist, brown, silty sands (USCS – SM); moist, red-brown, clayey sands (USCS – SC); moist, tan-orange, sandy clays (USCS – CL) and moist, brown-tan-orange, silty and clayey sands (USCS – SM & SC). The groundwater table was not encountered within the depth of the drilled borings, as a majority of the samples appeared to be moist. One exception to this was observed at Boring B-3, where the recovered soil samples were observed to be wet from approximately 1 to 9 feet below existing ground surface.

5.0 Analytical Results

As shown in the following table, petroleum hydrocarbons identified as DRO were encountered at two of the boring locations (B-3 and B-6) at depths of 5 to 6 feet and 9 to 10 feet below ground surface, respectively. The laboratory results indicate the soil sample collected from boring B-3 (in the vicinity of the probably UST) exceeds the NC DENR Action level of 10 mg/kg for DRO. In regards to the soil sample collected at Boring B-6, petroleum contamination (DRO) was observed at a concentration of 8.66 mg/kg, however, this concentration of DRO is below the NC DENR Action Level. The laboratory analytical results can be found in the attached Appendix V of this report.

Table 1
Soil Sampling Analytical Results
Bruce Luther Property (Parcel #36)
Richmond County, Rockingham, North Carolina

Sample ID	Sample Date	Sample Depth (ft bgs)	PID Reading (ppm)	EPA Method 8015B	
				DRO (mg/kg)	GRO (mg/kg)
66M-0178-0003-B1	1/18/2011	11-12	0.0	BQL	BQL
66M-0178-0003-B2	1/18/2011	8-9	1.5	BQL	BQL
66M-0178-0003-B3	1/18/2011	5-6	1.0	**1,210**	BQL
66M-0178-0003-B4	1/18/2011	8-9	0.6	BQL	BQL
66M-0178-0003-B5	1/18/2011	6-7	0.4	BQL	BQL
66M-0178-0003-B6	1/18/2011	9-10	0.0	8.66	BQL
66M-0178-0003-B7	1/18/2011	6-7	1.2	BQL	BQL
66M-0178-0003-B8	1/18/2011	6-7	0.1	BQL	BQL
66M-0178-0003-B9	1/18/2011	6-7	2.0	BQL	BQL
66M-0178-0003-B10	1/18/2011	6-7	0.4	BQL	BQL
NC DENR Action Level				**10**	**10**

Notes:
ft bgs = feet below ground surface
ppm = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
BQL = Below Quantitation Limit
Bold indicates soil analytical results above NCDENR Action Levels
NCDENR Action Level determined from the North Carolina UST Section Guidelines for Assessment and Corrective Ac

6.0 Conclusions and Recommendations

F&R conducted a PSA at the Bruce Luther Property located at 1178 US 220 Hwy, Rockingham, Richmond County, North Carolina. A geophysical investigation was performed by Schnabel Engineering to investigate the existence of unknown USTs at the site. Based on the results of the geophysical survey, it was determined that one probable UST, approximately 560 gallons in size was present at the site. Four geoprobe borings were advanced in the vicinity of the UST, and an additional six geoprobe borings were

advanced at the site in the vicinity of exposed former building foundation and grassed right-of-way utility easement. Based on the results of laboratory testing, it has been determined that petroleum impacted soils exist in the vicinity of the probable UST at concentrations above the NC DENR Action Level of 10 mg/kg. In addition, petroleum impacted soils were encountered in the vicinity of the former building foundation at concentrations below the NC DENR Action Level.

In regards to the probable UST, it is estimated that petroleum impacted soils may exists to depths of approximately 9 feet below existing ground surface based on laboratory analysis and PID readings. F&R estimates the extents of soil contamination to extend approximately 15 feet from the eastern side of the tank, with the extents of soil contamination on the northern and southern sides of the tank extending to approximately 10 feet from the edge of the tank. Using the above approximations, it can be approximated that the volume of petroleum impacted soil in the vicinity of the UST to be 270 tons. Petroleum impacted soil and USTs that are removed should be properly managed and disposed of in accordance with all NCDENR rules and regulations.

It should be noted that a delineation of the soil contamination was not performed, as this was not included in the proposed scope of work, and the above estimates are based on interpretations of soil analytical results, PID readings and our experience with similar petroleum UST releases. The amount of impacted soil can only be determined after excavation or by advancing additional borings at the site to possibly delineate the extents (horizontal and vertical) of contamination.

In addition, petroleum impacted soils were encountered at Boring B-6 at a depth of 9 to 10 feet below ground surface. However, the laboratory analytical results indicate that petroleum impacted soils in the vicinity of Boring B-6 exist at levels below the NC DENR Action Level of 10 mg/kg.

7.0 Limitations

These services have been performed, under authorization of the North Carolina Department of Transportation for specific application on this project. These services have been performed in accordance with generally accepted environmental and hydrogeological practices. No other warranty, expressed or implied is made. As with any subsurface investigation, actual conditions exist only at the precise locations from which samples were taken. Certain inferences are based on the results of sampling and related testing to form a professional opinion of conditions in areas beyond those from which samples were taken. Our conclusions and recommendations are based upon information provided to us by others, our sampling and testing results and our site observations. We have not verified the completeness or accuracy of the information provided by others, unless otherwise noted. Our observations are based upon conditions readily visible at the site at the time of our site visits.

Froehling & Robertson, Inc. by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state or federal public agencies any conditions at the site that may present a potential danger to public health, safety or the environment. In areas that require notification of local, state, or federal public agencies as required by law, it is the Client's responsibility to so notify.

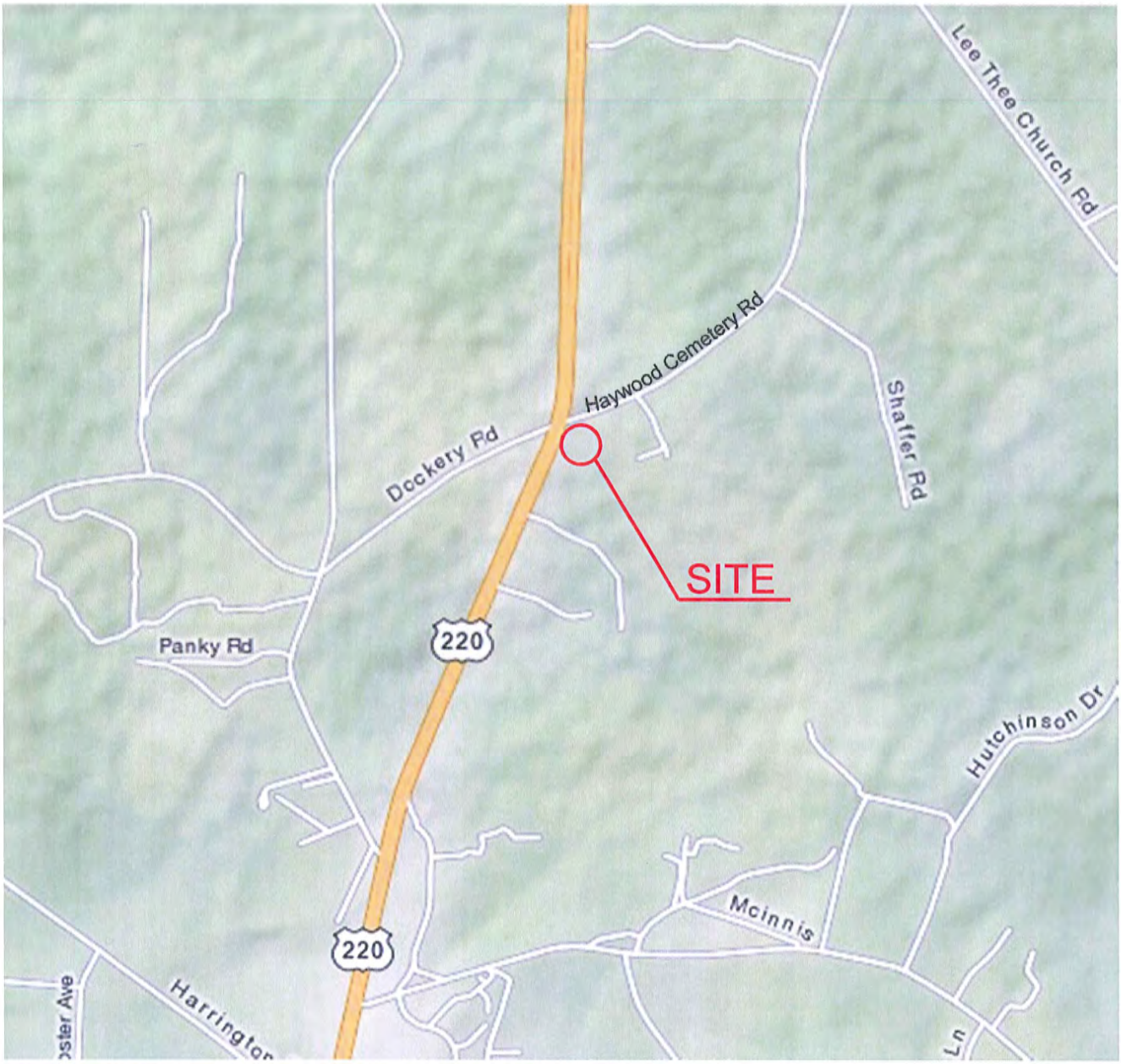
APPENDIX I

Figure No. 1 – SITE VICINITY MAP

Figure No. 2 – TOPOGRPAHIC MAP

Figure No. 3 – BORING LOCATION PLAN

Figure No. 4 – ESTIMATED EXTENT OF SOIL CONTAMINATION



SITE VICINITY MAP

North

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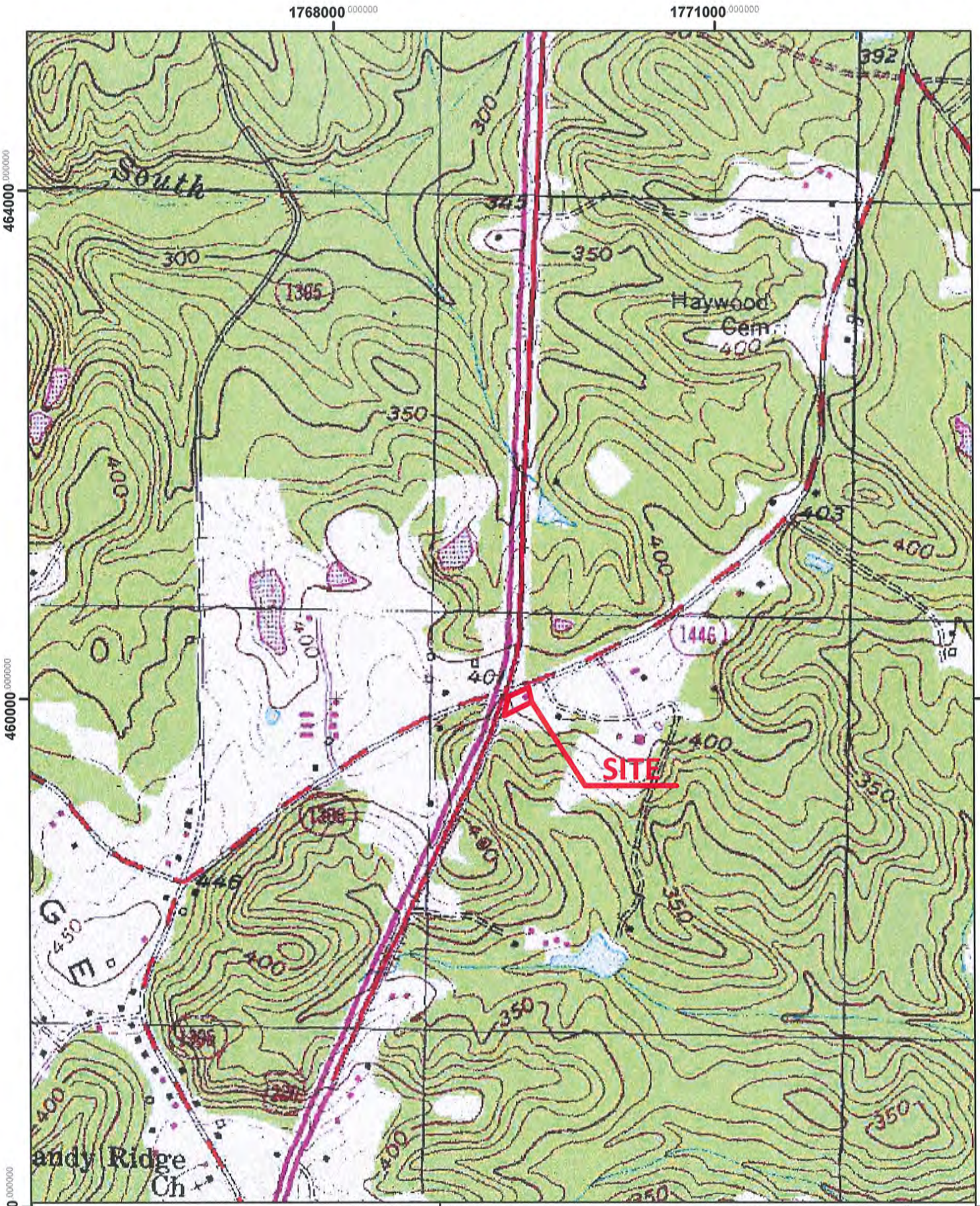
www.fandr.com

CLIENT: NCDOT	
PROJECT: Bruce Luther Property (Parcel #36)	
LOCATION: Rockingham, Richmond County, North Carolina	
F&R PROJECT No.: 66M-0178-0003	FIGURE No.: 1
DRAWN BY: D. Racey	
DATE: February 2011	SCALE: Not to scale



Topographic Plan

0 375 750 1,500 2,250 3,000 Feet

N

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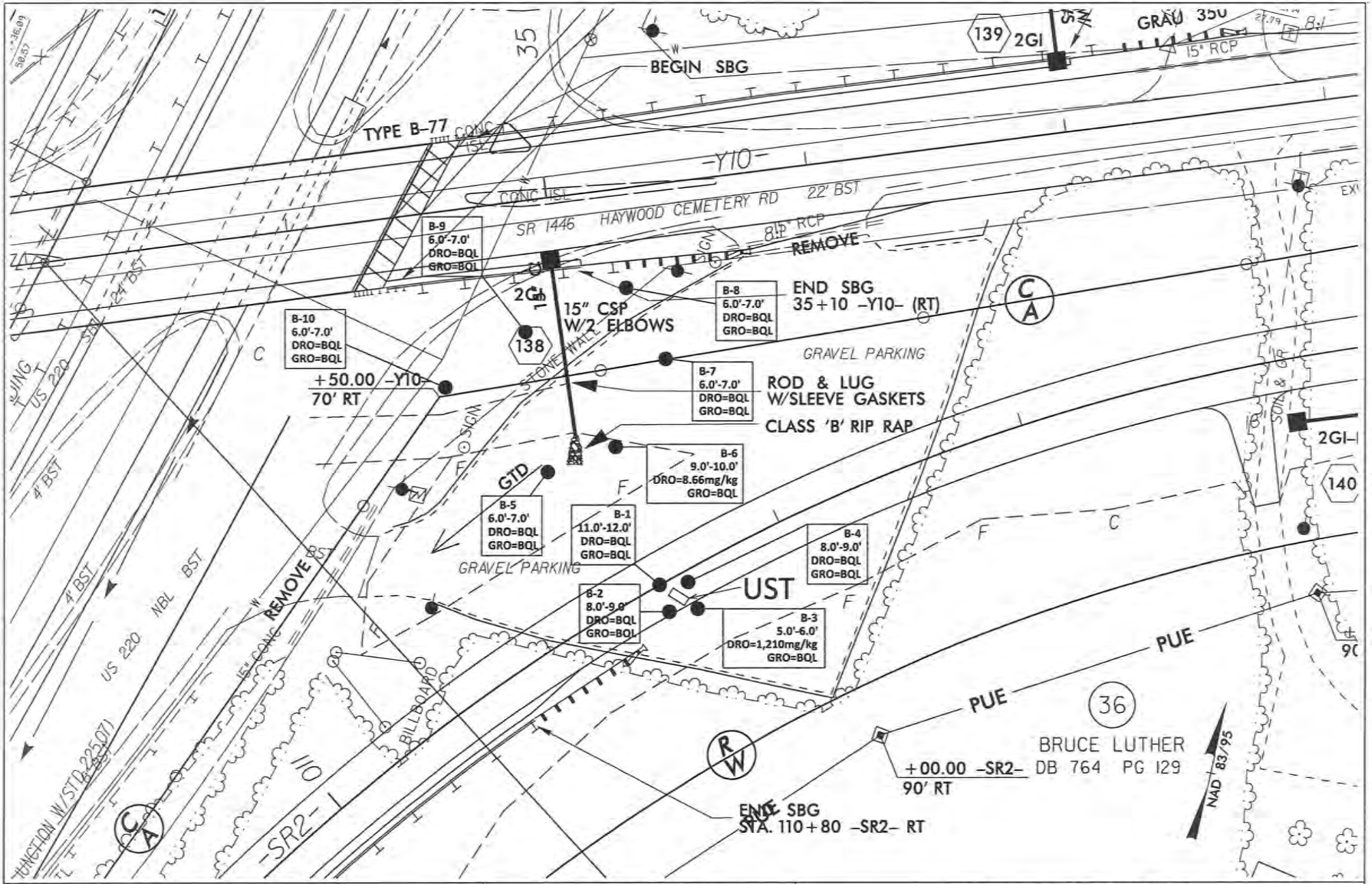
Client:	NCDOT
Project:	Bruce Luther Property
Location	Rockingham, Richmond County, NC
F&R Project No.:	66M-0178-0003
Data:	F&R(NAD 83 State Plane, FEET: CORS96)
Date:	February 2011

Scale: 1:12,000 1 inch = 1,000 feet

Figure 2



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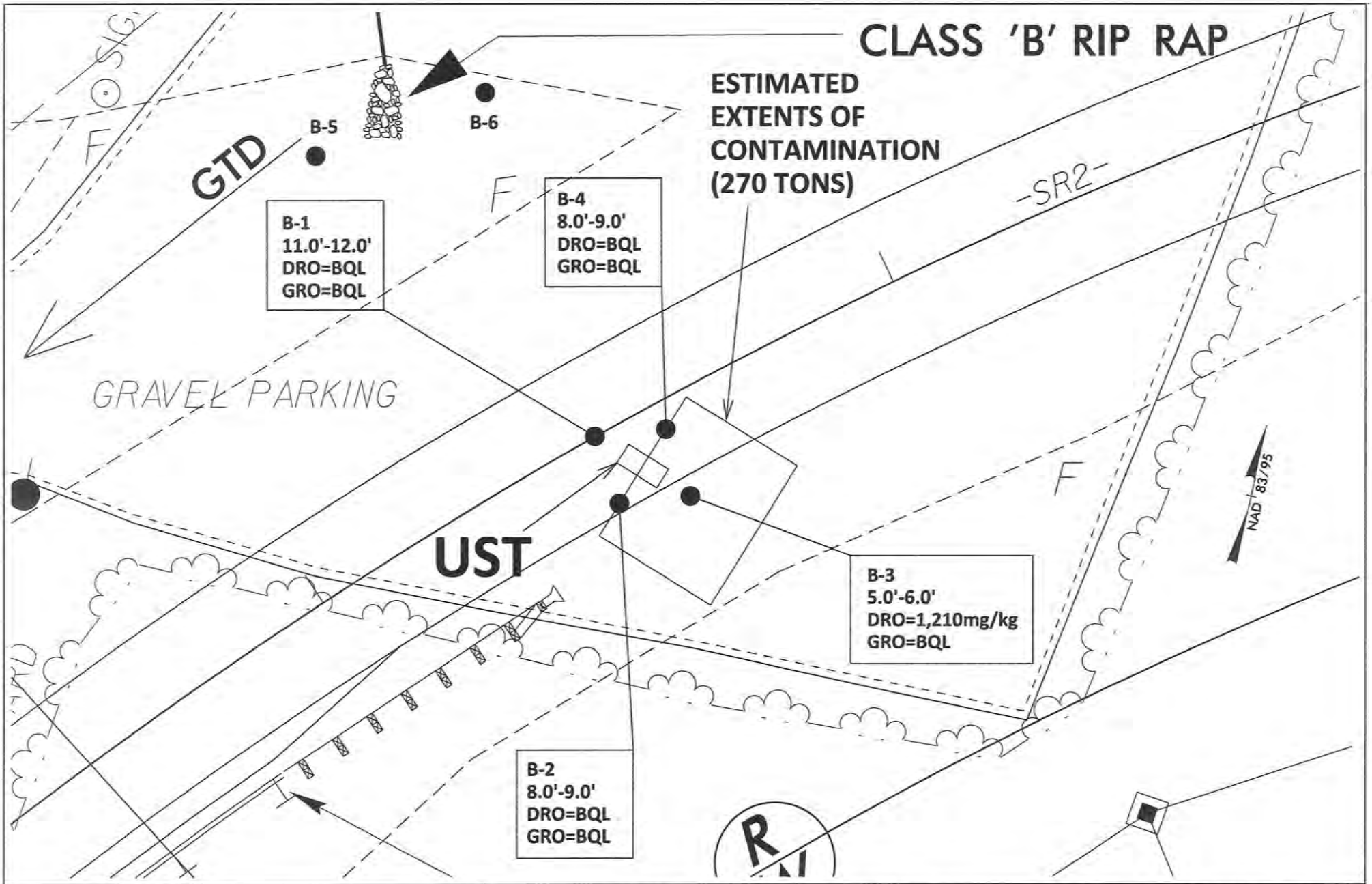
LEGEND

● Approximate Geoprobe Boring Location

SCALE (FEET)
0 25' 50'
1"=50'

BORING LOCATION PLAN

CLIENT: NCDOT	
PROJECT: Bruce Luther Property (Parcel #36)	
LOCATION: Rockingham, Richmond County, North Carolina	
F&R PROJECT No.: 66M-0178-0003	FIGURE No.: 3
DRAWN BY: D. Racey	CHECKED BY: M. Sabodish, P.E.
DATE: February 2011	SCALE: 1"=50'



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LEGEND

Approximate Geoprobe Boring Location

SCALE (FEET)
0 10' 20'
1"=20'

ESTIMATED EXTENT OF SOIL CONTAMINATION

CLIENT: NCDOT		
PROJECT: Bruce Luther Property (Parcel #36)		
LOCATION: Rockingham, Richmond County, North Carolina		
F&R PROJECT No.: 66M-0178-0003		FIGURE No.: 4
DRAWN BY: D. Racey	CHECKED BY: M. Sabodish, P.E.	
DATE: February 2011	SCALE: 1"=20'	

APPENDIX II

GEOPHYSICAL REPORT PREPARED BY SCHNABEL ENGINEERING

Schnabel ENGINEERING

January 31, 2011

Mr. Christopher Burkhardt
Froehling & Robertson, Inc.
310 Hubert Street
Raleigh, NC 27603

RE:
State Project: R-3421C
WBS Element: 34542.1.2
County: Richmond
Description: US 220 Bypass from Southwest of SR 1304 (Harrington Road) to Future US 220 Business/US 220 Bypass Interchange South of Ellerbe

Subject: **Project 09210013.35 Report on Geophysical Surveys**
Parcel 36, Richmond County, North Carolina

Dear Mr. Burkhardt:

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 three 8.5x11 color figures.

INTRODUCTION

The work described in this report was conducted on January 5 and 14, 2011, 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 southeast quadrant of the intersection of Haywood Cemetery Road and US 220 Hwy in Rockingham, 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.

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11A Oak Branch Drive / Greensboro, NC / 27407

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 36 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 two anomalies of unknown cause, in addition to those apparently caused by reinforced concrete, buried utilities, and known site features (Figures 3 and 4). The GPR data indicate the presence of one probable UST located approximately 35 to 45 feet northwest of the southernmost GPR grid corner. The UST is within the limits of the planned right-of way and/or easement. Example GPR images showing the reflections from the probable UST are shown on Figures 3 and 4. Figures 3 and 4 also include the location of the probable UST as marked in the field. The GPR data indicate that the probable UST is buried approximately 3.0 to 4.0 feet below ground surface, and is about 3.5 feet in diameter and about 7.5 feet long, equivalent to a capacity of about 560 gallons. Photographs of the probable UST location, as marked in the field, are included on Figure 5.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project R-3421C in Rockingham, NC indicates the following:

The geophysical data indicate the presence of one probable UST on Parcel 36. The probable UST is within the planned right-of-way and/or easement. The probable UST is about 560-gallon capacity and is buried about 2.0 to 3.0 feet below ground surface.

LIMITATIONS

These services have been performed and this report prepared for Froehling & Robertson, 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

PS:JW:JS:NB
Attachments: Figures (5)
FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.35 (R-3421C, RICHMOND COUNTY)\REPORT\PARCEL 36\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 36 (R-3421C).DOCX

Parcel 36 – Bruce Luther Property, looking east

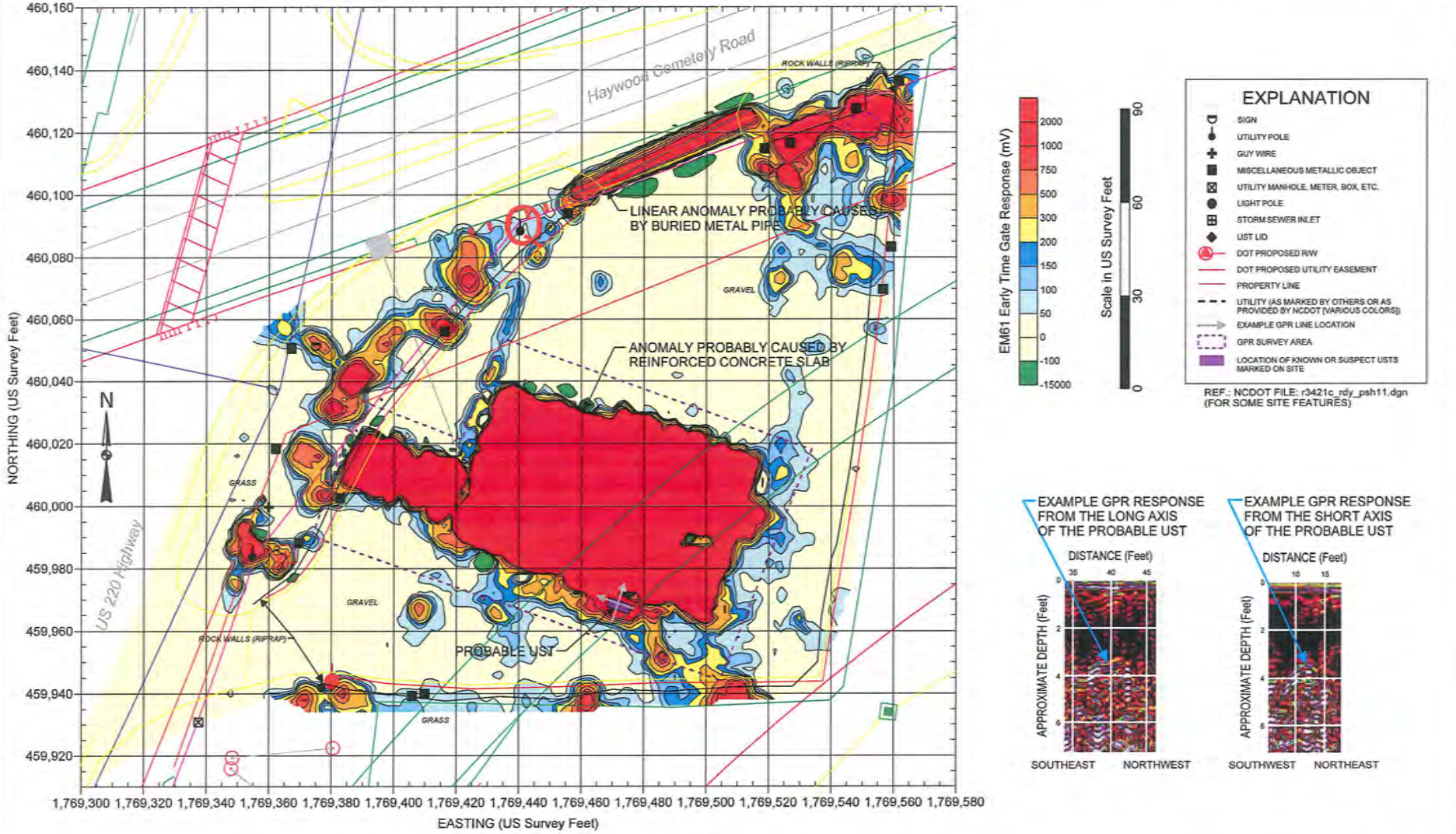
Parcel 36 – Bruce Luther Property, looking south

Schnabel ENGINEERING	STATE PROJECT R-3421C NC DEPT. OF TRANSPORTATION RICHMOND CO., NORTH CAROLINA PROJECT NO. 09210013.35	PARCEL 36 SITE PHOTOS FIGURE 1

Geonics EM61-MK2

GSSI SIR-3000

Schnabel ENGINEERING	STATE PROJECT R-3421C NC DEPT. OF TRANSPORTATION RICHMOND CO., NORTH CAROLINA PROJECT NO. 09210013.35	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2



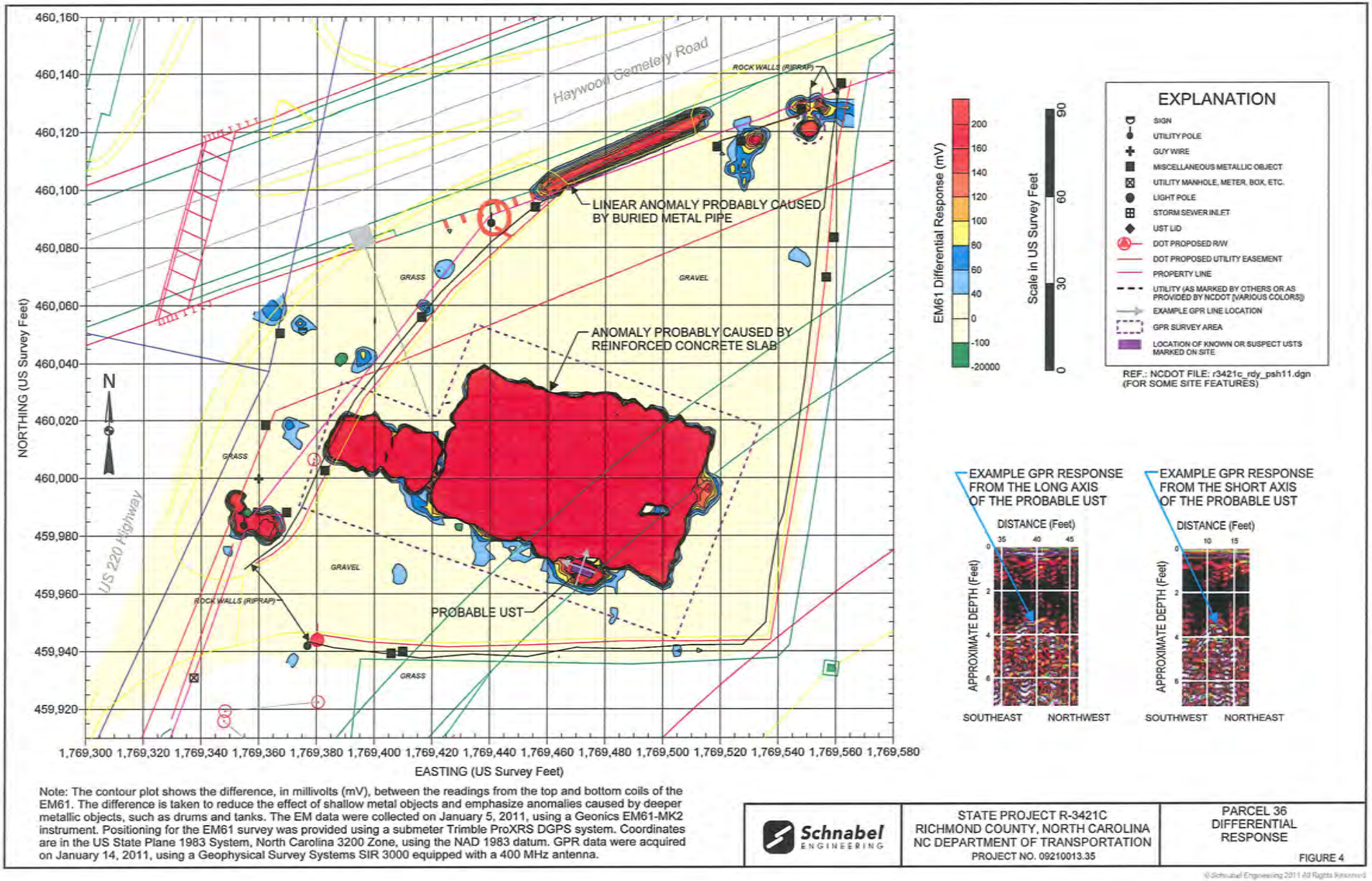
Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on January 5, 2011, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on January 14, 2011, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT R-3421C
RICHMOND COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.35

PARCEL 36
EARLY TIME GATE RESPONSE

FIGURE 3



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on January 5, 2011, 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 January 14, 2011, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT R-3421C
RICHMOND COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.35

PARCEL 36
DIFFERENTIAL RESPONSE

FIGURE 4

Parcel 36 – Bruce Luther Property, looking east. Photo shows approximate marked location of the probable UST on the southeastern side of the property.

Parcel 36 – Bruce Luther Property, looking south. Photo shows approximate marked location of the probable UST onthe southeastern side of the property.

Schnabel ENGINEERING	STATE PROJECT R-3421C RICHMOND CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.35	PHOTOS OF PROBABLE UST LOCATION FIGURE 5

APPENDIX III

ENVIRONMENTAL BORING LOGS

ENVIRONMENTAL BORING LOG

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ENGINEERS • LABORATORIES
"OVER 125 YEARS OF SERVICE"

Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-1** **(1 of 1)** Total Depth **12.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
		CONCRETE (6")		0.0	0	
	0.5	ABC STONE (6")				
	1.0	Moist, brown, silty SAND (SM).		1.0	0	
	2.0	Moist, red-brown, clayey SAND (SC).		2.0	0	
				3.0	0	
				4.0	0	
				5.0	0	
	6.0	Moist, tan-orange, sandy CLAY (CL).		6.0	0	
	7.0	Moist, tan-orange, silty SAND (SM).		7.0	0	
	8.0	Moist, brown, clayey SAND (SC).		8.0	0	
	9.0	Moist, orange, silty clayey SAND (SC).		9.0	0	
				10.0	0	
	11.0	Moist, gray, silty SAND (SM).		11.0	0	Sample submitted for laboratory analysis for TPH DRO/GRO
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

ENVIRONMENTAL BORING LOG

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GEOTECHNICAL • ENVIRONMENTAL • MATERIALS
ENGINEERS • LABORATORIES
"OVER 125 YEARS OF SERVICE"

Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-2** **(1 of 1)** Total Depth **12.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
	0.3	ABC STONE (4")		0.0	0	
		Moist, brown-orange, silty SAND (SM).		1.0	0	
	2.0	Moist, orange, clayey SAND (SC).		2.0	0	
				3.0	0	
				4.0	.5	
	5.0	Moist, orange, silty SAND (SM).		5.0	0	
				6.0	0	
	7.0	Moist, orange, fine to coarse SAND (SW).		7.0	0	
				8.0	1.5	Sample submitted for laboratory analysis for TPH DRO/GRO
				9.0	0	
	10.0	Moist, gray, silty fine SAND (SM).		10.0	0	
	11.0	Moist, orange-gray, silty SAND (SM).		11.0	0	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

ENVIRONMENTAL BORING LOG

SINCE 1881

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ENGINEERS • LABORATORIES
"OVER 125 YEARS OF SERVICE"

Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-3** **(1 of 1)** Total Depth **12.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
	0.3	ABC STONE (4")		0.0	0	
		Moist, brown, sandy CLAY (CL).				
	1.0	Wet, orange-brown, sandy CLAY (CL).		1.0	0	
	2.0	Wet, orange, sandy CLAY (CL).		2.0	0	
				3.0	0	
				4.0	0.4	
				5.0	1.0	Sample submitted for laboratory analysis for TPH DRO/GRO
	6.0	Wet, orange, clayey SAND (SC).		6.0	0.4	
				7.0	0	
				8.0	0.3	
	9.0	Moist, tan-orange, silty SAND (SM).		9.0	0	
				10.0	0	
				11.0	0	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-4** **(1 of 1)** Total Depth **12.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
	0.3	ABC STONE (4")		0.0	0	
		Moist, brown, sandy CLAY (CL).				
	1.0	Moist, orange-brown, sandy CLAY (CL).		1.0	0	
	2.0	Moist, orange, sandy CLAY (CL).		2.0	0.2	
				3.0	0	
				4.0	0.3	
	5.0	Moist, orange-gray, clayey SAND (SC).		5.0	0.3	
	6.0	Moist, orange-gray & orange, silty SAND (SM).		6.0	0	
				7.0	0	
	8.0	Moist, orange-brown, clayey SAND (SC).		8.0	0.3	Sample submitted for laboratory analysis for TPH DRO/GRO
	9.0	Moist, orange, sandy CLAY (CL).		9.0	0	
	10.0	Moist, tan-orange, silty SAND (SM).		10.0	0	
				11.0	0	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-5** **(1 of 1)** Total Depth **10.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
	0.3	ABC STONE (4")		0.0	0	
		Moist, brown, clayey SAND (SC).		1.0	0	
	2.0	Moist, orange-brown & orange, clayey SAND (SC).		2.0	0	
				3.0	0	
				4.0	0	
	5.0	Moist, orange-tan, clayey SAND (SC).		5.0	0	
	6.0	Moist, orange-tan, silty SAND (SM).		6.0	0.4	Sample submitted for laboratory analysis for TPH DRO/GRO
				7.0	0	
				8.0	0	
	9.0	Moist, tan-gray, silty SAND (SM).		9.0	0	
	10.0	Geoprobe Boring Terminated at 10.0 feet.		10.0		

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-6** **(1 of 1)** Total Depth **10.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
		Moist, brown, silty SAND (SM).		0.0	0	
	1.0	Moist, orange & orange-brown, clayey SAND (SC).		1.0	0	
				2.0	0	
				3.0	0	
	4.0	Moist, orange, silty SAND (SM).		4.0	0	
				5.0	0	
				6.0	0	
	7.0	Moist, orange, clayey SAND (SC).		7.0	0	
				8.0	0	
				9.0	0	Sample submitted for laboratory analysis for TPH DRO/GRO
	10.0	Geoprobe Boring Terminated at 10.0 feet.		10.0		

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-7** **(1 of 1)** Total Depth **10.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
	0.3	ABC STONE (4")		0.0	0	
		Moist, orange-brown, clayey SAND (SC).				
	1.0	Moist, orange, silty SAND (SM).		1.0	0	
				2.0	0	
				3.0	0	
				4.0	0	
	5.0	Moist, orange, clayey SAND (SC).		5.0	0	
				6.0	1.2	Sample submitted for laboratory analysis for TPH DRO/GRO
	7.0	Moist, tan-orange, silty SAND (SM).		7.0	0	
				8.0	0	
				9.0	0	
	10.0	Geoprobe Boring Terminated at 10.0 feet.		10.0		

ENV_BORING_LOG 66M0178-0003_BORELOGS.GPJ F&R.GDT 2/16/11

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-8** **(1 of 1)** Total Depth **10.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
		Moist, orange, clayey SAND (SC).		0.0	0	
				1.0	0	
				2.0	0	
	3.0	Moist, orange & tan, silty SAND (SM).		3.0	0	
				4.0	0	
				5.0	0	
	6.0	Moist, orange-tan, clayey silty SAND (SM).		6.0	0.1	Sample submitted for laboratory analysis for TPH DRO/GRO
	7.0	Moist, orange & orange-gray, silty SAND (SM).		7.0	0	
				8.0	0	
				9.0	0	
	10.0	Geoprobe Boring Terminated at 10.0 feet.		10.0		

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-9** **(1 of 1)** Total Depth **10.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
		Moist, orange-tan, silty SAND (SM).		0.0	0.2	
	1.0	Moist, orange, silty SAND (SM).		1.0	0.1	
				2.0	0.1	
				3.0	0.1	
	4.0	Moist, orange-gray, silty SAND (SM).		4.0	0.1	
				5.0	0.1	
	6.0	Moist, orange-brown, silty SAND (SM).		6.0	2.0	Sample submitted for laboratory analysis for TPH DRO/GRO
	7.0	Moist, orange-tan, silty SAND (SM).		7.0	0	
	8.0	Moist, orange-gray & gray, silty SAND (SM).		8.0	0	
				9.0	0	
	10.0	Geoprobe Boring Terminated at 10.0 feet.		10.0		

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Report No.: **66M-0178-0003** Date: **February 2011**

Client: **NCDOT**

Project: **US 220 PSAs (Bruce Luther Property), Rockingham, Richmond County, NC**

Boring No.: **B-10** **(1 of 1)** Total Depth **10.0'** Elev: Location: **See Boring Location Plan**

Type of Boring: **Geoprobe** Started: **1/18/11** Completed: **1/18/11** Driller: **Regional Probing**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Interval	Sample Depth (feet)	PID (ppm)	REMARKS
		Moist, brown, sandy CLAY (CL).		0.0	0	
	1.0	Moist, brown, silty SAND (SM).		1.0	0	
				2.0	0	
	3.0	Moist, orange-brown, clayey SAND (SC).		3.0	0	
	4.0	Moist, orange-gray, silty SAND (SM).		4.0	0	
	5.0	Moist, tan-purple, silty SAND (SM).		5.0	0	
	6.0	Moist, orange-tan-gray, silty SAND (SM).		6.0	0.4	Sample submitted for laboratory analysis for TPH DRO/GRO
	7.0	Moist, orange-tan & orange, silty SAND (SM).		7.0	0	
				8.0	0	
	9.0	Moist, orange-dark brown, silty SAND (SM).		9.0	0	
	10.0	Geoprobe Boring Terminated at 10.0 feet.		10.0		

APPENDIX IV

SITE PHOTOS

Photo #1: Location of probable UST and boring locations at northeast portion of site

Photo #2: Location of Boring B-5 looking southeast

Photo #3: Location of Boring B-6 looking southeast

Photo #4: Location of Boring B-7 looking northwest

Photo #5: Location of Boring B-8 looking east

Photo #6: Location of Borings B-9 and B-10 looking east

APPENDIX V

LABORATORY ANALYTICAL RESULTS

SGS

Michael Sabodish
NC Dept. of Transportation
310 Hubert Street
Raleigh, NC 27603

Report Number: G625-166

Client Project: NCDOT Richmond City

Dear Michael Sabodish,

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

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

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

Sincerely,
SGS North America, Inc.

Michael Page

Digitally signed by Michael Page
DN: CN = Michael Page, C = US, OU = SGS Environmental
Reason: I have reviewed this document for Lori Lockamy
Date: 2011.01.26 16:52:37 -05'00'

Project Manager
Lori Lockamy

Date

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

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

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

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

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

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

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

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-1 11'-12'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-1D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 9:12
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 89.1
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	6.94	MG/KG	1	24-Jan-11 20:34
Surrogates					
OTP	67	40-140	%	1	24-Jan-11 20:34

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.34
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-2 8'-9'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-2D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 9:31
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 90.9
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	6.81	MG/KG	1	24-Jan-11 21:02
Surrogates					
OTP	69	40-140	%	1	24-Jan-11 21:02

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.32
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-3 5'-6'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-3D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 9:51
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 88.8
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	**1210**	71.0	MG/KG	10	25-Jan-11 23:22

Surrogates

OTP	NA *	40-140	%	10	25-Jan-11 23:22

Batch Information

Analytical Batch: EP012511
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 31.74
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-4 8'-9'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-4D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 10:17
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 87.4
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	6.90	MG/KG	1	24-Jan-11 21:58
Surrogates					
OTP	63.1	40-140	%	1	24-Jan-11 21:58

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.2
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-5 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-5D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:00
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 90.2
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	7.00	MG/KG	1	24-Jan-11 22:27
Surrogates					
OTP	66.9	40-140	%	1	24-Jan-11 22:27

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 31.68
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-6 9'10'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-6D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:15
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 88.9
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	**8.66**	7.26	MG/KG	1	24-Jan-11 22:55

Surrogates

OTP	69	40-140	%	1	24-Jan-11 22:55

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 30.98
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-7 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-7D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:37
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 88.2
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	7.00	MG/KG	1	24-Jan-11 23:23

Surrogates

OTP	67.9	40-140	%	1	24-Jan-11 23:23

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.39
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-8 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-8D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:53
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 87.2
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	7.03	MG/KG	1	24-Jan-11 23:51

Surrogates

OTP	66.7	40-140	%	1	24-Jan-11 23:51

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.64
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-9 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-9D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 12:11
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 89.7
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	6.92	MG/KG	1	25-Jan-11 0:19

Surrogates

OTP	67.2	40-140	%	1	25-Jan-11 0:19

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.22
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-10 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-10D
Lab Project ID: G625-166

Collection Date: 18-Jan-11 12:30
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 90.7
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Oil Range Organics	BQL	7.02	MG/KG	1	25-Jan-11 0:47
Surrogates					
OTP	62.1	40-140	%	1	25-Jan-11 0:47

Batch Information

Analytical Batch: EP012411
Analytical Method: 8015DRO
Instrument: GC6
Analyst: DTF

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 31.43
Prep Extract Vol: 10

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-1 11'-12'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-1A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 9:12
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 89.1
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.57	MG/KG	1	25-Jan-11 14:09

Surrogates

BFB	99.7	-	%	1	25-Jan-11 14:09

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.05
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-2 8'-9'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-2A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 9:31
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 90.9
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	4.46	MG/KG	1	25-Jan-11 14:36

Surrogates

BFB	97.3	-	%	1	25-Jan-11 14:36

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 7.41
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-3 5'-6'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-3A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 9:51
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 88.8
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.06	MG/KG	1	25-Jan-11 15:03

Surrogates

BFB	101.0	-	%	1	25-Jan-11 15:03

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.68
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-4 8'-9'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-4A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 10:17
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 87.4
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	4.86	MG/KG	1	25-Jan-11 15:30

Surrogates

BFB	103.0	-	%	1	25-Jan-11 15:30

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 7.07
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-5 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-5A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:00
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 90.2
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.39	MG/KG	1	25-Jan-11 15:56

Surrogates

BFB	99.0	-	%	1	25-Jan-11 15:56

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.17
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-6 9'10'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-6A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:15
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 88.9
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.21	MG/KG	1	25-Jan-11 16:24

Surrogates

BFB	97.1	-	%	1	25-Jan-11 16:24

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.48
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-7 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-7A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:37
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 88.2
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.76	MG/KG	1	25-Jan-11 16:50

Surrogates

BFB	96.2	-	%	1	25-Jan-11 16:50

Batch Information

Analytical Batch: VP012511
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 5.9
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-8 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-8A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 11:53
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 87.2
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.19	MG/KG	1	23-Jan-11 16:55

Surrogates

BFB	100.0	-	%	1	23-Jan-11 16:55

Batch Information

Analytical Batch: VP012311
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.63
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-9 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-9A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 12:11
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 89.7
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.29	MG/KG	1	23-Jan-11 17:22

Surrogates

BFB	100.0	-	%	1	23-Jan-11 17:22

Batch Information

Analytical Batch: VP012311
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.32
Prep Extract Vol: 5

Print Date: 1/26/2011

Client Sample ID: **66M-0178-0003 B-10 6'-7'**
Client Project ID: NCDOT Richmond City
Lab Sample ID: G625-166-10A
Lab Project ID: G625-166

Collection Date: 18-Jan-11 12:30
Received Date: 21-Jan-11
Matrix: SOIL
Solids: 90.7
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	Units	DF	Date Analyzed
Gasoline Range Organics	BQL	5.18	MG/KG	1	23-Jan-11 17:49

Surrogates

BFB	101.0	-	%	1	23-Jan-11 17:49

Batch Information

Analytical Batch: VP012311
Analytical Method: 8015GRO
Instrument: GC4
Analyst: LMC

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.38
Prep Extract Vol: 5

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- Maryland
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- New York
- North Carolina
- Ohio

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100966

(1)
CLIENT: FHL (NCDOT)
CONTACT: M. SABODISH PHONE NO:(919) 828-3441
PROJECT: NCDOT Richmond Cty SITE/PWSID# :
REPORTS TO: M.SABODISH@FANOR.COM FAX NO.:( )
INVOICE TO: NCDOT QUOTE #: WBS ELEMENT #34542.1.2
P.O. NUMBER: 4300163800

SGS Reference: G625-166 PAGE 1 OF 4

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used: N/A, Meth-	(3) Analysis Required: D20	G20	REMARKS
	66M-0178-0003 B-1 11'-12'	1-18-11	912	Soil	3	G		X	X	
26	66M-0178-0003 B-2 8'-9'		931					X	X	
	66M-0178-0003 B-3 5'-6'		951					X	X	
27	66M-0178-0003 B-4 8'-9'		1017					X	X	
	66M-0178-0003 B-5 6'-7'		1100					X	X	
	66M-0178-0003 B-6 9'-10'		1115					X	X	
	66M-0178-0003 B-7 6'-7'		1137					X	X	
28	66M-0178-0003 B-8 6'-7'		1153					X	X	
	66M-0178-0003 B-9 6'-7'		1211					X	X	
	66M-0178-0003 B-10 6'-7'		1230					X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
M.SABODISH	1/20/11	1250	Matt Bay
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 1/21/11	Time 10:30	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 2.8, 2.0
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time: ☐ RUSH _____ Date Needed ☒ STD

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

White - Retained by Lab
Pink - Retained by Client

SINCE

1881

HQ: 3015 DUMBARTON ROAD RICHMOND, VIRGINIA 23228 T 804.264.2701 F 804.264.1202 www.fandr.com

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