REPORT OF PRELIMINARY SITE ASSESSMENT

CLAUDE E. WHITT PROPERTY, PARCEL #18 STATE PROJECT U-2550B, TIP NO. 34831.1.1 2507 SOUTH STERLING STREET MORGANTON, 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

May 3, 2010

MACTEC Project No. 6470-10-0057



engineering and constructing a better tomorrow

May 3, 2010

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

Subject:

Report of Preliminary Site Assessment Claude E. Whitt Property, Parcel #18 State Project U-2550B, TIP No. 34831.1.1

2507 South Sterling Street Morganton, North Carolina

MACTEC Project No. 6470-10-0057

Dear Mr. Fox:

As authorized by Cathy Houser's acceptance of MACTEC Proposal No. PROP 10-RAL-126 dated March 10, 2010, MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to submit the attached Report of Preliminary Site Assessment for the above-referenced site.

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

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

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Matthew J. Gillis Staff Scientist

Robert M. Miller, P.E.

Senior Project Manager/Principal Engineer

License Number: NC Engineering F-0653 NC Geology C-247

Matthe & sele

TABLE OF CONTENTS

	age
INTRODUCTION	1
Site Location	1
Background Information	1
ASSESSMENT ACTIVITIES	1
Soil Assessment	1
Soil Analysis	2
LABORATORY RESULTS	2
CONCLUSIONS AND RECOMMENDATIONS	2
QUALIFICATIONS	2
	INTRODUCTION Site Location Background Information ASSESSMENT ACTIVITIES Soil Assessment Soil Analysis LABORATORY RESULTS CONCLUSIONS AND RECOMMENDATIONS

FIGURES

Figure 1 – Topographic Site Map

Figure 2 – Site Layout Showing Soil Boring Locations

TABLE

Table 1 – Summary of Laboratory Test Results

APPENDICES

Appendix A – Schnabel Engineering Geophysical Survey Report

Appendix B – Procedures for Collecting Soil Samples

Appendix C – Soil Boring Records

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

1.0 INTRODUCTION

MACTEC Engineering and Consulting, Inc. (MACTEC) was contracted by North Carolina Department of Transportation (NCDOT) to perform a Preliminary Site Assessment of the Claude E. Whitt property (Whitt property) located at 2507 South Sterling Street in Morganton, Burke County, North Carolina (Figure 1). This property was one in a series of four sites that were investigated by MACTEC in conjunction with State Project U-2550B. MACTEC understands that NCDOT is planning road improvements to the area. Expanded right-of-way is being acquired by the NCDOT for this project. NCDOT requested that MACTEC assess the subject site to evaluate the extent (if any) of soil contamination related to the operation of the current building located on site and the impact (if any) of this operation on the proposed road improvements. This report presents a description of MACTEC's assessment activities, findings, conclusions and recommendations.

1.1 Site Location

The Whitt property is located at 2507 South Sterling Street in Morganton, Burke County, North Carolina. The site is developed with a Discount Beverage convenience store and a mobile home supply store. The Burke County Geographic Information Services (GIS) identifies the site as parcel identification number (PIN) 2712373256. The site is bound to the northeast by an automobile junkyard; to the southeast by wooded undeveloped land; to the southwest by South Sterling Street, across which is a single-family residence; and to the northwest by wooded undeveloped land and an automobile junkyard (Figure 2).

1.2 Background Information

The gas station building is 1,908 square feet and is constructed with a slab-on-grade concrete foundation and a cinderblock and wood paneling exterior. The asphalt parking lot provides access to South Sterling Street. According to NCDOT the current owners have no records of a gas station being present on this property. The building design is similar to gas stations operating in the 1960's through the 1980's. There is not a record of USTs having been on this property and contamination has not been identified at this property.

2.0 ASSESSMENT ACTIVITIES

Prior to field activities, MACTEC prepared a site health and safety plan in accordance with OSHA 1910.120 requirements. MACTEC contacted ULOCO and contracted Priority Underground Locating to mark the locations of underground utilities at the site. NCDOT contracted with Schnabel Engineering (Schnabel) to perform a geophysical survey to identify suspected USTs on the property and to identify buried utilities at the site. Schnabel provided paint mark outs of buried utilities and suspected UST locations to MACTEC prior to our assessment activities. Schnabel did not identify anomalies that may be USTs in the right-of-way. Schnabel's Geophysical Survey Report is included in Appendix A.

2.1 Soil Assessment

On April 1, 2010, Troxler Geologic Services, Inc. (Troxler), under contract to MACTEC, advanced six soil borings (Nos. SB-7 through SB-12) at the subject site using a GeoprobeTM direct-push technology. Soil boring locations were selected based on the proposed NCDOT right-of-way, results

of the geophysical investigation and field observations. Soil boring SB-12 was placed across the Whitt property boundary onto the Edwin Arrowood property at the request of Mr. Terry Fox, Geoenvironmental Manager for NCDOT. Figure 2 shows a site layout and the locations of the soil borings.

MACTEC collected a soil sample from each boring location using the procedures outlined in Appendix B. Copies of soil boring records are included in Appendix C.

MACTEC instructed Troxler to advance each soil boring to 12 feet below ground surface (bgs). 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-12 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 hydrocarbon (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 D. TPH was not detected in soil borings SB-7 through SB-12 at concentrations that exceed the laboratory reporting limits.

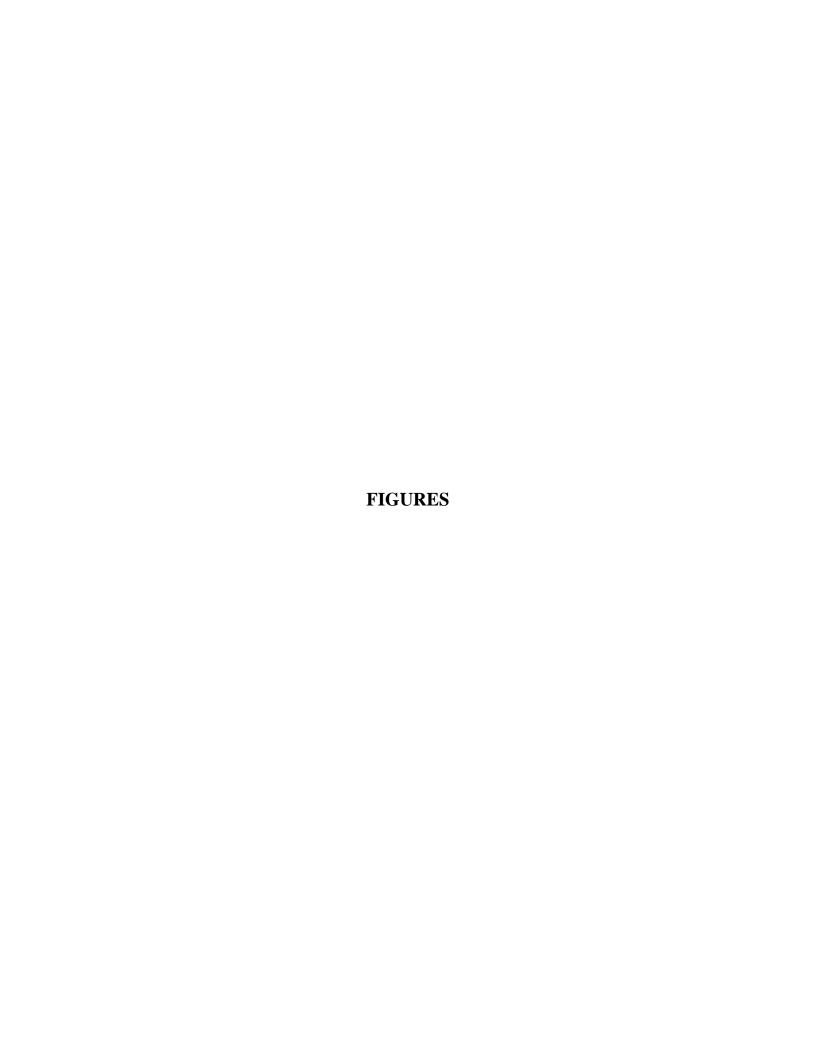
4.0 CONCLUSIONS AND RECOMMENDATIONS

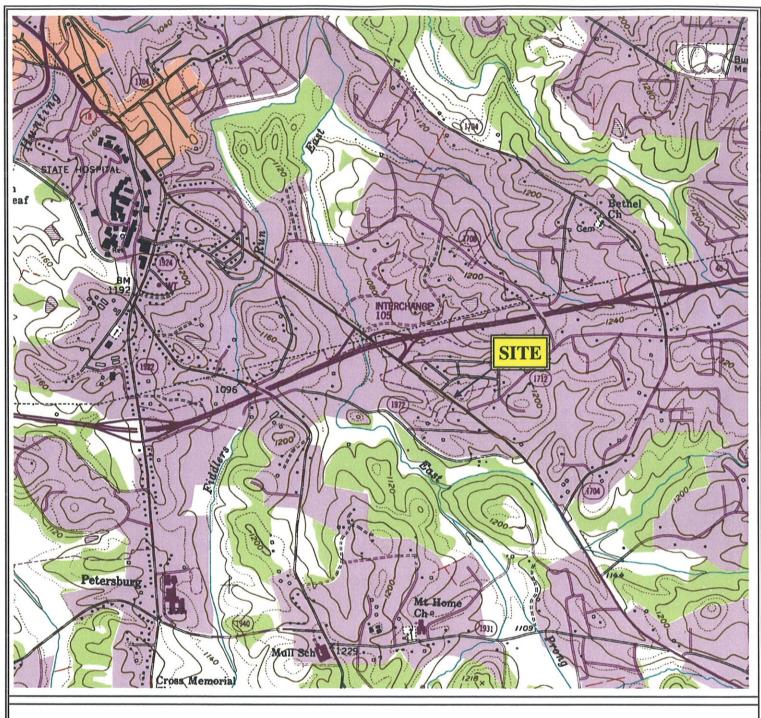
Based on the Preliminary Site Assessment, MACTEC offers the following conclusions and recommendations:

- MACTEC did not find evidence of a petroleum release in the vicinity of soil borings SB-7 through SB-12.
- MACTEC does not have evidence to support the need for further environmental assessment by NCDOT at this time.

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.







MORGANTON SOUTH, NC 35081-F6-TF-024

1993

DMA 4655 II NW-SERIES V842

CONTOUR INTERVAL 10 FEET NATIONAL GEODETIC VERTICAL DATUM OF 1929

1000 0 1000 2000



QUADRANGLE LOCATION

NOTE: SITE LOCATION IS APPROXIMATE



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

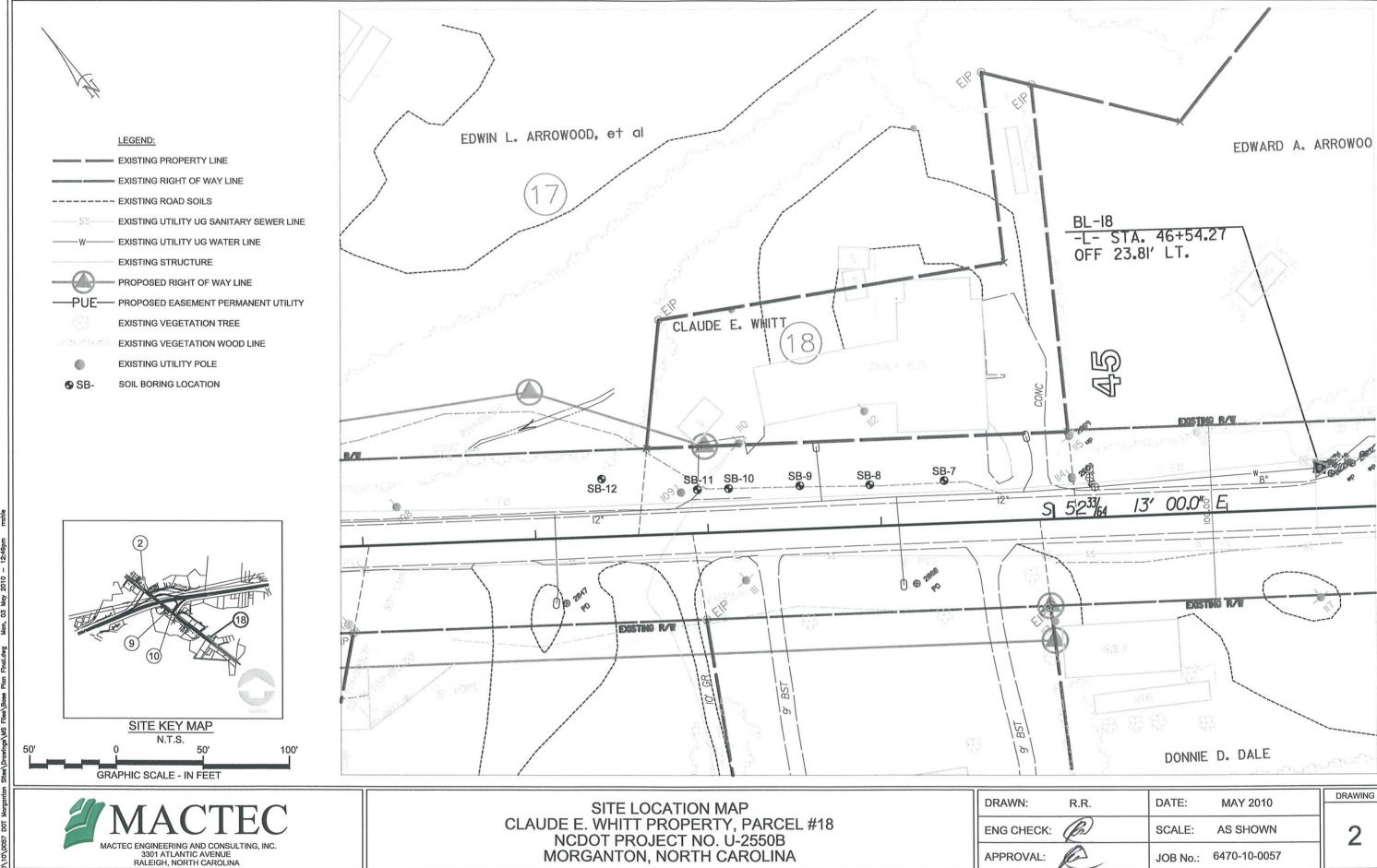
TOPOGRAPHIC SITE MAP CLAUDE E. WHITT PROPERTY PARCEL #18 MORGANTON, NORTH CAROLINA DRAWN: MJG DATE: APRIL 2010 DRAWING

ENG CHECK: CFS SCALE: 1:24000

6470-10-0057

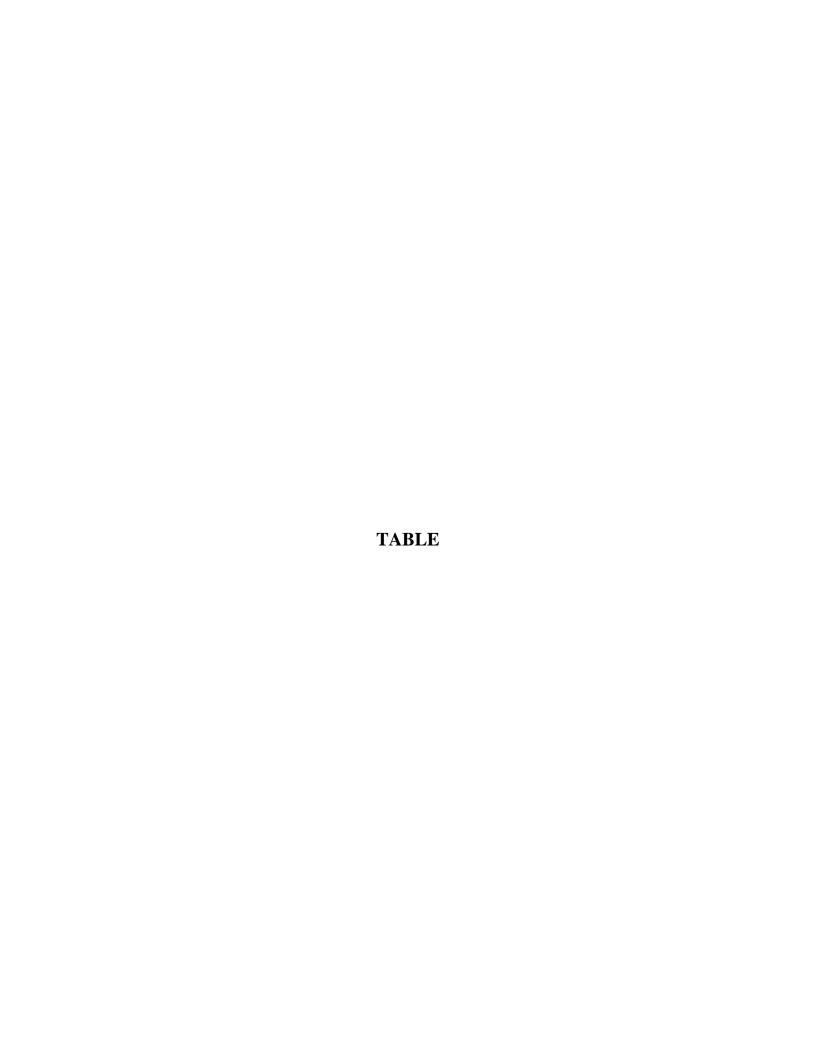
JOB:

APPROVAL: (P)



P:\6470\10\0057 DOT Morganton Sites

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



Analytic Contaminar Sample ID Da	State Project U-2550B, TIP No. 34831.1.1 Claude E. Whitt Property, Parcel #18	7	
Analytical Contaminant Sample ID Date 4/4	de E. Whitt Property, Pa	34831.1.1	
Analytical M Contaminant of		ırcel #18	
Analytical M Contaminant of Contaminant of Sample ID Date C 4/1/	Morganton, North Carolina	lina	
Analy	MACTEC Job No. 6470-10-0057	-0057	
Sample ID	lod →	EPA 8015	EPA 8015
Sample ID	oncern →	Can Har	Can Har
4/1/2010 4/1/2010 6 4/1/2010 1 4/1/2010	ected Sample Depth	Ira-Dao	ILII-GYO
4/1/2010 4/1/2010 0 4/1/2010 1 4/1/2010		gm	mg/Kg
4/1/2010 4/1/2010 4/1/2010 4/1/2010	10 1112.	<8.9	<6.4
4/1/2010 4/1/2010 4/1/2010	10 11'-12'	<9.0	<6.4
4/1/2010	10 11'-12'	<8.5	<6.1
4/1/2010	10 11'-12'	<8.2	<5.9
	10 11'-12'	<10	<i><</i> 7.4
SB-12 4/1/2010 1	10 11'-12'	<9.1	<6.5
NCDENR Action Level	ı Level	01	01

North Carolina Department of Environment and Natural Resources Analyte not detected above the Reporting Limit shown Notes: NCDENR

Prepared by: MTO Date: 4.27-10

Checked by: $\frac{CBS}{DS}$ Date: $\frac{1}{2}$

APPENDIX A

SCHNABEL ENGINEERING GEOPHYSICAL SURVEY REPORT



April 26, 2010

Mr. Robert Miller, PE, Senior Principal Engineer Mactec Engineering and Consulting, Inc 3301 Atlantic Avenue Raleigh, NC 27604

RE: State Project: U-2550B

WBS Element: 34831.1.1 County: Burke

Description: Morganton – NC 18 (Sterling Street) and I-40 Interchange

Subject: Report on Geophysical Surveys for Parcel 18, Morganton, NC

Schnabel Engineering Project 09210013.19

Dear Mr. Miller:

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

1.0 INTRODUCTION

The work described in this report was conducted on March 24 and 31, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted within the accessible areas of the proposed right-of-way and/or easement as indicated by the NCDOT to support their environmental assessment of Parcel 18 (Claude and Shirley Whitt Property, Discount Beverage, Inc.). Photographs of the parcel are included on Figure 1. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) and associated metal product lines in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies

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.

2.0 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 (building, curbs, 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 two orthogonal directions over anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of UST's. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

Preliminary results for Parcel 18 were sent to Robert Miller and Matt Gillis of Mactec and Terry Fox of the NCDOT on April 2, 2010.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data for Parcel 18 are shown on Figures 3 and 4. The EM61 early time gate results are plotted on Figure 3. The early time gate data provide the more sensitive detection of metal objects. Figure 4 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show anomalies apparently caused by buried utilities, buried metal, or known site features (Figures 3 and 4). GPR data collected coincident to the differential EM61 anomaly located immediately south and west of the metal sign, next to the cinder block wall, does not indicate the presence of a metallic UST (Figures 3 and 4). However, that anomaly was partially blocked by a mobile home during GPR data collection. Therefore, our level of confidence is lower than usual, but we believe we have enough GPR data to suggest that it is unlikely that there is a UST in that area. The geophysical data collected on Parcel 18 did not indicate the presence of metallic UST's within the right-of-way and/or easement.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 18 on Project U-2550B in Morganton, NC indicates the following:

The geophysical data do not indicate the presence of metallic UST's in the areas surveyed on Parcel 18.

5.0 LIMITATIONS

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

Thank you for the opportunity to serve you on this project. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

James W. Whitt Staff Geophysicist

Edward D. Billington, LG Senior Vice President

JW:NB

Attachment: Figures (4)

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.19 (U-2550B, BURKE CO.)\REPORT\PARCEL 18\PARCEL 18 (U-3812).DOC



Parcel 18 - Claude and Shirley Whitt Property, looking east



Parcel 18 - Claude and Shirley Whitt Property, looking north



STATE PROJECT U-2550B BURKE CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.19

PARCEL 18 SITE PHOTOS



Geonics EM61-MK2

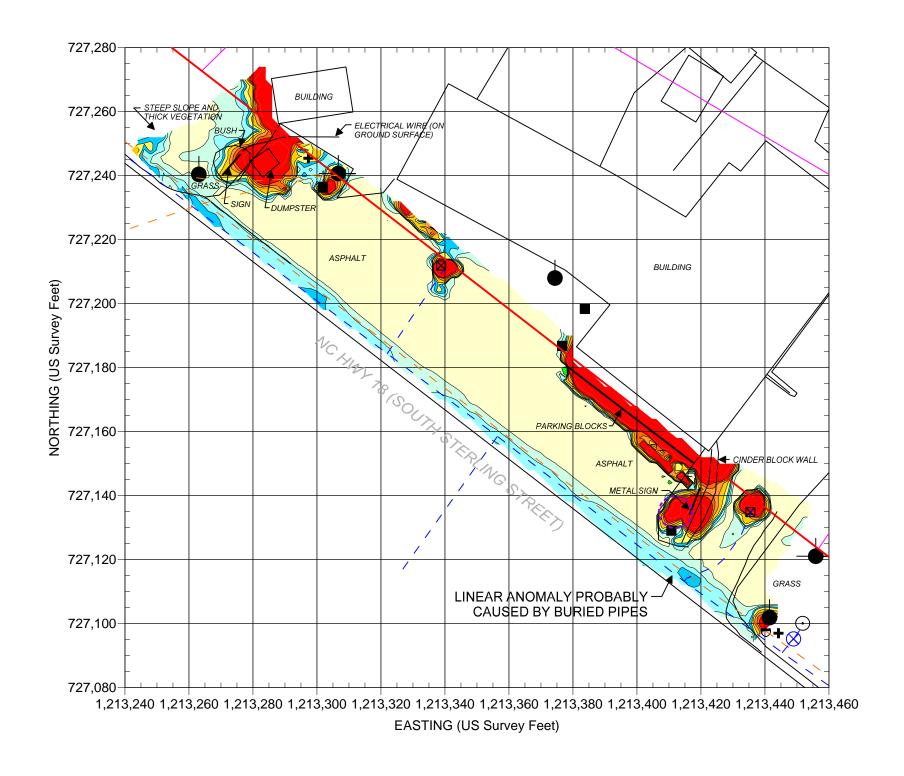


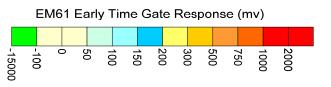
GSSI SIR-3000

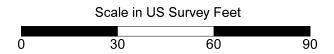


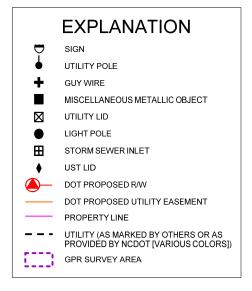
STATE PROJECT U-2550B BURKE CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.19 PHOTOS OF GEOPHYSICAL EQUIPMENT USED











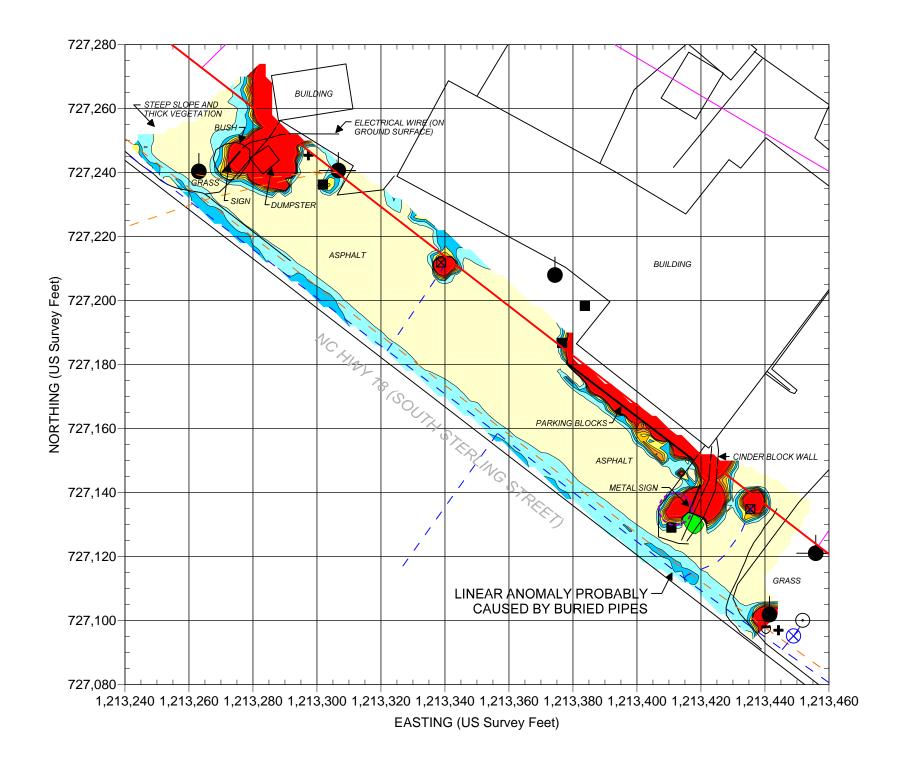
REF.: NCDOT FILE: u2550b_rdy_psh06.dgn (FOR SOME SITE FEATURES)

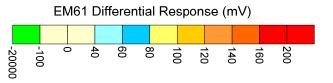
Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on March 24, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on March 31, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

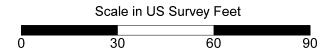


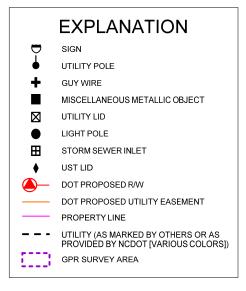
STATE PROJECT U-2550B BURKE COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.19 PARCEL 18 EM61 EARLY TIME GATE RESPONSE











REF.: NCDOT FILE: u2550b_rdy_psh06.dgn (FOR SOME SITE FEATURES)

Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on March 24, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on March 31, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



STATE PROJECT U-2550B BURKE COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.19 PARCEL 18 EM61 DIFFERENTIAL RESPONSE

APPENDIX B PROCEDURES FOR COLLECTING SOIL SAMPLES

Procedure for Collecting Soil Samples for Laboratory Testing Using the Geoprobe

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



APPENDIX C SOIL BORING RECORDS

M	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	ng, Inc.		Soil Boring Sample Record
MACTEC Pro Parcel #18 Cla	MACTEC Project ID: NCDOT Morganton Parcel #18 Claude E. Whitt Property		MACTEC Fig	MACTEC Field Representative
MACTEC Pro	MACTEC Project #: 6470-10-0057		T	Lloyd
Date: 4/1/2010				
Boring ID: SB-7	L-1			
Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
0-1	Asphalt and gravel		0	
1-2	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some quartz, little mica. Moist.		0	No unusual odors or stains
2-3	Red (2.5YR 4/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	No unusual odors or stains 0% Recovery from 2'-4' due to quartz pebble blocking barrel.
3-4	Red (2.5YR 4/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.	>=	0	
4-5	Red (2.5YR 4/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
2-6	Red (2.5YR 4/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
<i>L</i> -9	Strong brown (7.5YR 4/6) SILT, soft, slightly plastic, micaceous, some fine sand, some feldspar. Moist.		0	No unusual odors or stains
7-8	Strong brown (7.5YR 4/6) SILT, soft, slightly plastic, micaceous, some fine sand, some feldspar. Moist.		0	Residual soil
8-9	Strong brown (7.5YR 4/6) SILT, soft, slightly plastic, micaceous, some fine sand, some feldspar. Moist.		0	
9-10	Strong brown (7.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	No unusual odors or stains
10-11	Strong brown (7.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
11-12	Strong brown (7.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.	0950	0	Sample
				Drangrad by: M.T. Date: 4-78-10

Prepared by: MSC Checked by: CBS

Date: 4/28/10

M	MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	, Inc.	S S	Soil Boring Sample Record
MACTEC Pro Parcel #18 Cla	MACTEC Project ID: NCDOT Morganton Parcel #18 Claude E. Whitt Property	no		MACTEC Field Representative	epresentative
MACTEC Pro	MACTEC Project #: 6470-10-0057			Lloyd	
Date: 4/1/2010					
Boring ID: SB-8	8-				
Depth Interval	So	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
				PID	
0-1	Asphalt and gravel			0	
1-2	Dark yellowish brown (10YR 4/4 slightly plastic, micaceous. Moist	Dark yellowish brown (10YR 4/4) SANDY SILT, soft, slightly plastic, micaceous. Moist.		0	No unusual odors or stains
2-3	Yellowish red (5YR 4/6) SILT, soft, slightly pl mica, some fine sand. Moist.	SILT, soft, slightly plastic, some oist.		0	No unusual odors or stains Residual soil
3-4	Yellowish red (5YR 4/6) SILT, soft, slightly pl mica, some fine sand. Moist.	SILT, soft, slightly plastic, some oist.		. 0	
4-5	Yellowish red (5YR 4/6) SILT, soft, slightly pl mica, some fine sand. Moist.) SILT, soft, slightly plastic, some oist.	-	0	
5-6	Yellowish red (5YR 4/6) SILT, soft, slightly pl mica, some fine sand. Moist.	SILT, soft, slightly plastic, some oist.		0	
L-9	Yellowish red (7.5YR 5/6) SANDY S plastic, micaceous, few quartz. Moist.	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, few quartz. Moist.		0	No unusual odors or stains
7-8	Yellowish red (7.5YR 5/6) SANDY S plastic, micaceous, few quartz. Moist.	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, few quartz. Moist.		0	
8-9	Yellowish red (7.5YR 5/6) SANDY S plastic, micaceous, few quartz. Moist.	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, few quartz. Moist.		0	
9-10	Reddish yellow (7.5YR 6, plastic, micaceous. Moist.	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous. Moist.		0	No unusual odors or stains
10-11	Reddish yellow (7.5YR 6/	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous. Moist.		0	
11-12	Reddish yellow (7.5YR 6) plastic, micaceous. Moist.	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous. Moist.	1010	0	Sample
					Prepared by: MTG Date: 4.28-10

Date: 4.28/10
Date: 4/28/10 Prepared by: MJG. Checked by: CBS

M	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	, Inc.	Д	Soil Boring Sample Record
MACTEC Pro Parcel #18 Cla	MACTEC Project ID: NCDOT Morganton Parcel #18 Claude E. Whitt Property		MACTEC Field Representative	epresentative
MACTEC Pro	MACTEC Project #: 6470-10-0057		Lloyd	
Date: 4/1/2010				
Boring ID: SB-9	6-			
Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			III	
0-1	Asphalt and gravel		0	
1-2	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, some mica, some quartz. Moist.		0	No unusual odors or stains
2-3	Yellowish red (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some coarse sand. Moist.		0	No unusual odors or stains Residual soil
3-4	Yellowish red (7.5YR 5/8) SLLT with minor sand, soft, slightly plastic, some mica, some coarse sand. Moist.	3-0	0	
4-5	Yellowish red (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some coarse sand. Moist.		0	
2-6	Yellowish red (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some coarse sand. Moist.		0	
<i>L</i> -9			0	No unusual odors or stains
7-8	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
8-9	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
9-10	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	No unusual odors or stains
10-11	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
11-12	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.	1025	0	Sample
				4

Prepared by: MJG Date: 4-18-10
Checked by: CBS Date: H/38/10

)
I D	4
	7
/	I
N	M

M	MACTEC	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	, Inc.	Š	Soil Boring Sample Record
MACTEC Pro Parcel #18 Cla	MACTEC Project ID: NCDOT Morganton Parcel #18 Claude E. Whitt Property	u		MACTEC Field Representative	epresentative
MACTEC Pro	MACTEC Project #: 6470-10-0057			Lloyd	
Date: 4/1/2010					
Boring ID: SB-10	-10				
Depth	5	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
Interval	}			PID	
0-1	Asphalt and gravel			0	
1-2	Reddish yellow (7.5YR 6/8) SANDY S plastic, some mica, some quartz. Moist.	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, some mica, some quartz. Moist.		0	No unusual odors or stains
2-3	Strong brown (7.5YR 5/8 slightly plastic, some mic	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	No unusual odors or stains
3-4	Strong brown (7.5YR 5/8 slightly plastic, some mic	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.	1	0	
4-5	Strong brown (7.5YR 5/8 slightly plastic, some mic	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
2-6	Strong brown (7.5YR 5/8 slightly plastic, some mic	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
<i>L</i> -9	Yellowish red (7.5YR 5/6) SANDY SII plastic, micaceous, some quartz. Moist.	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	No unusual odors or stains
7-8	Yellowish red (7.5YR 5/6) SANDY SII plastic, micaceous, some quartz. Moist.	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
6-8	Yellowish red (7.5YR 5/6) SANDY SII plastic, micaceous, some quartz. Moist.	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
9-10	Reddish yellow (7.5YR 6/8) SANDY S plastic, micaceous, some quartz. Moist.	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	No unusual odors or stains
10-11	Reddish yellow (7.5YR 6/8) SANDY S plastic, micaceous, some quartz. Moist.	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
11-12	Reddish yellow (7.5YR 6/8) SANDY S plastic, micaceous, some quartz. Moist.	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.	1045	0	Sample
					001

Date: 4.28/10 Date: 4/28/10 Prepared by: MJE Checked by: CBS

)
T.	4
	7
/	I
NA	Z

M	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	, Inc.	S	Soil Boring Sample Record
MACTEC Pro Parcel #18 Cla	MACTEC Project ID: NCDOT Morganton Parcel #18 Claude E. Whitt Property		MACTEC Field Representative	epresentative_
MACTEC Pro	MACTEC Project #: 6470-10-0057		Lloyd	þ
Date: 4/1/2010				
Boring ID: SB-11	11.			
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
Interval			PID	
0-1	Asphalt and gravel		0	
1-2	Reddish yellow (7.5YR 5/8) SANDY SILT, soft, slightly		0	No unusual odors or stains
2-3	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	No unusual odors or stains
3-4	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.	,-	0	
4-5	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
5-6	Strong brown (7.5YR 5/8) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
L-9	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	No unusual odors or stains Residual soil
7-8	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
6-8	Yellowish red (7.5YR 5/6) SANDY SILT, soft, slightly plastic, micaceous, some quartz. Moist.		0	
9-10	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous. Moist.		0	No unusual odors or stains
10-11	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous. Moist.		0	
11-12	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, micaceous. Moist.	1110	0	Sample
				Duranged by: 4177 Date: U.96.17

Prepared by: MJC Checked by: CAS

Date: 4.28-10 Date: 4/28/10

-	7
	1
E	_
	2
✓ →	5
Y	>

M	MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	, Inc.	S S	Soil Boring Sample Record
MACTEC Pro Parcel #18 Cla	MACTEC Project ID: NCDOT Morganton Parcel #18 Claude E. Whitt Property		MACTEC Field Representative	epresentative
MACTEC Pro	MACTEC Project #: 6470-10-0057		Lloyd	
Date: 4/1/2010				
Boring ID: SB-12	-12			
Depth	Soil Description	in a	Headspace Screening Results (in ppm)	Comments
Interval			PID	
0-1	Grass and roots.		0	
1-2	Dark grayish brown (10YR 4/2) SILTY SAND, soft, nonplastic, some gravel. Moist.		0	No unusual odors or stains
2-3	Red (2.5YR 4/6) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	No unusual odors or stains
3-4	Red (2.5YR 4/6) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
4-5	Red (2.5YR 4/6) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	5' Some wood fragments
5-6	Red (2.5YR 4/6) SILT with minor sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
L-9	Yellowish red (5YR 5/6) SILT with minor sand, soft, slightly plastic, micaceous. Moist.		0	No unusual odors or stains
7-8	Yellowish red (5YR 5/6) SILT with minor sand, soft, slightly plastic, micaceous. Moist.		0	
6-8	Yellowish red (5YR 5/6) SILT with minor sand, soft, slightly plastic, micaceous. Moist.		0	
9-10	Reddish brown (5YR 4/4) SANDY SILT, soft, slightly plastic, micaceous. Moist to damp.		0	No unusual odors or stains
10-11	Reddish brown (5YR 4/4) SANDY SILT, soft, slightly plastic, micaceous. Moist to damp.		0	
11-12	Reddish brown (5YR 4/4) SANDY SILT, soft, slightly plastic, micaceous. Moist to damp.	1130	0	Sample
				Dunnand Ly 1177 Date: 11.90.11

Prepared by: MTG.
Checked by: CTSS

Date: 4.28/10

Date: 4/28/10

APPENDIX D

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

Case Narrative



Date:

04/19/10

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 Morganton

Prism COC Group No:

G0410079

Collection Date(s):

03/31/10 thru 04/02/10

Lab Submittal Date(s):

04/05/10

Client Project Name Or No: Morganton, NC WBS# 34831.1.1

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 32 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

Analysis Note for Q49432 MS Diesel Range Organics (DRO): Sample concentration too high for recovery evaluation. Analysis Note for Q49432 MSD Diesel Range Organics (DRO): Sample concentration too high for recovery evaluation.

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.

Data Reviewed by:

Steven H. Guptill

Project Manager:

Steven H. Guptill

Signature:

Signature:

04/19/10

Review Date:

04/19/10

Approval Date:

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.



Laboratory Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC
Project ID: NCDOT Morganton

Project No.: WBS# 34831.1.1

Sample Matrix: Soil

Client Sample ID:SB-7Prism Sample ID:275755COC Group:G0410079

Time Collected: 04/01/10 9:50 **Time Submitted:** 04/05/10 15:50

Parameter	Result	Units	Report Limit	t MDL	Dilution Factor	Method	Analysis Date/Time	Analys	Batch ID
Percent Solids Determination Percent Solids	78.0	%			1	SM2540 G	04/07/10 16:22	jbrayton	
Diesel Range Organics (DRO) by GO Diesel Range Organics (DRO)	:-FID BRL	mg/kg	8.9	1.4	1	8015B	04/14/10 19:25	jvogel	Q49432
Sample Preparation:				25.09 g	/ 1 mL	3545	04/13/10 13:25	athao	P27252
					Surrogate	•	% Recovery	Co	ntrol Limits
					o-Terphen	yl	69		49 - 124
Sample Weight Determination									
Weight 1	10.17	g			1	GRO	04/08/10 0:00	lbrown	
Weight 2	10.13	g			1	GRO	04/08/10 0:00	Ibrown	
Gasoline Range Organics (GRO) by	GC-FID								
Gasoline Range Organics (GRO)	BRL	mg/kg	6.4	4.0	50	8015B	04/10/10 12:29	heasler	Q49314

Surrogate recovery was outside of the control limits.

Surrogate	% Recovery	Control Limits
aaa-TFT	140 #	55 - 129

Page 7 of 27

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



Laboratory Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC
Project ID: NCDOT Morganton

Project No.: WBS# 34831.1.1

Sample Matrix: Soil

Client Sample ID: SB-8
Prism Sample ID: 275756
COC Group: G0410079

Time Collected: 04/01/10 10:10 **Time Submitted:** 04/05/10 15:50

Parameter	Result	Units	Report Limit	t MDL	Dilution Factor	Method	Analysis Date/Time	Analys	Batch
Percent Solids Determination									
Percent Solids	77.7	%			1	SM2540 G	04/07/10 16:22	jbrayton	
Diesel Range Organics (DRO) by GO	:-FID								
Diesel Range Organics (DRO)	BRL	mg/kg	9.0	1.5	1	8015B	04/14/10 20:35	jvogel	Q49432
Sample Preparation:				25.01 g	/ 1 mL	3545	04/13/10 13:25	athao	P27252
					Surrogate	1	% Recovery	Co	ntrol Limits
					o-Terphen	yl	83		49 - 124
Sample Weight Determination									
Weight 1	7.71	g			1	GRO	04/08/10 0:00	Ibrown	
Weight 2	9.38	g			1	GRO	04/08/10 0:00	lbrown	
Gasoline Range Organics (GRO) by	GC-FID								
Gasoline Range Organics (GRO)	BRL	mg/kg	6.4	4.0	50	8015B	04/10/10 13:00	heasler	Q49314

Surrogate recovery was outside of the control limits.

aaa-TFT	162 #	£ 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

This report should not be reproduced, except in its entirety, without the written consent of Prism Laboratories, Inc.



Laboratory Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC
Project ID: NCDOT Morganton

WBS# 34831.1.1

Sample Matrix: Soil

Project No.:

Client Sample ID: SB-9
Prism Sample ID: 275757
COC Group: G0410079

Time Collected: 04/01/10 10:25 **Time Submitted:** 04/05/10 15:50

Parameter	Result	Units	Repor Limit		Dilution Factor	Method	Analysis Date/Time	Analys	t Batch ID
Percent Solids Determination									
Percent Solids	81.6	%			1	SM2540 G	04/07/10 16:22	jbrayton	
Diesel Range Organics (DRO) by GO	:-FID								
Diesel Range Organics (DRO)	BRL	mg/kg	8.5	1.4	1	8015B	04/14/10 22:21	jvogel	Q49432
Sample Preparation:				25.16 g	/ 1 mL	3545	04/13/10 13:25	athao	P27252
					Surrogate	•	% Recovery	Co	ntrol Limits
					o-Terphen	yl	74		49 - 124
Sample Weight Determination									_
Weight 1	11.09	g			1	GRO	04/08/10 0:00	lbrown	
Weight 2	9.10	9			1	GRO	04/08/10 0:00	Ibrown	
Gasoline Range Organics (GRO) by	GC-FID								
Gasoline Range Organics (GRO)	BRL	mg/kg	6.1	3.8	50	8015B	04/10/10 13:32	heasler	Q49314

Surrogate recovery was outside of the control limits.

y Control Limits	% Recovery	Surrogate
# 55 - 129	149 #	aaa-TFT
	149	aaa-TFT

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

Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409 Page 9 of 27



Laboratory Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC
Project ID: NCDOT Morganton

WBS# 34831.1.1

Sample Matrix: Soil

Project No.:

Client Sample ID: SB-10
Prism Sample ID: 275758
COC Group: G0410079

Time Collected: 04/01/10 10:45 **Time Submitted:** 04/05/10 15:50

Parameter	Result	Units	Report Limit	t MDL	Dilution Factor	Method	Analysis Date/Time	Analys	t Batch ID
Percent Solids Determination									
Percent Solids	84.9	%			1	SM2540 G	04/07/10 16:22	jbrayton	
Diesel Range Organics (DRO) by GO	:-FID								
Diesel Range Organics (DRO)	BRL	mg/kg	8.2	1.3	1	8015B	04/14/10 18:14	jvogel	Q49432
Sample Preparation:				25.12 g	/ 1 mL	3545	04/13/10 13:25	athao	P27252
					Surrogate	•	% Recovery	Co	ntrol Limits
					o-Terphen	yl	77		49 - 124
Sample Weight Determination									
Weight 1	9.67	g			1	GRO	04/08/10 0:00	Ibrown	
Weight 2	8.03	g			1	GRO	04/08/10 0:00	lbrown	
Gasoline Range Organics (GRO) by	GC-FID								
Gasoline Range Organics (GRO)	BRL	mg/kg	5.9	3.7	50	8015B	04/10/10 14:03	heasler	Q49314

Surrogate recovery was outside of the control limits.

Surrogate	% Recovery	Control Limits
aaa-TFT	147 #	55 - 129

Page 10 of 27

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



Laboratory Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC
Project ID: NCDOT Morganton
Project No.: WBS# 34831.1.1

Sample Matrix: Soil

Client Sample ID: SB-11
Prism Sample ID: 275759
COC Group: G0410079

Time Collected: 04/02/10 11:10 **Time Submitted:** 04/05/10 15:50

Parameter	Result	Units	Report Limit	t MDL	Dilu Fac		Method	Analys Date/Ti		Anal	yst Batch ID
Percent Solids Determination Percent Solids	67.7	%			1		SM2540 G	04/08/10	15:30	jbrayton	
Diesel Range Organics (DRO) by GC	-FID										
Diesel Range Organics (DRO)	BRL	mg/kg	10	1.7	1		8015B	04/17/10	0:59	jvogel	Q49472
Sample Preparation:				25.08 g	/	1 mL	3545	04/15/10	16:00	athac	P27278
					Surr	ogate		% Re	covery	. (Control Limits
					o-Te	rphen	yl		81		49 - 124
Sample Weight Determination											
Weight 1	8.75	g			1		GRO	04/08/10	0:00	lbrown	
Weight 2	6.76	g			1		GRO	04/08/10	0:00	lbrown	
Gasoline Range Organics (GRO) by 0	GC-FID										
Gasoline Range Organics (GRO)	BRL	mg/kg	7.4	4.6	50)	8015B	04/10/10	22:25	heasler	Q49314
					Surr	ogate		% Re	covery		Control Limits
					-	•					

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



Laboratory Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC
Project ID: NCDOT Morganton

WBS# 34831.1.1

Sample Matrix: Soil

Project No.:

Client Sample ID: SB-12
Prism Sample ID: 275760
COC Group: G0410079

Time Collected: 04/02/10 11:30 **Time Submitted:** 04/05/10 15:50

Parameter	Result	Units	Report Limit	t MDL	Dilution Factor	Method	Analysis Date/Time	Analys	t Batch ID
Percent Solids Determination									
Percent Solids	76.9	%			1	SM2540 G	04/08/10 15:30	jbrayton	
Diesel Range Organics (DRO) by GO	-FID								
Diesel Range Organics (DRO)	BRL	mg/kg	9.1	1.5	1	8015B	04/17/10 1:34	jvogel	Q49472
Sample Preparation:				25.05 g	/ 1 mL	3545	04/15/10 16:00	athao	P27278
					Surrogate	,	% Recovery	Co	ntrol Limits
					o-Terphen	yl	79		49 - 124
Sample Weight Determination									
Weight 1	7.18	g			1	GRO	04/08/10 0:00	Ibrown	
Weight 2	7.22	g			1	GRO	04/08/10 0:00	lbrown	
Gasoline Range Organics (GRO) by	GC-FID								
Gasoline Range Organics (GRO)	BRL	mg/kg	6.5	4.1	50	8015B	04/10/10 21:23	heasler	Q49314

Surrogate recovery was outside of the control limits.

Surrogate	% Recovery	Control Limits			
aaa-TFT	144 #	55 - 129			

Page 12 of 27

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



Level II QC Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name:

Morganton, NC

COC Group Number: G0410079 Date/Time Submitted:

04/05/10 15:50

Project ID: **NCDOT Morganton** Project No.: WBS# 34831.1.1

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

Method	d Blank									QC Batch
		Result	RL	Control Limit	Units					ID
	Gasoline Range Organics (GRO)	ND	5	<2.5	mg/kg					Q49295
Labora	tory Control Sample					Recovery	Recovery Ranges			QC Batch
		Result	Spike Amour	t	Units	%	%			ID
	Gasoline Range Organics (GRO)	50.20	50		mg/kg	100	67-116			Q49295
Matrix	Spike					Recovery	Recovery			QC Batch
Sample I	D:	Result	Spike Amour	t	Units	%	Ranges %			ID
275461	Gasoline Range Organics (GRO)	41.90	50		mg/kg	84	57-113			Q49295
Matrix	Spike Duplicate					Recovery	Recovery Ranges	RPD	RPD Range	QC Batch
Sample I	D:	Result	Spike Amour	t	Units	%	%	%	%	ID
275461	Gasoline Range Organics (GRO)	44.10	50		mg/kg	88	57-113	5	0 - 23	Q49295

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

Method Blank									QC Batch
	Result	RL	Control Limit	Units					ID
Gasoline Range Organics (GRO)	ND	5	<2.5	mg/kg					Q49314
Laboratory Control Sample	Result	Spike Amou	ınt	Units	Recovery %	Recovery Ranges %			QC Batch ID
Gasoline Range Organics (GRO)	49.60	50		mg/kg	99	67-116			Q49314
Matrix Spike					Recovery	Recovery			QC Batch
Sample ID:	Result	Spike Amou	int	Units	%	Ranges %			ID
275755 Gasoline Range Organics (GRO)	37.45	50		mg/kg	75	57-113			Q49314
Matrix Spike Duplicate					Recovery	Recovery	RPD	RPD	QC Batch
ample ID: Result		Spike Amount		Units	%	Ranges		Range %	ID
275755 Gasoline Range Organics (GRO)	37.25	50		mg/kg	75	57-113	1	0 - 23	Q49314



Level II QC Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project Name: Morganton, NC

COC Group Number:
Date/Time Submitted:

G0410079

04/05/10 15:50

Project ID: NCDOT Morganton
Project No.: WBS# 34831.1.1

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

Method Blank									QC Batch
	Result	RL	Control Limit	Units					ID
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg					Q49319
Laboratory Control Sample	Result	Spike Amou	ınt	Units	Recovery %	Recovery Ranges %			QC Batch ID
Diesel Range Organics (DRO)	51.0	80		mg/kg	64	55-109			Q49319
Matrix Spike Sample ID:	Result	Spike Amou	ınt	Units	Recovery %	Recovery Ranges %			QC Batch ID
275749 Diesel Range Organics (DRO)	54.8	80		mg/kg	69	50-117			Q49319
Matrix Spike Duplicate Sample ID:	Result	Spike Amou	ınt	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
275749 Diesel Range Organics (DRO)	55.7	80		mg/kg	70	50-117	2	0 - 24	Q49319

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

Metho	d Blank									QC Batch
		Result	RL	Control Limit	Units					ID
	Gasoline Range Organics (GRO)	ND	5	<2.5	mg/kg					Q49405
Labora	tory Control Sample	Result	Spike Amou	unt	Units	Recovery %	Recovery Ranges %			QC Batch ID
	Gasoline Range Organics (GRO)	48.25	50		mg/kg	97	67-116			Q49405
Matrix	Spike					Recovery	Recovery			QC Batch
Sample I	D:	Result	Spike Amou	unt	Units	%	Ranges %			ID
275831	Gasoline Range Organics (GRO)	46.00	50		mg/kg	92	57-113			Q49405
Matrix	Spike Duplicate					Recovery	Recovery	RPD	RPD	QC Batch
Sample I	D:	Result	Spike Amou	unt	Units	%	Ranges %	%	Range %	ID
275831	Gasoline Range Organics (GRO)	47.80	50		mg/kg	96	57-113	4	0 - 23	Q49405



Level II QC Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project

Morganton, NC

COC Group Number:
Date/Time Submitted:

G0410079

04/05/10 15:50

Name: Project ID:

NCDOT Morganton

Project No.: WBS# 34831.1.1

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

Method Blank										QC Batch
	Result	RL	Control Limit	Units						ID
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg						Q49432
Laboratory Control Sample	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %				QC Batch ID
Diesel Range Organics (DRO)	54.8	80		mg/kg	69	55-109				Q49432
Matrix Spike Sample ID:	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %				QC Batch ID
276286 Diesel Range Organics (DRO)	391	80		mg/kg	-8 #	50-117				Q49432
Matrix Spike Duplicate Sample ID:	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %	RPD %		RPD Range %	QC Batch ID
276286 Diesel Range Organics (DRO)	302	80		mg/kg	-119 #	50-117	26	#	0 - 24	Q49432

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

Method Blank									QC Batch
	Result	RL	Control Limit	Units					ID
Gasoline Range Organics (GRO)	ND	5	<2.5	mg/kg					Q49444
Laboratory Control Sample	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %			QC Batch ID
Gasoline Range Organics (GRO)	47.65	50		mg/kg	95	67-116			Q49444
Matrix Spike					Recovery	Recovery			QC Batch
Sample ID:	Result	Spike Amou	nt	Units	%	Ranges %			ID
275668 Gasoline Range Organics (GRO)	43.30	50		mg/kg	87	57-113			Q49444
Matrix Spike Duplicate					Recovery	Recovery	RPD	RPD	QC Batch
Sample ID:	Result	Spike Amou	nt	Units	%	Ranges %	%	Range %	ID
275668 Gasoline Range Organics (GRO)	44.60	50		mg/kg	89	57-113	3	0 - 23	Q49444



Level II QC Report

04/19/10

N.C. Department of Transportation

Attn: Matt Gillis

c/o MACTEC Eng. & Consulting, Inc

3301 Atlantic Ave. Raleigh, NC 27604 Project

Morganton, NC

COC Group Number:
Date/Time Submitted:

G0410079

04/05/10 15:50

Name: Project ID:

NCDOT Morganton

Project No.: WBS# 34831.1.1

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

Method Blank									QC Batch
	Result	RL	Control Limit	Units					ID
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg					Q49472
Laboratory Control Sample	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %			QC Batch ID
Diesel Range Organics (DRO)	54.6	80		mg/kg	68	55-109			Q49472
Matrix Spike Sample ID:	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %			QC Batch ID
275759 Diesel Range Organics (DRO)	69.9	80		mg/kg	87	50-117			Q49472
Matrix Spike Duplicate Sample ID:	Result	Spike Amou	nt	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
275759 Diesel Range Organics (DRO)	73.4	80		mg/kg	92	50-117	5	0 - 24	Q49472

#-See Case Narrative

Full-Service Analytical &	Environmental Solutions	
	とりてにく	LABORATORIES, INC.

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

Report To/Contact Name: Ma Client Company Name:

Phone: 914-53! - 8056 Fax (Yes) (Ng): Reporting Address: 330 Email (Yes) (No)

Œ	
0	
0	
Щ	
Œ	
>	
ō	
Ě	
Ŋ	
U	
L	
Ō	
4	
I	•
O	

PAGE /__ OF ___ QUOTE # TO ENSURE PROPER BILLING: Project Name: NCD UT

USY Project: (Yes) (No *Please ATTACH any project specific reporting (QC LEVEL I III III IV) provisions and/or QC Requirements Short Hold Analysis: (Yes) (No) Invoice To: Ode ponul Address:

Camples INTACT upon arrival?		
Beceived ON WET ICE? Temp 1. 4.	<u>\</u>	
PROPER PRESERVATIVES indicated?	Ŋ	
Received WITHIN HOLDING TIMES?	Ŋ	
CUSTODY SEALS INTACT?		7
VOLATILES rec'd W/OUT HEADSPACE?	Y	>
PROPER CONTAINERS used?	Ş	

1					PRISM	D NO.	746	2757c	151	27575	375753	H5+	35	37575c	375757	3433	PIES	XIIX
TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL	NC				¥ -	<u>.</u> 6	अ १८१ ४६	SHE JHE	275751	375	37.5	४.२५३म्	375755	375	375	275753	PRESS DOWN FIRMLY - 3 COPIES	PRISM USE ONLY
PLING PE	교	N/A	<u> </u>			ЗКS											N FIRML	PRISM
NT/SAM	USACE	OTHER	NO -			REMARKS											Mod SS	
I BY CLIE	ELAC	SC OI	d: YES														PRE	7
ILLED IN	Certification: NELAC	S	Water Chlorinated: YES NO Sample Iced Upon Collection: YES	UESTED	\													
TO BE	Certifica		Water C	ANALYSES REQUESTED														ust be
1.1	Days	Must Be ed	olidays.	ANA	\ \ C	39	2									<u>-</u>	L	changes m
34831.	Days 🗆 5	Rush Work Pre-Approve	ess day. ekends and h services		<u>\</u>	35	>										Affiliation	bove. Any itialized.
Purchase Order No./Billing Reference 1085 34831.1.1	1 Day □ 2 Days □ 3 Days □ 4 Days □ 5 Days	16-9 Days X Standard 10 days ☐ 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	CAMDI E CONTAINED	PRESERVA-	TIVES	thank	•								-	pt	Joon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted inwriting to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.
Reference	🗆 2 Days 🗅	s 💢 Standaı	be processe iness days, e conditions	RAI ORIES, II	۵	SIZE	4/2 You Mathonal										Keisten Unyd	nalyses as analyses h
No./Billing	□ 1 Day	□ 6-9 Day	ased on bus	PRISM LABO		NO.	2,2 ym	3								ラ	Luste,	with the ar
se Order I	Requested Due Date	g Days"	Samples received after 1 Turnaround time is based SEE REVERSE FOR	NUCKEU BY PRI	בייווי בר כ											<u>۔</u>		proceed or any cha
Purcha	Requeste	"Working Days"	Samples Turnarou (SE)	2		SEE BELOW	CG Vog	<u>`</u>								≫	Sampled By (Print Name)	or Prism to
			27	MATRIX	(SOIL,	WATER OR SLUDGE)	- °S									->	Sampled	orization for
 		Racato	te Location Physical Address: Mozkalon NiC	TIME	COLLECTED	MILITARY	335	1400	277	1252	0(5)	1536	956	9101	1025	Shal	Ş	your author
(Yes)		Other Maken	Mag				8/31/18 1335	~	TO AND THE REAL PROPERTY OF THE PROPERTY OF T	~~			6 8/	1	10	<		Custody is Project Ma
OS to Fax	Address]	Address		DATE	COLLECTED	8/21/						/// /			→> `		Chain of (
none: 914- 331- 805 6 Fax (Yes) (Ng):	to) Email	Name: NC	Physical		_	RIPTION				en de l'annual de	MAN OR AND		2	. ^		0.	nature ζ	shing, this
ne: 914,	nail (Yes) (No) Email Address	3D Type: PDF Excel	Location		CLIENT	SAMPLE DESCRIPTION	58	SB . 2	SB. 3	S. B. 2	5.85	9-85	56.7	8-95	C B. 9	1,95	Šampler's Signature	on relingui mitted in

Site Departure Time: Site Arrival Time:

B

Field Tech Fee

Mileage:

1550

COC Group No

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTON'S EACH FRANSPORTATION TO THE LABORATORY.
SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINSILOGC UNTIL RECEIVED AT THE LABORATORY.

Received By: (Signature

GO41007

LANDFILL

CERCLA

RCRA:

SOLID WASTE:

DRINKING WATER:

Prism Field Service GROUNDWATER:

☐ Hand-delivered

☐ Fed Ex ☐ UPS

ORIGINAL

Full-Service And Environmental S	
PRISM LABORATORIES, INC.	

alytical & Solutions

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

Reporting Address: 3301 みずにかたく Report To/Contact Name: $M \mathcal{L}_{+}^{+}$ Client Company Name: $\Omega\Omega A$

Phone: 2,90831-8086 Fax (Yes) (NG): Email (庵) (No) Email Address. EDD Type: PDF X Excel

Site Location Physical Address: <u>Madくさつ もの,</u>M Site Location Name: NCD OT MAKENTON

CHAIN OF CUSTODY RECORD

Mencentor PAGE 2 OF \overline{S} QUOTE # TO ENSURE PROPER BILLING: Project Name: NCD & T

snort ноіd Analysis: (Yes) (No) UST Project: (Yes) (No) "Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements Invoice To: Call On a PC Address:

9 VOLATILES rec'd W/OUT HEADSPACE? PROPER PRESERVATIVES indicated? Received ON WET ICE? Temp 4.9 Received WITHIN HOLDING TIMES? PROPER CONTAINERS used? Samples INTACT upon arrival? **CUSTODY SEALS INTACT?**

> 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) ☐ 6-9 Days ☐ Standard 10 days ☐ Rush Work Must Be Requested Due Date □1 Day □2 Days □3 Days □4 Days □5 Days Samples received after 15:00 will be processed next business day. "Working Days"

PRISM TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL ¥, ᇿ 2 USACE Sample Iced Upon Collection: YES Water Chlorinated: YES NO OTHER Certification: NELAC_ ANALYSES REQUESTED

!	Ļ	TIME	MATRIX	SAMPLE	E CONTAINER	INER	PRESERVA-	_	ANALTSES REGUESTED	EGUESIED	\	-	PRISM
CLIENT AMPLE DESCRIPTION	COLLECTED	MILITARY	WATER OR SLUDGE)	*TYPE SEE BELOW	NO.	SIZE	TIVES	Sol	300		REMARKS	RKS	ID NO.
1. 6.	0 10 4/6/15	000	11	10 Vo.	11	77 120	of the Contract	>				70	93+5+E
, b	0/0/1	シュ	700'		. 1	10m	1. El El el el	-				70	27576
56.12		150										(0	37576
>6-1>		200										70	37576
6.14		30											अर ् रस3
56.75		28 × 1										C	H9448
58.16		シロシン										THE PARTY OF THE P	37576
58-17		727		-									27546
کرائے کراک اگریے کا		CL S!		The state of the s									375343
50 BC		0211	->	3		3	→	->	->				37576
30,00	Jake 1	0//1	>		2	~	9/4				PRESS DOWN FIRMLY - 3 COPIES	N FIRMLY -	3 COPIE
Sampler's Signature	122/1		Sampled By	Sampled By (Print Name) AUSTON	SCS		2	Affiliation			; π		
Joon relinguishing, this Chain of Custody's your authorization for Prism to proceed with the analyses as requested above. Any changes must be	Chain of Custo	dy is year auth	norization for	Prism to proc	seed with	the analyses	s as requested a ses have been ini	bove. Any tialized.	changes must be		52	PRISM USE ONLY	E ONLY
submitted in writing to	the Prism Project	cı manayer. II	ובום אווו חב מו	iai ges ioi airi	206.11010				oto Military/Hours	L	Additional Commonte.		

Site Departure Time: Site Arrival Time: Field Tech Fee Mileage:

ORIGINAL

ONC OSC

ONC OSC

ONC OSC

ONC OSC

OTHER:

LANDFILL

CERCLA

RCRA:

SOLID WASTE: ONC OSC

DRINKING WATER: ONC OSC

Other.

M Pism Field Service

☐ Hand-delivered

UST:

NPDES: □ Fed Ex

GRØUNDWATER:

G0410079

1550

2/2/10

□ NC □ SC □ NC

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY.
SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

ved By: (Signa