

**REPORT OF PRELIMINARY
ENVIRONMENTAL SITE ASSESSMENT**

**FORTE PROPERTY, PARCEL # 4
STATE PROJECT U-2211B, WBS 34783.1.1
1423 NORWOOD STREET
LENOIR, NORTH CAROLINA**

Prepared for:

**North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699**

Prepared by:

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

MACTEC Project No. 6470-08-2286

January 30, 2009





MACTEC

engineering and constructing a better tomorrow

January 30, 2009

Mr. Ethan Caldwell, L.G.
Geoenvironmental Project Manager
NCDOT Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699

Subject: **Report of Preliminary Environmental Site Assessment
Forte Property, Parcel #4
State Project U-2211B, WBS 34783.1.1
1423 Norwood Street
Lenoir, North Carolina
MACTEC Project No. 6470-08-2286**

Dear Mr. Caldwell:

As authorized by your acceptance of MACTEC Proposal No. PROP 08-RAL-457 dated November 25, 2008, MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to submit the attached Report of Preliminary Environmental Site Assessment for the above-referenced site.

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

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

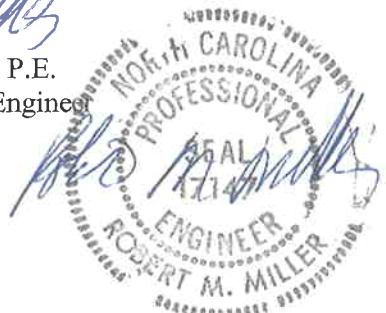
Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Matthew J. Gillis
Staff Scientist

Richard A. Kolb, L.G.
Principal Geologist

Robert M. Miller, P.E.
Senior Principal Engineer



2-2-09

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FIGURES

Figure 1 – Topographic Site Map

Figure 2 – Site Layout Showing Soil Boring Locations

TABLE

Table 1 – Summary of Laboratory Test Results

APPENDICES

Appendix A – Procedures for Collecting Soil Samples

Appendix B – Soil Boring Records

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

1.0 INTRODUCTION

MACTEC Engineering and Consulting, Inc. (MACTEC) was contracted by North Carolina Department of Transportation (NCDOT) to perform a Preliminary Environmental Site Assessment of the property owned by Mark and Lisa Forte located at 1423 Norwood Street in Lenoir, Caldwell County, North Carolina (Figure 1). This property was one in a series of 11 sites that were investigated by MACTEC in conjunction with State Project U-2211B. MACTEC understands that NCDOT is planning road improvements to the area. The entire parcel is being acquired by NCDOT for this project. NCDOT requested that MACTEC assess the subject site to evaluate the extent (if any) of soil and/or groundwater contamination related to activity (past or present) at this location and the impact (if any) on the proposed road improvements. This report presents MACTEC's assessment activities, findings, conclusions and recommendations.

1.1 Site Location

The Forte property is located at 1423 Norwood Street in Lenoir, Caldwell County, North Carolina. The site consists of approximately 0.3 acres of land and is developed with the Steelhorses Bar and Grill. The Caldwell County Geographic Information Services (GIS) identifies the site as parcel identification number (PIN) 2758286011. The site is bound to the north by a vacant store; to the east by two single-family residences; to the south by Auto Supply Co. Inc.; and to the west by Norwood Street, across which is the Central Baptist Church (Figure 2).

1.2 Background Information

The building on the subject site is 5,871 square feet in area and is constructed with a slab-on-grade concrete foundation, and a cinderblock exterior. The asphalt parking lot provides access to Norwood Street. MACTEC did not observe evidence of aboveground storage tanks (ASTs) or underground storage tanks (USTs) on the subject site.

2.0 ASSESSMENT ACTIVITIES

Prior to field activities, MACTEC prepared a site health and safety plan in accordance with OSHA 1910.120 requirements. NCDOT contracted with GEL Geophysics (GEL) to perform a geophysical investigation to identify suspected USTs on the property and to identify buried utilities at the site. GEL provided paint mark outs of buried utilities and suspected USTs locations to MACTEC prior to our assessment activities. They did not identify anomalies that may be USTs.

2.1 Soil Assessment

On December 8, 2008, Regional Probing Services Inc. (Regional Probing), under contract to MACTEC, advanced five soil borings (Nos. SB-7 through SB-11) at the subject site using Geoprobe™ direct-push technology. Soil boring locations were selected based on the proposed NCDOT right of way, results of the geophysical investigation and field observations. Figure 2 shows a site layout and the locations of the soil borings. Coordinates of the soil boring locations were recorded using a hand-held GPS.

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

MACTEC instructed Regional Probing to advance each soil boring to 12 feet below ground surface (bgs). Soil boring SB-11 was advanced to ten feet bgs due to Geoprobe refusal. MACTEC screened soil samples from each boring at one-foot intervals for volatile organic vapors using a photoionization detector (PID) and selected one soil sample from each boring for laboratory testing. MACTEC selected the soil sample that exhibited the highest PID measurement or the deepest, unsaturated soil sample if the PID did not detect organic vapors. Soil borings SB-7 through SB-11 were backfilled with the excess soil cuttings and bentonite chips.

2.2 Soil Analysis

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

3.0 LABORATORY RESULTS

The laboratory test results are summarized on Table 1. The laboratory test reports and chain-of-custody records are included in Appendix C. The laboratory detected TPH DRO in the soil sample from soil boring SB-11 at a concentration of 11 mg/Kg. The laboratory did not detect DRO or GRO in the remaining samples.

4.0 CONCLUSIONS AND RECOMMENDATIONS

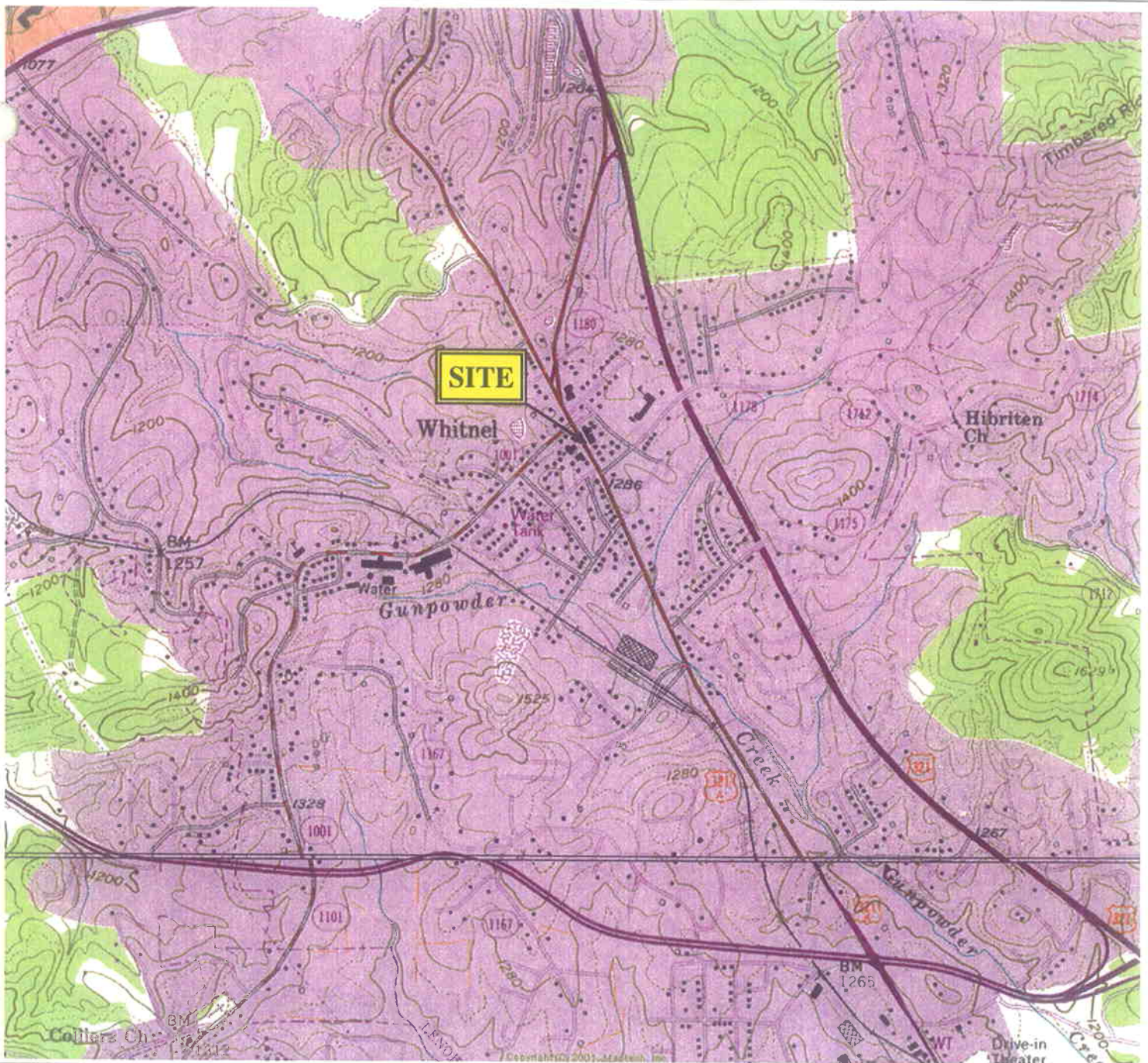
Based on the Preliminary Environmental Site Assessment, MACTEC offers the following conclusions and recommendations:

- The soil sample from soil boring SB-11 exhibited TPH DRO at a concentration of 11 mg/Kg, which exceeds NCDENR's Action Level of 10 mg/Kg.
- If the impacted soil at the location of SB-11 extends up to five feet horizontally in all directions and ten feet vertically from the boring location, an estimated total of 35 cubic yards of impacted soil is present at this soil boring location.
- The presence of TPH is evidence of a release of petroleum. MACTEC recommends notifying the property owner of this finding, who should then report this evidence to the Asheville Regional Office of NCDENR.

5.0 QUALIFICATIONS

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

FIGURES



NORTH

LENOIR, NC
35081-H5-TF-024

1993

DMA 4655 I NE-SERIES V842

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929



DREXEL, NC
35081-G5-TF-024

1993

DMA 4655 I SE-SERIES V842



QUADRANGLE LOCATION

NOTE: SITE LOCATION IS APPROXIMATE

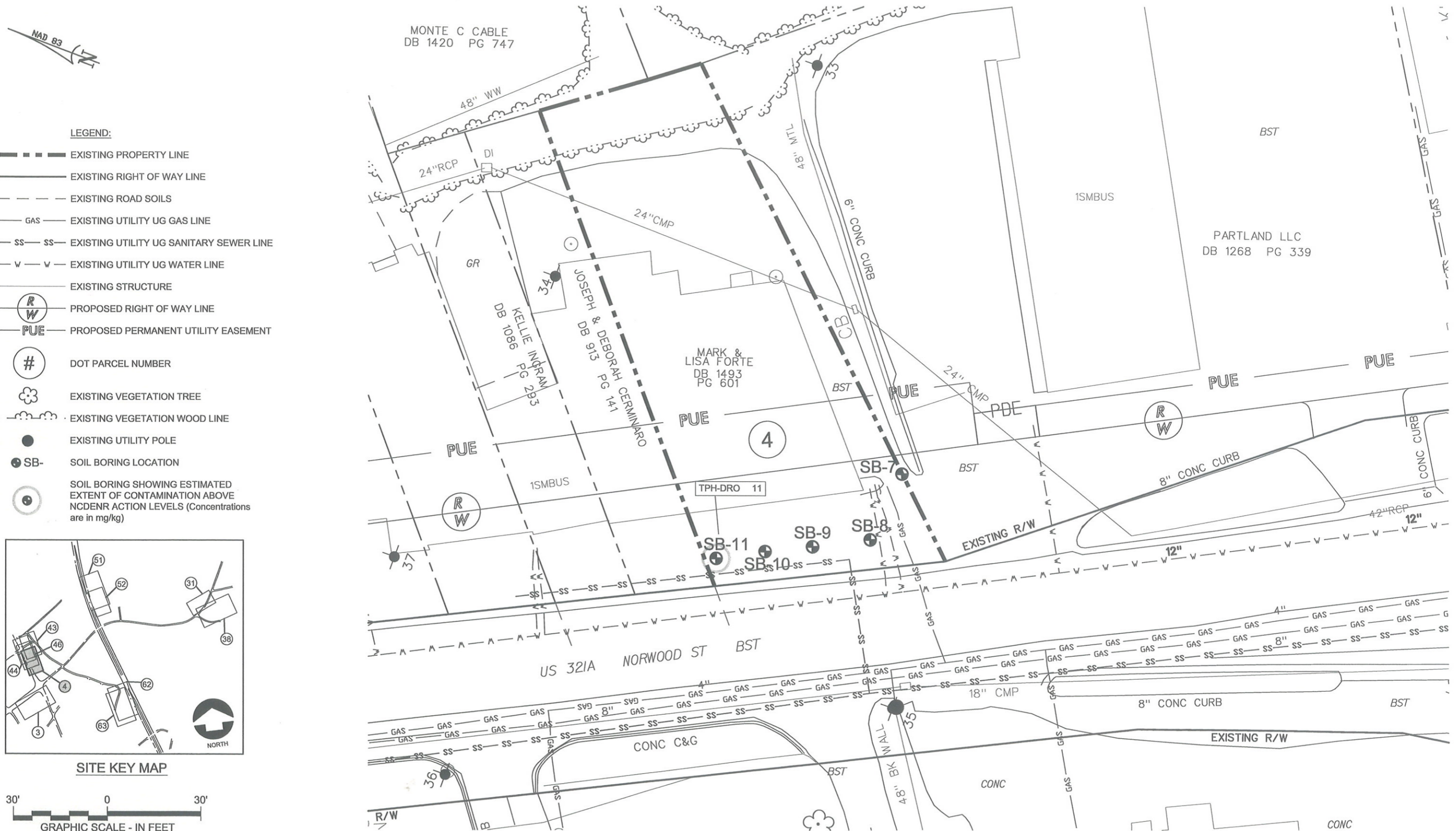
MACTEC

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

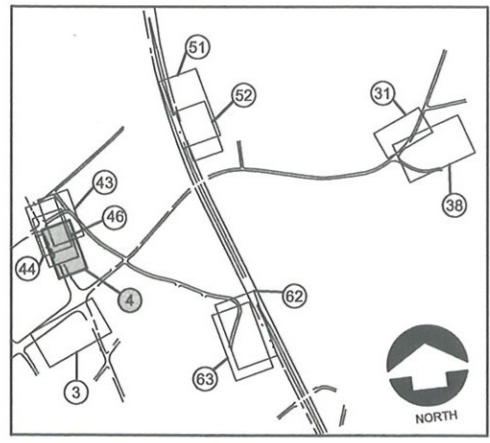
TOPOGRAPHIC SITE MAP
FORTE PROPERTY
PARCEL #4
LENOIR, NORTH CAROLINA

DRAWN: MJG	DATE: JANUARY 2009	FIGURE
ENG CHECK: <i>lwr</i>	SCALE: 1 : 24000	1
APPROVAL: <i>PAE</i>	JOB: 6470-08-2286	

P:\6470\08\NCDOT_2008-2009 Geotech Contract\6470-08-2286 U-2211B PSAs at 11 sites in Caldwell County\CAD Files\Drawings\Site Location Map Parcel 4.dwg Fri, 06 Mar 2009 8:24am rrrhie



- LEGEND:**
- EXISTING PROPERTY LINE
 - EXISTING RIGHT OF WAY LINE
 - - - EXISTING ROAD SOILS
 - GAS — EXISTING UTILITY UG GAS LINE
 - SS - SS - EXISTING UTILITY UG SANITARY SEWER LINE
 - W - W - EXISTING UTILITY UG WATER LINE
 - EXISTING STRUCTURE
 - (R/W) PROPOSED RIGHT OF WAY LINE
 - PUE PROPOSED PERMANENT UTILITY EASEMENT
 - # DOT PARCEL NUMBER
 - ☼ EXISTING VEGETATION TREE
 - ☁ EXISTING VEGETATION WOOD LINE
 - EXISTING UTILITY POLE
 - SB- SOIL BORING LOCATION
 - SOIL BORING SHOWING ESTIMATED EXTENT OF CONTAMINATION ABOVE NCDENR ACTION LEVELS (Concentrations are in mg/kg)



**SITE LAYOUT SHOWING SOIL BORING LOCATIONS
FORTE PROPERTY, PARCEL #4
NCDOT PROJECT NO. U-2211B
LENOIR, NORTH CAROLINA**

DRAWN: R.R.	DATE: JANUARY 2009
ENG CHECK: <i>MJB</i>	SCALE: 1" = 30'
APPROVAL: <i>[Signature]</i>	JOB No.: 6470-08-2286

FIGURE
2

REFERENCE: BASE DRAWING PROVIDED BY NCDOT; MACTEC FIELD NOTES.

TABLE

Table 1
Summary of Laboratory Test Results
State Project U-2211B, WBS 34783.1.1
Forte Property, Parcel #4
Lenoir, North Carolina
MACTEC Job No. 6470-08-2286

Sample ID	Analytical Method →		Sample Depth	mg/Kg
	Contaminant of Concern →			
SB-7	12/8/2008	11'-12'	<6.9	EPA 8015
SB-8	12/8/2008	11'-12'	<6.2	TPH-DRO
SB-9	12/8/2008	11'-12'	<7.1	TPH-GRO
SB-10	12/8/2008	11'-12'	<5.6	
SB-11	12/8/2008	9'-10'	<6.1	
<i>NCDENR Action Level</i>				10

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

Prepared By: MSB Date: 1-28-09
 Checked By: WSK Date: 1-28-09

APPENDIX A

PROCEDURES FOR COLLECTING SOIL SAMPLES

Procedures for Collecting Soil Samples for Laboratory Testing Using the Geoprobe

- MACTEC will collect the soil samples using the Geoprobe hammer impact system. Downforce or percussion will be utilized to advance the sampler to the desired depth to obtain the soil sample.
- Soil cores will be retrieved from the sampler and classified by an on-site geologist or engineer. The one-inch diameter cores are approximately four feet in length and are contained within a pre-cleaned, disposable plastic sleeve.
- Soil samples from the boring soil cores will be placed in pre-labeled, airtight, plastic "twin" bags.
- After several minutes, the gas contained in the "headspace" or void area within one of the twin bags will be tested with a photoionization detector (PID).
- The duplicate of the sample that exhibits the highest headspace reading will be submitted to the laboratory for testing. The remaining portion of the soil core will be utilized for classification purposes.
- The soils will be classified in accordance with the Unified Soils Classification System.
- The soil sample will be placed into laboratory-supplied bottles.
- Sample bottles will be labeled prior to sample collection.
- Caps will be secured on bottles.
- All sample containers will be placed in plastic bags and the bags sealed.
- Documentation, including chain-of-custody record and laboratory analytical request form, will be completed for all samples.
- Samples will be packed in coolers with "bubble wrap" and ice packs for shipment to the laboratory.
- The chain-of-custody record and analytical request form will be placed inside the cooler, which will be sealed with security tape.
- Samples will be shipped under Chain-of-Custody via overnight express to the analytical laboratory within 24 hours following collection.

APPENDIX B

SOIL BORING RECORDS



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

Soil Boring Sample Record

MACTEC Project ID: Forte Property, Parcel #4

MACTEC Field Representative

MACTEC Project #: 6470-08-2286

Gillis

Date: 12-8-08

Boring ID: SB-7

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)		Comments
			PID		
0-1	Top 6" Black fine to coarse sand with gravel		0.0		
1-2	Reddish brown silty clayey, micaceous, fine to medium sand		0.0		
2-3	Reddish brown silty clayey, micaceous, fine to medium sand		0.0		
3-4	Reddish brown silty clayey, micaceous, fine to medium sand		0.0		
4-5	Reddish brown silty clayey, micaceous, fine to medium sand		0.0		
5-6	Reddish brown clayey, micaceous, fine to medium sand		0.0		
6-7	Reddish brown clayey, micaceous, fine to medium sand		0.0		
7-8	Reddish brown clayey, micaceous, fine to medium sand		0.0		
8-9	Reddish brown clayey, micaceous, fine to medium sand		0.0		
9-10	Reddish brown clayey, micaceous, fine to medium sand		0.0		
10-11	Reddish brown clayey, micaceous, fine to medium sand		0.0		
11-12	Reddish brown micaceous, fine to medium sand	1415	0.0		Sample

Prepared By: MSB Date: 1-30-09

Checked By: [Signature] Date: 1/30/09



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

Soil Boring Sample Record

MACTEC Project ID: Forte Property, Parcel #4

MACTEC Field Representative

MACTEC Project #: 6470-08-2286

Gillis

Date: 12-8-08

Boring ID: SB-8

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)		Comments
			PID		
0-1	Top 3" asphalt and gravel; Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
1-2	Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
2-3	Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
3-4	Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
4-5	Reddish brown clayey, micaceous, fine to medium sand		0.0		
5-6	Reddish brown clayey, micaceous, fine to medium sand		0.0		
6-7	Reddish brown clayey, micaceous, fine to medium sand		0.0		
7-8	Reddish brown clayey, micaceous, fine to medium sand		0.0		
8-9	Reddish brown clayey, micaceous, fine to medium sand		0.0		
9-10	Reddish brown micaceous, fine to medium sand		0.0		
10-11	Reddish brown micaceous, fine to medium sand		0.0		
11-12	Reddish brown clayey, micaceous, fine to medium sand	1425	0.0		Sample

Prepared By: WJG Date: 1-30-09
Checked By: [Signature] Date: 1/30/09



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

Soil Boring Sample Record

MACTEC Project ID: Forte Property, Parcel #4

MACTEC Field Representative

MACTEC Project #: 6470-08-2286

Gillis

Date: 12-8-08

Boring ID: SB-9

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)		Comments
			PID		
0-1	Top 3" asphalt and gravel; Reddish brown silty, micaceous, fine to medium sand		0.0		
1-2	Reddish brown silty, micaceous, fine to medium sand		0.0		
2-3	Reddish brown silty, micaceous, fine to medium sand		0.0		
3-4	Reddish brown clayey, micaceous, fine to medium sand		0.0		
4-5	Reddish brown clayey, micaceous, fine to medium sand		0.0		
5-6	Reddish brown clayey, micaceous, fine to medium sand		0.0		
6-7	Reddish brown clayey, micaceous, fine to medium sand		0.0		
7-8	Reddish brown clayey, micaceous, fine to medium sand		0.0		
8-9	Reddish brown clayey, micaceous, fine to medium sand		0.0		
9-10	Reddish brown clayey, micaceous, fine to medium sand		0.0		
10-11	Reddish brown clayey, fine to medium sand		0.0		
11-12	Reddish brown clayey, fine to medium sand	1435	0.0		Sample

Prepared By: WJG Date: 1-30-09

Checked By: [Signature] Date: 1/30/09



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

Soil Boring Sample Record

MACTEC Project ID: Forte Property, Parcel #4

MACTEC Field Representative

MACTEC Project #: 6470-08-2286

Gillis

Date: 12-8-08

Boring ID: SB-10

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)		Comments
			PID		
0-1	Top 3" asphalt; Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
1-2	Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
2-3	Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
3-4	Reddish brown silty, clayey, micaceous, fine to medium sand		0.0		
4-5	Reddish brown clayey, micaceous, fine to medium sand		0.0		
5-6	Reddish brown clayey, micaceous, fine to medium sand		0.0		
6-7	Reddish brown clayey, micaceous, fine to medium sand		0.0		
7-8	Reddish brown clayey, micaceous, fine to medium sand		0.0		
8-9	Reddish brown clayey, micaceous, fine to medium sand		0.0		
9-10	Reddish brown clayey, micaceous, fine to medium sand		0.0		
10-11	Reddish brown clayey, micaceous, fine to medium sand		0.0		
11-12	Brown to reddish brown micaceous, fine to medium sand with quartz	1450	0.0		Sample

Prepared By: MTG Date: 1-30-09

Checked By: [Signature] Date: 1/30/09



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

Soil Boring Sample Record

MACTEC Project ID: Forte Property, Parcel #4

MACTEC Field Representative

MACTEC Project #: 6470-08-2286

Gillis

Date: 12-8-08

Boring ID: SB-11

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)		Comments
			PID		
0-1	Top 3" asphalt and gravel; Reddish brown clayey, silty, micaceous, fine to medium sand		0.0		
1-2	Reddish brown clayey, silty, micaceous, fine to medium sand		0.0		
2-3	Reddish brown clayey, silty, micaceous, fine to medium sand		0.0		
3-4	Reddish brown clayey, silty, micaceous, fine to medium sand		0.0		
4-5	Reddish brown clayey, micaceous, fine to medium sand		0.0		
5-6	Reddish brown clayey, micaceous, fine to medium sand		0.0		
6-7	Reddish brown clayey, micaceous, fine to medium sand		0.0		
7-8	Reddish brown clayey, micaceous, fine to medium sand		0.0		
8-9	Reddish brown clayey, micaceous, fine to medium sand		0.0		
9-10	Reddish brown to brown fine to medium sand with some clay, mica and quartz	1510	0.0		Sample
10-11					Geoprobe refusal at 10 feet bgs.
11-12					

Prepared By: MJB Date: 1-30-09

Checked By: [Signature] Date: 1/30/09

APPENDIX C

**LABORATORY ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY RECORDS**



Case Narrative (Revised)

Date: 01/23/09
Company: N.C. Department of Transportation
Contact: Matt Gillis
Address: c/o MACTEC Eng. & Consulting, Inc
3301 Atlantic Ave.
Raleigh, NC 27604

Client Project ID: NCDOT Lenoir
Prism COC Group No: G1208362
Collection Date(s): 12/08/08 thru 12/10/08
Lab Submittal Date(s): 12/10/08

Client Project Name Or No: WBS# 34783.1.1

This is a revised report and supersedes our original laboratory report dated 12/24/08. Report modified to include Forte Property data only.

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 8 pages. A chain-of-custody is also attached for the samples submitted to Prism for this project.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative. Quality control statements and/or sample specific remarks are included in the sample comments section of the laboratory report for each sample affected.

Semi Volatile Analysis

No Anomalies Reported

Volatile Analysis

No Anomalies Reported

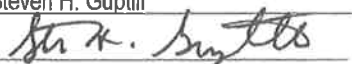
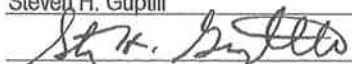
Metals Analysis

N/A

Wet Lab and Micro Analysis

N/A

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

Date Reviewed by: <u>Steven H. Guptill</u>	Project Manager: <u>Steven H. Guptill</u>
Signature: <u></u>	Signature: <u></u>
Review Date: <u>01/23/09</u>	Approval Date: <u>01/23/09</u>

Data Qualifiers Key Reference:

- B: Compound also detected in the method blank.
- #: Result outside of the QC limits.
- DO: Compound diluted out.
- E: Estimated concentration, calibration range exceeded.
- J: The analyte was positively identified but the value is estimated below the reporting limit.
- H: Estimated concentration with a high bias.
- L: Estimated concentration with a low bias.
- M: A matrix effect is present.

Notes: This report should not be reproduced, except in its entirety, without the written consent of Prism Laboratories, Inc. The results in this report relate only to the samples submitted for analysis.



NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1
 Sample Matrix: Soil

Client Sample ID: SB-7
 Prism Sample ID: 232980
 COC Group: G1208362
 Time Collected: 12/08/08 14:15
 Time Submitted: 12/10/08 16:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	72.8	%			1	SM2540 G	12/12/08 14:00	dsullivan	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	BRL	mg/kg	9.6	1.6	1	8015B	12/18/08 18:26	jvogel	Q37780
Sample Preparation:				25 g /	1 mL	3545	12/15/08 9:00	pbarr	P23313
						Surrogate	% Recovery	Control Limits	
						o-Terphenyl	71	49 - 124	
Sample Weight Determination									
Weight 1	5.03	g			1	GRO	12/12/08 0:00	lbrown	
Weight 2	5.65	g			1	GRO	12/12/08 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	BRL	mg/kg	6.9	0.84	50	8015B	12/15/08 16:19	dliamm	Q37664
						Surrogate	% Recovery	Control Limits	
						aaa-TFT	69	55 - 129	

Sample Comment(s):

BRL = Below Reporting Limit

J- Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543

Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409



NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1
 Sample Matrix: Soil

Client Sample ID: SB-8
 Prism Sample ID: 232981
 COC Group: G1208362
 Time Collected: 12/08/08 14:25
 Time Submitted: 12/10/08 16:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<u>Percent Solids Determination</u>									
Percent Solids	80.8	%			1	SM2540 G	12/12/08 14:00	dsullivan	
<u>Diesel Range Organics (DRO) by GC-FID</u>									
Diesel Range Organics (DRO)	BRL	mg/kg	8.6	1.4	1	8015B	12/18/08 5:35	jvogel	Q37808
Sample Preparation:			25.1 g	/	1 mL	3545	12/16/08 14:00	pbarr	P23328
					Surrogate		% Recovery	Control Limits	
					o-Terphenyl		74	49 - 124	
<u>Sample Weight Determination</u>									
Weight 1	6.90	g			1	GRO	12/12/08 0:00	lbrown	
Weight 2	6.18	g			1	GRO	12/12/08 0:00	lbrown	
<u>Gasoline Range Organics (GRO) by GC-FID</u>									
Gasoline Range Organics (GRO)	BRL	mg/kg	6.2	0.75	50	8015B	12/16/08 3:24	dliamm	Q37664
					Surrogate		% Recovery	Control Limits	
					aaa-TFT		57	55 - 129	

Sample Comment(s):

BRL = Below Reporting Limit

J- Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409



NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1
 Sample Matrix: Soil

Client Sample ID: SB-9
 Prism Sample ID: 232982
 COC Group: G1208362
 Time Collected: 12/08/08 14:35
 Time Submitted: 12/10/08 16:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
-----------	--------	-------	--------------	-----	-----------------	--------	--------------------	---------	----------

Percent Solids Determination

Percent Solids	70.9	%			1	SM2540 G	12/12/08 14:00	dsullivan	
----------------	------	---	--	--	---	----------	----------------	-----------	--

Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	9.8	1.6	1	8015B	12/18/08 6:10	jvogel	Q37808
-----------------------------	-----	-------	-----	-----	---	-------	---------------	--------	--------

Sample Preparation: 25.09 g / 1 mL 3545 12/16/08 14:00 pbarr P23328

Surrogate	% Recovery	Control Limits
o-Terphenyl	81	49 - 124

Sample Weight Determination

Weight 1	6.29	g			1	GRO	12/12/08 0:00	lbrown	
Weight 2	6.25	g			1	GRO	12/12/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	7.1	0.86	50	8015B	12/16/08 3:56	dliamm	Q37664
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Surrogate	% Recovery	Control Limits
aaa-TFT	55	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J- Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

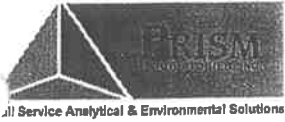
All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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Laboratory Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1
 Sample Matrix: Soil

Client Sample ID: SB-10
 Prism Sample ID: 232983
 COC Group: G1208362
 Time Collected: 12/08/08 14:50
 Time Submitted: 12/10/08 16:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<u>Percent Solids Determination</u>									
Percent Solids	89.5	%			1	SM2540 G	12/12/08 14:00	dsullivan	
<u>Diesel Range Organics (DRO) by GC-FID</u>									
Diesel Range Organics (DRO)	BRL	mg/kg	7.8	1.3	1	8015B	12/18/08 6:45	jvogel	Q37808
Sample Preparation:				25 g /	1 mL	3545	12/16/08 14:00	pbarr	P23328
						Surrogate	% Recovery	Control Limits	
						o-Terphenyl	97	49 - 124	
<u>Sample Weight Determination</u>									
Weight 1	5.64	g			1	GRO	12/12/08 0:00	lbrown	
Weight 2	5.61	g			1	GRO	12/12/08 0:00	lbrown	
<u>Gasoline Range Organics (GRO) by GC-FID</u>									
Gasoline Range Organics (GRO)	BRL	mg/kg	5.6	0.68	50	8015B	12/16/08 9:46	dliamm	Q37664
						Surrogate	% Recovery	Control Limits	
						aaa-TFT	76	55 - 129	

Sample Comment(s):

BRL = Below Reporting Limit

J- Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1
 Sample Matrix: Soil

Client Sample ID: SB-11
 Prism Sample ID: 232984
 COC Group: G1208362
 Time Collected: 12/08/08 15:10
 Time Submitted: 12/10/08 16:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	82.6	%			1	SM2540 G	12/12/08 14:00	dsullivan	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	11	mg/kg	8.5	1.4	1	8015B	12/18/08 9:42	jvogel	Q37808
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Sample Preparation: 25 g / 1 mL 3545 12/16/08 14:00 pbarr P23328

Surrogate	% Recovery	Control Limits
o-Terphenyl	106	49 - 124

Sample Weight Determination

Weight 1	6.24	g			1	GRO	12/12/08 0:00	lbrown	
Weight 2	5.66	g			1	GRO	12/12/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.1	0.74	50	8015B	12/16/08 10:18	dliamm	Q37664
-------------------------------	-----	-------	-----	------	----	-------	----------------	--------	--------

Surrogate	% Recovery	Control Limits
aaa-TFT	122	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J- Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Level II QC Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1

COC Group Number: G1208362
 Date/Time Submitted: 12/10/08 16:45

Gasoline Range Organics (GRO) by GC-FID, method 8015B

Method Blank							QC Batch ID	
	Result	RL	Control Limit	Units				
Gasoline Range Organics (GRO)	ND	5	<2.5	mg/kg			Q37664	
Laboratory Control Sample							QC Batch ID	
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %			
Gasoline Range Organics (GRO)	38.1	50	mg/kg	76	67-116		Q37664	
Matrix Spike							QC Batch ID	
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %			
232978 Gasoline Range Organics (GRO)	29.3	50	mg/kg	59	57-113		Q37664	
Matrix Spike Duplicate							QC Batch ID	
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
232978 Gasoline Range Organics (GRO)	32.9	50	mg/kg	66	57-113	12	0 - 23	Q37664

Diesel Range Organics (DRO) by GC-FID, method 8015B

Method Blank							QC Batch ID	
	Result	RL	Control Limit	Units				
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg			Q37780	
Laboratory Control Sample							QC Batch ID	
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %			
Diesel Range Organics (DRO)	80.1	80	mg/kg	100	55-109		Q37780	
Matrix Spike							QC Batch ID	
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %			
233042 Diesel Range Organics (DRO)	84.3	80	mg/kg	105	50-117		Q37780	
Matrix Spike Duplicate							QC Batch ID	
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
233042 Diesel Range Organics (DRO)	66.5	80	mg/kg	83	50-117	24	0 - 24	Q37780

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NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Level II QC Report

01/23/09

N.C. Department of Transportation
 Attn: Matt Gillis
 c/o MACTEC Eng. & Consulting, Inc
 3301 Atlantic Ave.
 Raleigh, NC 27604

Project ID: NCDOT Lenoir
 Project No.: WBS# 34783.1.1

COC Group Number: G1208362
 Date/Time Submitted: 12/10/08 16:45

Diesel Range Organics (DRO) by GC-FID, method 8015B

Method Blank							QC Batch ID
	Result	RL	Control Limit	Units			
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg			Q37808

Laboratory Control Sample							QC Batch ID
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
Diesel Range Organics (DRO)	76.5	80	mg/kg	96	55-109		Q37808

Matrix Spike							QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
233368 Diesel Range Organics (DRO)	68.2	80	mg/kg	85	50-117		Q37808

Matrix Spike Duplicate								
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
233368 Diesel Range Organics (DRO)	63.9	80	mg/kg	80	50-117	7	0 - 24	Q37808

#-See Case Narrative



Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/528-6364 • Fax: 704/525-0409

Client Company Name: MACTEC
Report To/Contact Name: Matt Gillis
Reporting Address: 3301 Atlantic Ave
Raleigh, NC 27604

Phone: 919 831 8056 Fax (No):
Email (Yes) (No) Email Address: M.Gillis@maectec.com
EDD Type: PDF Excel Other
Site Location Name: NC DOT Lenoir
Site Location Physical Address: 6470-08-2286

CHAIN OF CUSTODY RECORD

PAGE 1 OF 6 QUOTE # TO ENSURE PROPER BILLING:

Project Name: _____
Short Hold Analysis: (Yes) (No) Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements
Invoice To: MACTEC
Address: NC DOT

Purchase Order No./Billing Reference _____

Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
"Working Days" 6-9 Days Standard 10 days Rush Work Must Be Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES
RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER		PRESERVATIVES	ANALYSES REQUESTED		REMARKS	PRISM LAB ID NO.
				TYPE SEE BELOW	NO. SIZE					
SB-1	12-8-08	1130	soil	C	5	methanol	X	X	8081A = chlorinated	232974
SB-2		1140			5		X	X	pesticides	232975
SB-3		1155			5		X	X	350.3 = total	232976
SB-4		1205			5		X	X	ammonia as	232977
SB-5		1215			5		X	X	n.trogen	232978
SB-6		1225			5		X	X		232979
SB-7		1415			4		X	X		232980
SB-8		1425			4		X	X		232981
SB-9		1435			4		X	X		232982
SB-10		1450			4		X	X		232983

Sampler's Signature: Matthew Miller Sampled By (Print Name): Matthew Gillis Affiliation: MACTEC

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

Relinquished By: (Signature) Matthew Miller
Relinquished By: (Signature) _____
Relinquished By: (Signature) _____

Received For Prism Laboratories By: _____
Date: 12/14/08 1545
BCC Group No. _____

NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AGAINST RECEIVED AT THE LABORATORY.

NPDES: NC SC UT Other
RCRA: NC SC CERCLA NC SC LANDFILL NC SC OTHER: NC SC
*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

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

SC	OTHER	N/A	FL	NC

Additional Comments:
Site Arrival Time: _____
Site Departure Time: _____
Field Tech Fee: _____
Mileage: _____

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PRESS DOWN FIRMLY - 3 COPIES
SEE REVERSE FOR TERMS & CONDITIONS
ORIGINAL



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 Phone: 704/528-6364 • Fax: 704/525-0409

Client Company Name: MACTEC
 Report To/Contact Name: Matt Gillis
 Reporting Address: 3301 Atlantic Ave
Raleigh NC 27604

Phone: 919 831 8056 Fax (Yes) (No):
 Email (Yes) (No) Email Address: m.gillis@mactec
 EDD Type: PDF Excel Other
 Site Location Name: NCDOT Lewis
 Site Location Physical Address: 6470-08-2286

CHAIN OF CUSTODY RECORD

PAGE 2 OF 6 QUOTE # TO ENSURE PROPER BILLING:

Project Name: _____
 Short Hold Analysis: (Yes) (No) (Yes) (No) **UST Project: (Yes) (No) (No)**
 *Please ATTACH any project specific reporting (QC LEVEL I III IIII IV) provisions and/or QC Requirements
 Invoice To: MACTEC
 Address: _____

Purchase Order No./Billing Reference _____

Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
 "Working Days" 6-9 Days Standard 10 days Rush Work Must Be Pre-Approved
 Samples received after 15:00 will be processed next business day.
 Turnaround time is based on business days, excluding weekends and holidays.
 (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY

Samples in TAG upon arrival? YES NO N/A
 Received on correct date? YES NO N/A
 PROPER PRESERVATIVES indicated? YES NO N/A
 Received WITHIN HOLDING TIMES? YES NO N/A
 CUSTODY SEALS INTACT? YES NO N/A
 VOLETTILES Sealed/W/OUT HEADSPACE? YES NO N/A
 PROPER CONTAINERS used? YES NO N/A

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

CLIENT DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
SB-11	12-8-08	1510	Soil	C	4		W/Preserv	X		232984
SB-12	12-8-08	1530			4			X		232985
SB-13	12-9-08	0905			4			X		232986
SB-14	12-9-08	0920			4			X		232987
SB-15	12-9-08	0935			4			X		232988
SB-16	12-9-08	0950			4			X	232989	232989
SB-17	12-9-08	1015			4			X		232990
SB-18	12-9-08	1030			4			X		232991
SB-19	12-9-08	1055			4			X		232992
SB-20	12-9-08	1105			4			X		232993

Sampler's Signature: Matthew G. 7/3 Sampled By (Print Name): Matthew G. 7/3 Affiliation: MACTEC
 Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Received By (Signature): Matthew G. 7/3 Date: 12/8/08 Military/Hours: 1510
 Relinquished By (Signature): Matthew G. 7/3 Date: 12/8/08
 Relinquished By (Signature): _____ Date: _____ Military/Hours: _____

Received For Prism Laboratories By: Matthew G. 7/3 Date: 12/8/08
 Method of Shipment: _____ Note: ALL SAMPLE CONTAINERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
 COC Group No. G 1208362

Additional Comments: _____
 NPDs: NC SC NC SC NC SC NC SC NC SC NC SC NC SC
 Other: Fed Ex UPS Hand-delivered Prism Field Service Other

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)
 LANDFILL OTHER: NC SC NC SC NC SC NC SC
 SEE REVERSE FOR TERMS & CONDITIONS
 ORIGINAL

ATTACHMENT B

RESULTS OF GEOPHYSICAL INVESTIGATION

Mark and Lisa Forte Property, Parcel No. 4

U-2211B, WBS No. 34783.1.1

Caldwell County, North Carolina

A geophysical investigation was conducted on the Mark and Lisa Forte Property (Parcel No. 4) to identify the presence or absence of underground storage tanks (USTs) and associated appurtenances at the subject site. The geophysical investigation utilized ground penetrating radar and time domain electromagnetics. These instruments were used in concert with one another in order to identify subsurface metallic anomalies and, in particular, to identify the presence of USTs on site. A brief description of each instrument is presented in the following paragraphs followed by a discussion of the results of the geophysical evaluation.

1.0 Ground Penetrating Radar Methodology

A RAMAC digital radar control system configured with a 250 Megahertz (MHz) antenna array was used in this investigation. Ground Penetrating Radar (GPR) is an electromagnetic geophysical method that detects interfaces between subsurface materials with differing dielectric constants. The GPR system consists of an antenna that houses the transmitter and receiver, a digital control unit that both generates and digitally records the GPR data, and a color video monitor to view data as they are collected in the field.

The transmitter radiates repetitive short-duration electromagnetic waves (at radar frequencies) into the earth from an antenna moving across the ground surface. These radar waves are reflected back to the receiver from the interface of materials with different dielectric constants. The intensity of the reflected signal is a function of the contrast in the dielectric constant between the materials, the conductivity of the material through which the wave is traveling, and the frequency of the signal. Subsurface features that commonly cause such reflections are: 1) natural geologic conditions, such as changes in sediment composition, bedding, and cementation horizons and voids; or 2) unnatural changes to the subsurface, such as disturbed soils, soil backfill, buried debris, tanks, pipelines, and utilities. The digital control unit processes the signal from the receiver and produces a continuous cross-section of the subsurface interface reflection events.

GEL Engineering of NC, Inc.
an Affiliate of The GEL Group, Inc.

fc: ncdt01008

GPR data profiles are collected along transects, which are measured paths along which the GPR antenna is moved. During a survey, marks are placed in the data by the operator at designated points along the GPR transects or with a survey wheel odometer. These marks allow for a correlation between the GPR data and the position of the GPR antenna on the ground.

Depth of investigation of the GPR signal is highly site-specific and is limited by signal attenuation (absorption) in the subsurface materials. Signal attenuation is dependent on the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities, such as clays, brackish groundwater, or groundwater with a high dissolved solid content from natural or man-made sources. Signal attenuation is lowest in relatively low-conductivity materials, such as dry sand or rock. Depth of investigation is also dependent on the antenna's transmitting frequency. Depth of investigation generally increases as transmitting frequency decreases; however, the ability to resolve smaller subsurface features is diminished as frequency is decreased.

The GPR antenna used at this site is internally shielded from aboveground interference sources. Accordingly, the GPR response is not affected by overhead power lines, metallic buildings, or nearby objects.

2.0 Time Domain Electromagnetic Methodology

The Time Domain Electromagnetic (TDEM) methods measure the electrical conductivity of subsurface materials. The conductivity is determined by inducing (from a transmitter) a time or frequency-varying magnetic field and measuring (with a receiver) the amplitude and phase shift of an induced secondary magnetic field. The secondary magnetic field is created by subsurface conductive materials behaving as an inductor as the primary magnetic field is passed through them.

The Geonics EM-61 system used in this investigation operates within these principles. However, the EM-61 TDEM system can discriminate between moderately conductive earth materials and very conductive metallic targets. The EM-61 consists of a portable coincident loop time domain transmitter and receiver with a 0.5-meter by 1.0-meter coil system. The EM-61 generates 150 pulses per second and measures the response from the ground after transmission or between pulses. The secondary EM responses from metallic targets are of longer duration than those created by conductive

earth materials. By recording the later time EM arrivals, only the response from metallic targets is measured, rather than the field generated by the earth material.

3.0 Field Procedures

The geophysical field investigation was performed on December 1-2 & 8, 2008. Interpretation of the GPR data was conducted in the field and any potential anomalies were marked in the field. GPR data processing typically included band pass filtering, background removal, horizontal smoothing, and gain adjustments. TDEM was also used to scan the project site. Any electromagnetic anomalies indicative of buried metallic objects were marked in the field. No subsurface anomalies were identified on the subject site during the survey.