REPORT OF PRELIMINARY SITE ASSESSMENT

ILESH & HEMA SHAH PROPERTY (QUICK SNAK), PARCEL #110 STATE PROJECT U-2412B, TIP NO. 34802.1.1 4700 HIGH POINT ROAD GREENSBORO, NORTH CAROLINA

Prepared for:

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

Prepared by:

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

May 24, 2010

MACTEC Project No. 6470-10-0072





engineering and constructing a better tomorrow

May 24, 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 Ilesh & Hema Shah Property (Quick Snak), Parcel #110 State Project U-2412B, TIP No. 34802.1.1 4700 High Point Road Greensboro, North Carolina MACTEC Project No. 6470-10-0072

Dear Mr. Fox:

As authorized by Cathy Houser's acceptance of MACTEC Proposal No. PROP 10-RAL-141 dated March 22, 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.

William S. Grimes, L.G. Senior Geologist Robert M. Miller, P.E. Senior Project Manager/Principal Engineer

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Appendix B – Procedures for Collecting Soil Samples

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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 Ilesh & Hema Shah Property (Quick Snak; Shah Property) located at 4700 High Point Road in Greensboro, Guilford County, North Carolina (Figure 1). This site was one in a series of four sites that were investigated by MACTEC in conjunction with State Project U-2412B. 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 Shah property is located at 4700 High Point Road in Greensboro, Guilford County, North Carolina. The Shah Road property is developed with an active Citgo gasoline station and convenience store. The Guilford County Geographic Information Services (GIS) shows the property owner for 4700 High Point Road as Ilesh and Hema Shah, and identifies the site as parcel number 0030042 with the PIN of 7843311113. The site is bound to the north by Hilltop Road across which is the Stop & Shop B.P. gas station and convenience store; to the east by High Point Road, across which are a BG McGees restaurant and LaMila Grosa (market); to the south by First Citizens Bank; and to the west by a driveway that accesses First Citizens across which is Uncle Bob's Self-Storage (Figure 2).

1.2 Background Information

The gas station building is constructed with a slab-on-grade concrete foundation and concrete block exterior. The asphalt parking lot provides access to Hilltop Road and High Point Road. Four USTs were removed from the property in 1998. Groundwater contamination was documented at the site related to the removed USTs and the site was assigned incident number 5993. There are 32 monitoring wells installed on this parcel. There are 4 USTs currently installed at the site that are active.

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 identified two of the four known USTs at the site. Schnabel indicated that all four USTs are located within the planned right-of-way and/or easement. Schnabel's Geophysical Survey Report is included in Appendix A.

2.1 Soil Assessment

On April 19, 2010, Regional Probing Services (RPS), under contract to MACTEC, advanced six soil borings (Nos. SB2-1 through SB2-6) at the subject site using a GeoprobeTM direct-push drill rig. 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.

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 RPS 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 SB2-1 through SB2-6 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-ofcustody records are included in Appendix D. TPH-DRO was detected in soil sample SB2-1 at an estimated concentration that was below the laboratory reporting limit ("J" qualified). This result is below the 10 mg/kg Action Level for TPH-DRO established by NCDENR. TPH was not detected in soil samples SB2-2 through SB2-6 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 found evidence of a petroleum release in the vicinity of soil boring SB2-1 at an estimated concentration less than the regulatory Action Level.
- MACTEC does not have evidence to support the need for further environmental assessment by NCDOT at this time.

5.0 QUALIFICATIONS

This assessment was conducted 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

TABLE

Table 1 Summary of Laboratory Test Results State Project U-2412B, TIP No. 34802.1.1 Ilesh & Hema Shah Property (Quick Snak), Parcel #110 Greensboro, North Carolina MACTEC Job No. 6470-10-0072									
	alytical Method \rightarrow		EPA 8015	EPA 8015					
	minant of Concern	TPH-DRO	TPH-GRO						
Sample ID	Date Collected	Sample Depth		/TF7					
			mg	/Kg					
SB2-1	4/19/2010	11'-12'	3.2 J	<3.4					
SB2-2	4/19/2010	11'-12'	<9.9	<3.7					
SB2-3	4/19/2010	11'-12'	<11	<4.6					
SB2-4	4/19/2010	11'-12'	<10	<4.1					
SB2-5	4/19/2010	11'-12'	<10	<4.8					
SB2-6	4/19/2010	11'-12'	<11	<5.0					
NC	DENR Action Level		10	10					

Notes:

NCDENR

<#

J

North Carolina Department of Environment and Natural Resources

Analyte not detected above the Reporting Limit shown

Indicates analyte detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag)

Prepared by: $\underline{\mathcal{U}}$ Date: $\underline{\mathcal{5}}$ Date: $\underline{\mathcal{5}}$ Date: $\underline{\mathcal{5}}$ Date: $\underline{\mathcal{5}}$ Date: $\underline{\mathcal{5}}$

APPENDIX A

SCHNABEL ENGINEERING GEOPHYSICAL SURVEY REPORT



May 21, 2010

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

RE:

State Project:U-2412BWBS Element:34802.1.1County:GuilfordDescription:Greensboro – SR 4121 (Greensboro/High Point Road) from SR 1480
(Vickery Chapel Road) to SR 1424 (Hilltop Road)

Subject:Report on Geophysical Surveys for Parcel 110, Greensboro, NCSchnabel Engineering Project 09210013.20

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 three 8.5x11 color figures.

1.0 INTRODUCTION

The work described in this report was conducted on April 15, 18, and 19, 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 110 (Ilesh & Hema Shah Property, Quick Snak 2). 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,

1-8-1-8

T/ 336-274-9456 F/ 336-274-9486 11A Oak Branch Drive / Greensboro, NC / 27407 including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

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 110 were sent to Robert Miller and Kristen Lloyd of Mactec and Terry Fox of the NCDOT on April 16, 2010.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data for Parcel 110 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, reinforced concrete, or known site features (Figures 3 and 4). The GPR data collected over the anomaly immediately west of the tank pit on Parcel 110 indicated the presence of a known UST (UST No. 1). The GPR data collected over the tank pit, which is located immediately northeast of the northeast building corner, on Parcel 110 only indicated the presence of one of the known UST's (UST No. 2). The other two known UST's in the tank pit were unable to be imaged with GPR, possibly due to limited GPR signal penetration. All 4 known UST's are inside the limits of the planned right-of way and/or easement. An example GPR image showing the reflection from known UST No. 1 on Parcel 110 is shown on Figures 3 and 4. Figures 3 and 4 also include the location of known UST No. 1 as marked in the field. The GPR data indicate that known UST No. 1 on Parcel 110 is buried approximately 2.5 to 3.5 feet below ground surface and is about 3.5 feet in diameter and about 8 feet long, equivalent to a capacity of about 560 gallons. Photographs of the location of known UST No. 1, as marked in the field, are included on Figure 5.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 110 on Project U-2412B in Greensboro, NC indicates the following:

The geophysical data indicate the presence of a known UST (known UST No. 1) on Parcel 110 located approximately 20 feet northwest of the northeastern building corner. The UST is inside the planned right-of-way and/or easement. The known UST is about 560-gallon capacity and is buried about 2.5 to 3.5 feet below ground surface.

The EM data indicated a high-amplitude response from the known tank pit area. The GPR data only imaged one of the three known tanks in the tank pit area. The locations of the UST's in the known tank pit area were not marked onsite.

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

n Wlit

James W. Whitt Staff Geophysicist

Edward D. Billington, LG Senior Vice President

JW:NB Attachment: Figures (5) FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.20 (U-2412B, GUILFORD CO.)\REPORT\PARCEL 110\PARCEL 110 (U-2412B).DOC



Parcel 110 – Ilesh & Hema Shah Property, looking west



Parcel 110 – Ilesh & Hema Shah Property, looking northwest



STATE PROJECT U-2412B GUILFORD CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.20

PARCEL 110 SITE PHOTOS

FIGURE 1

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Geonics EM61-MK2

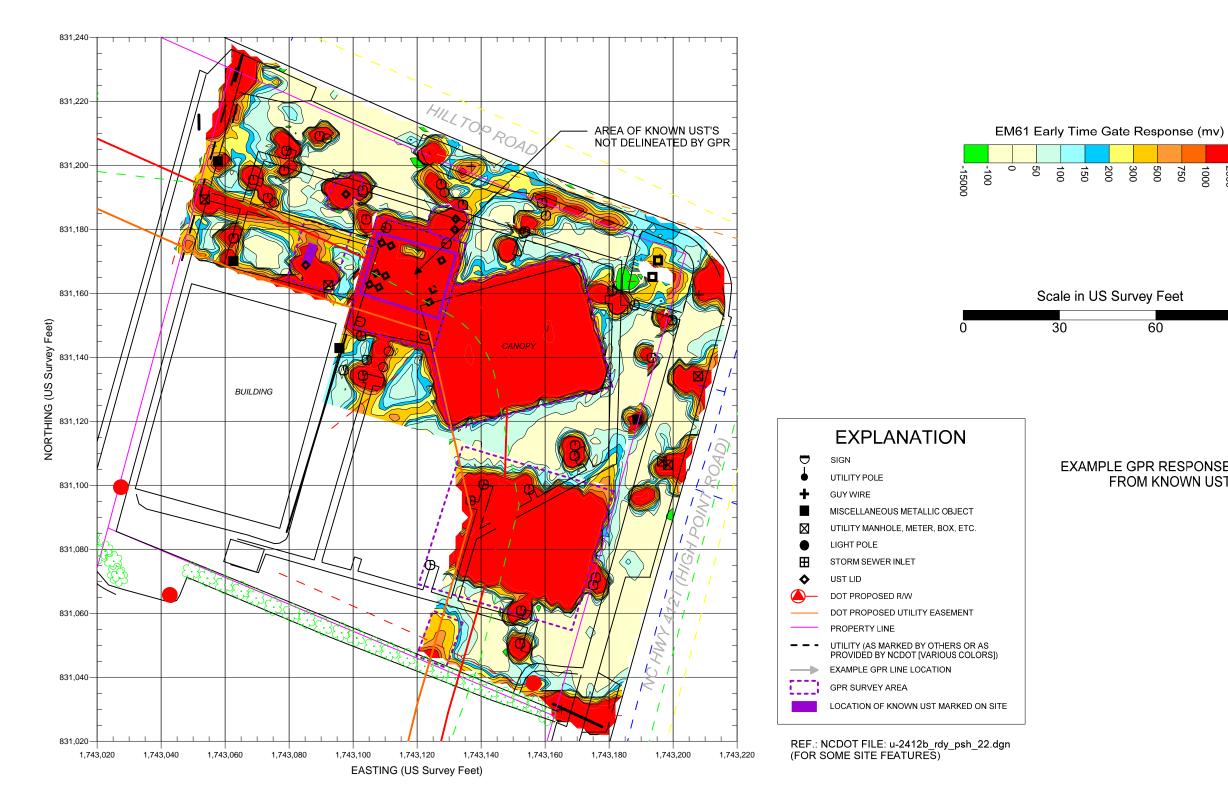


GSSI SIR-3000

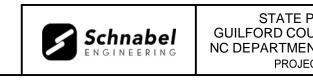


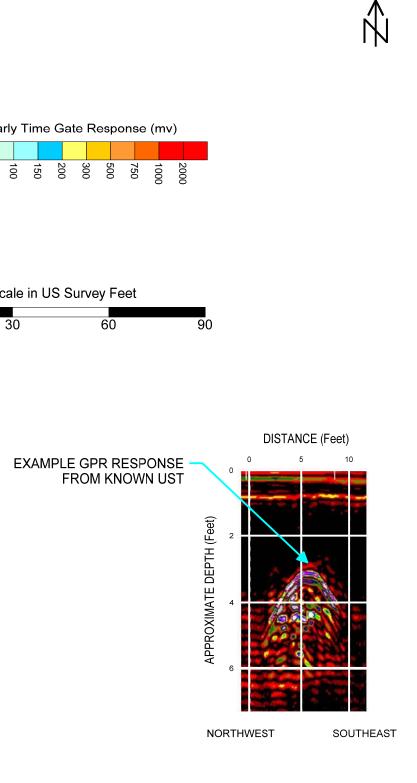
STATE PROJECT U-2412B GUILFORD CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.20 PHOTOS OF GEOPHYSICAL EQUIPMENT USED

FIGURE 2



Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on April 15, 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 April 18 and April 19, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



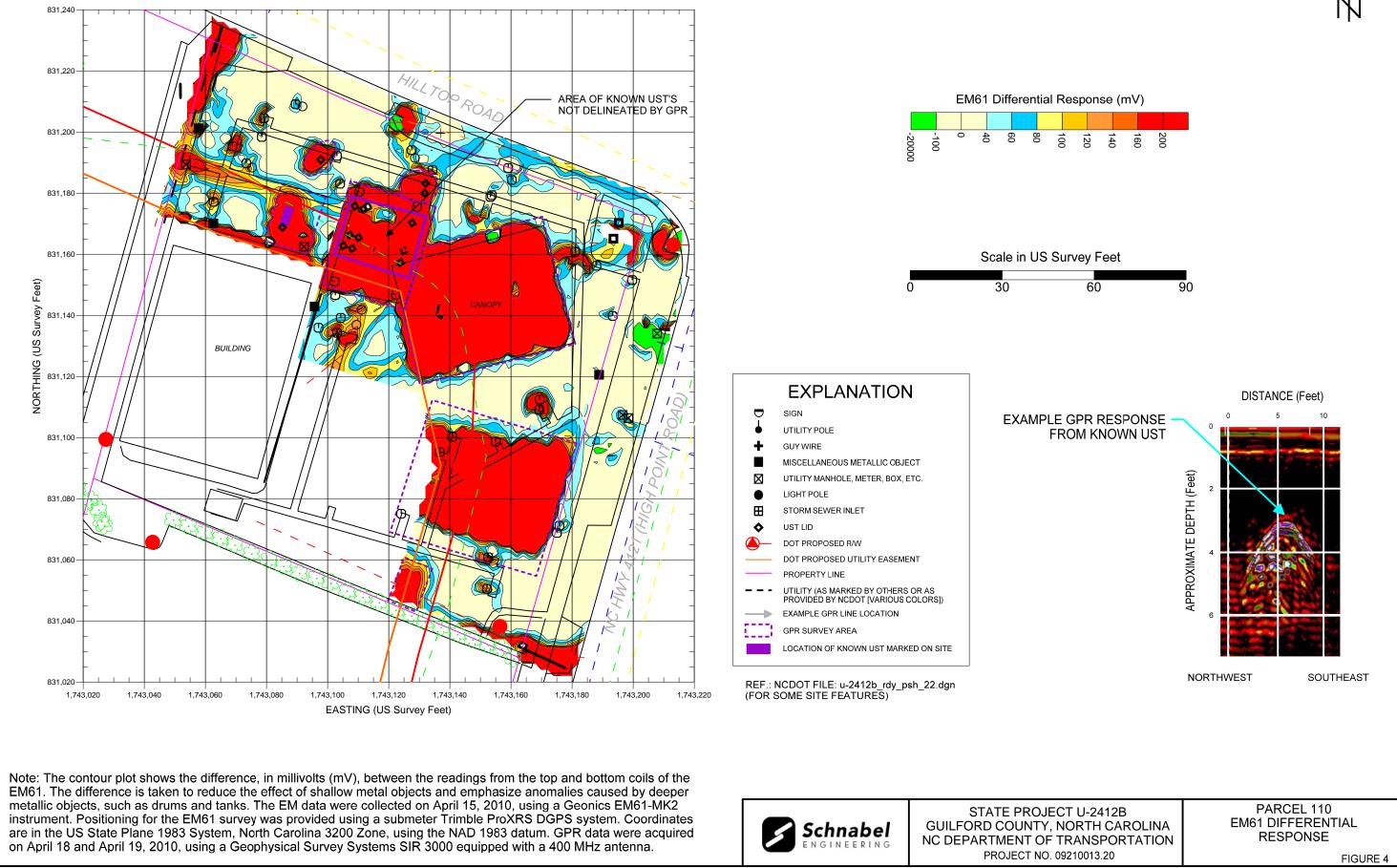


STATE PROJECT U-2412B GUILFORD COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.20

RESPONSE FIGURE 3

PARCEL 110

EM61 EARLY TIME GATE



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







Parcel 110 – Ilesh & Hema Shah Property, looking south. Photo shows approximate marked location of the known UST near the northeastern building corner.



Parcel 110 – Ilesh & Hema Shah Property, looking east. Photo shows approximate marked location of the known UST near the northeastern building corner.



STATE PROJECT U-2412B GUILFORD CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.20

PHOTOS OF KNOWN UST LOCATION ______ FIGURE 5

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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 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) 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

	ACTEC Engineering and Consul 3301 Atlantic Avenue Raleigh, North Carolina				
	Project ID: NCDOT Greensboro Sites a Shah Property (Quick Snak), Parcel #110		<u>M</u>	ACTEC Field Re	presentative
	Project #: 6470-10-0072			Lloyd	
ate: 4/19/2				21070	
oring ID: S]	N 36.03075°, W 0	79.86891°
Depth		Time		ce Screening s (in ppm)	Comments
Interval				PID	
0-1	Asphalt and gravel, Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.			0	No unusual odors or stains
1-2	Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.			0	
2-3	Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.			0	
3-4	Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.			0	
4-5	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.			0	
5-6	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.			0	
6-7	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.			0	
7-8	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.			0	
8-9	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.			0	
9-10	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.			0	
10-11	Reddish yellow (7.5YR 7/8) SANDY SILT, soft, slightly plastic, some mica, some coarse sand. Moist to damp.			0	
11-12	Reddish yellow (7.5YR 7/8) SANDY SILT, soft, slightly plastic, some mica, some coarse sand. Moist to damp.	1420		0	Sample

	ACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina		So	il Boring Sample Record		
	roject ID: NCDOT Greensboro Sites		MACTEC F	ield Representative		
	Shah Property (Quick Snak), Parcel #110					
MACTEC Project #: 6470-10-0072				Lloyd		
ate: 4/19/2				W		
oring ID: S	B2-2		1	0°, W 079.86875°		
Depth Interval			Headspace Screening Results (in ppm)	Comments		
			PID			
0-1	Asphalt and gravel, Reddish brown (5YR 4/3) CLAYEY SILT, firm, slightly plastic. Moist.		0	No unusual odors or stains		
1-2	Reddish brown (5YR 4/3) CLAYEY SILT, firm, slightly plastic. Moist.		0			
2-3	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0			
3-4	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0			
4-5	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0			
5-6	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0			
6-7	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	A		
7-8	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0			
8-9	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0			
9-10	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0			
10-11	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0			
11-12	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, trace mica. Moist.	1450	0	Sample Prepared by: <u><u></u>Date: <u></u></u>		

M	ACTEC MACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina	•	Soi	il Boring Sample Record
	roject ID: NCDOT Greensboro Sites		MACTEC Eig	eld <u>Representative</u>
	Shah Property (Quick Snak), Parcel #110			
	Project #: 6470-10-0072		I	Lloyd
Date: 4/19/2	010			
Boring ID: S	SB2-3		N 36.03065°	°, W 079.86857°
Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm) PID	Comments
0-1	Grass and roots, Reddish brown (5YR 4/3) CLAYEY SILT, firm, slightly plastic. Moist.		0	No unusual odors or stains
1-2	Reddish brown (5YR 4/3) CLAYEY SILT, firm, slightly plastic. Moist.		0	
2-3	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
3-4	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
4-5	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
5-6	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
6-7	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
7-8	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
8-9	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
9-10	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.	Ar and a second s	0	
10-11	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, some mica, trace black. Moist to damp.		0	
11-12	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, some mica, trace black. Moist to damp.	1505	0	Sample

	ACTEC MACTEC Engineering and Consulting, Inc 3301 Atlantic Avenue Raleigh, North Carolina	•	Soi	l Boring Sample Record	
	oject ID: NCDOT Greensboro Sites		MACTEC Field F	Representative	
	Shah Property (Quick Snak), Parcel #110				
MACTEC Project #: 6470-10-0072			Lloy	'd	
Date: 4/19/2010					
Boring ID: SE	32-4		N 36.03058°, W	7 079.86852°	
Depth	Soil Description	Time	Headspace Screening Results (in ppm)	Comments	
Interval	Son Description	Time	PID	Comments	
0-1	Asphalt and gravel, Reddish brown (5YR 4/3) CLAYEY SILT, firm, slightly plastic. Moist.		0	No unusual odors or stains	
1-2	Reddish brown (5YR 4/3) CLAYEY SILT, firm, slightly plastic. Moist.		0		
2-3	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0		
3-4	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0		
4-5	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0		
5-6	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0		
6-7	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0		
7-8	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0		
8-9	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0		
9-10	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0		
10-11	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, some mica, trace black. Moist to damp.		0		
11-12	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, some mica, trace black. Moist to damp.	1520	0	Sample	

Prepared by: <u>wy-</u> Date: <u>5-10-10</u> Checked by: <u>CBS</u> Date: <u>5/21/10</u>

M	ACTEC Engineering and Consulting, Inc. 3301 Atlantic Avenue Raleigh, North Carolina			Soil Boring Sample Record
	oject ID: NCDOT Greensboro Sites		MACTEC Fi	eld Representative
	a Shah Property (Quick Snak), Parcel #110			
MACTEC Pr	roject #: 6470-10-0072]	Lloyd
Date: 4/19/20	10			
Boring ID: Sl	82-5		N 36.03044	I°, W 079.86857°
Depth Interval Soil Description		Time	Headspace Screening Results (in ppm)	Comments
mutvar			PID	
0-1	Asphalt and gravel, Reddish brown (5YR 5/3) CLAYEY SILT, firm, slightly plastic. Moist.		0	No unusual odors or stains
1-2	Reddish brown (5YR 5/3) CLAYEY SILT, firm, slightly plastic. Moist.		0	
2-3	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
3-4	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
4-5	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
5-6	Red (2.5YR 4/8) SANDY SILT, firm, slightly plastic. Moist.		0	
6-7	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
7-8	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
8-9	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
9-10	Red and yellow (2.5YR 4/8 and 10YR 7/8) SILT, soft, slightly plastic, some fine sand, trace mica. Moist.		0	
10-11	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, some mica, trace black. Moist to damp.		0	
11-12	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some fine sand, some mica, trace black. Moist to damp.	1530	0	Sample

Prepared by: <u>Cr35</u> Date: <u>Solution</u> Checked by: <u>Cr35</u> Date: <u>Solution</u>

	ACTEC Engineering and Consulting 3301 Atlantic Avenue Raleigh, North Carolina				
	roject ID: NCDOT Greensboro Sites a Shah Property (Quick Snak), Parcel #110		<u>MAC</u>	<u> FEC Field Rep</u>	<u>presentative</u>
	roject #: 6470-10-0072			Lloyd	
Date: 4/19/20				2	
oring ID: S	B2-6		N 30	6.03027°, W 07	79.86862°
Depth	Soil Description	Time	Headspace Sc Results (in		Comments
Interval			PID		079.86862° Comments No unusual odors or stains
0-1	Grass and roots, Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.		0		No unusual odors or stains
1-2	Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.		0		
2-3	Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.		0		
3-4	Yellowish brown (10YR 5/4) SILTY SAND, soft, nonplastic, some quartz, some mica. Moist.		0		
4-5	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0		
5-6	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0		
6-7	Red (2.5YR 4/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0		
7-8	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0		
8-9	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0		
9-10	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0		
10-11	Reddish yellow (7.5YR 7/8) SANDY SILT, soft, slightly plastic, some mica, some coarse sand. Moist to damp.		0		
11-12	Reddish yellow (7.5YR 7/8) SANDY SILT, soft, slightly plastic, some mica, some coarse sand. Moist to damp.	1600	0		Sample

APPENDIX D

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS



Full-Service Analytical & **Environmental Solutions** NC Certification No. 402 SC Certification No. 99012 NC Drinking Water Cert No. 37735

05/05/2010

Mactec - Raleigh (NCDOT Project) Matt Gillis c/o MACTEC Eng. & Consulting, Inc. 3301 Atlantic Av Raleigh, NC 27604

Project: NCDOT Greensboro Project No.: WBS 34802.1.1 Lab Submittal Date: 04/22/2010 Prism Work Order: 0040318

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

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

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

Respectfully,

PRISM LABORATORIES, INC.

Steven H. Suytill

reporting limit indicated with a J.

Project Manager

Data Qualifiers Key Reference:

MI	Matrix spike outside of the control limits. Matrix interference suspected.	
М	Matrix spike outside of the control limits.	
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).	
D	RPD value outside of the control limits.	
Af	Surrogate recovery is above the control limits.	
Ae	Surrogate recovery is above range due to sample matrix interference.	
Ad	Surrogate recovery above the control limits.	
Ac	Surrogate recovery above range.	
Ab	Surrogate recovered outside established QC range	
Aa	Surrogate outside control limits.	Nr 17
A BRL MDL RPD	Sample analyzed out of hold time. Below Reporting Limit Method Detection Limit Relative Percent Difference	p-1-17
*	Results reported to the reporting limit. All other results are reported to the MDL with values between	MDL and

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Steven H. Suptill

Reviewed By

Sample Receipt Summary



Prism Work Order: 0040318

05/05/2010

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
SB1-1	0040318-01	Solid	04/19/10	04/22/10
SB1-2	0040318-02	Solid	04/19/10	04/22/10
SB1-3	0040318-03	Solid	04/19/10	04/22/10
SB1-4	0040318-04	Solid	04/19/10	04/22/10
SB1-5	0040318-05	Solid	04/19/10	04/22/10
SB1-6	0040318-06	Solid	04/19/10	04/22/10
SB2-1	0040318-07	Solid	04/19/10	04/22/10
SB2-2	0040318-08	Solid	04/19/10	04/22/10
SB2-3	0040318-09	Solid	04/19/10	04/22/10
SB2-4	0040318-10	[·] Solid	04/19/10	04/22/10
SB2-5	0040318-11	Solid	04/19/10	04/22/10
SB2-6	0040318-12	Solid	04/19/10	04/22/10
SB3-1	0040318-13	Solid	04/20/10	04/22/10
SB3-2	0040318-14	Solid	04/20/10	04/22/10
SB3-3	0040318-15	Solid	04/20/10	04/22/10
SB3-4	0040318-16	Solid	04/20/10	04/22/10
SB3-5	0040318-17	Solid	04/20/10	04/22/10
SB3-6	0040318-18	Solid	04/20/10	04/22/10
SB4-1	0040318-19	Solid	04/20/10	04/22/10
SB4-2	0040318-20	Solid	04/20/10	04/22/10
SB4-3	0040318-21	Solid	04/20/10	04/22/10
SB4-4	0040318-22	Solid	04/20/10	04/22/10
SB4-5	0040318-23	Solid	04/20/10	04/22/10
SB4-6	0040318-24	Solid	04/20/10	04/22/10

Samples received in good condition at 1.7 degrees C unless otherwise noted.

	Full-Service Analytical Environmental Solution	
Mactec - Raleigh (NCDC	T Project)	Project: NCDOT 0

Attn: Matt Gillis c/o MACTEC Eng. & Consulting, Inc, 3301 Project No.: WBS 34802.1.1 Raleigh, NC 27604

Project: NCDOT Greensboro

Sample Matrix: Solid

Client Sample ID: SB2-1 Prism Sample ID: 0040318-07 Prism Work Order: 0040318 Time Collected: 04/19/10 14:20 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Anai	yst .	Batch ID
Extractable Petroleum Hydro	carbons by GC/FID									
Diesel Range Organics	3.2 J	mg/kg dry	9.3	1.5	1	8015C	4/30/10 1:	53 J	MV	P0D0313
			Surrogate			Recov	егу	Cor	ntrol L	.imits
			o-Terphenyl			102	2 %	49-	124	
General Chemistry Paramete	ers									
% Solids	75.2	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12	40 J.	AB	P0D0254
Volatile Petroleum Hydrocarl	bons by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	3.4	0.44	50	8015C	4/30/10 11	:58 H	IPE	P0D0352
			Surrogate			Recov	ery	Cor	ntrol L	imits
			a,a,a-Trifluor	otoluene		91	%	55-	129	

Laboratory Report

05/05/2010

	Full-Service An Environmental I
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Mactec - Raleigh (NCDOT Project)

Kin

Attn: Matt Gillis

Raleigh, NC 27604

nalytical & Solutions

Project: NCDOT Greensboro

c/o MACTEC Eng. & Consulting, Inc, 3301 Project No.: WBS 34802.1.1 Sample Matrix: Solid

Client Sample ID: SB2-2 Prism Sample ID: 0040318-08 Prism Work Order: 0040318 Time Collected: 04/19/10 14:50 Time Submitted: 04/22/10 13:50

94 %

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Extractable Petroleum Hydro	carbons by GC/FID		····						
Diesel Range Organics	BRL	mg/kg dry	9.9	1.6	1	8015C	4/30/10 3:0	4 JMV	P0D0313
			Surrogate			Recov	ery	Control	Limits
			o-Terphenyl			98	%	49-124	
General Chemistry Parameter	rs								
% Solids	70.4	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:4	IO JAB	P0D0254
Volatile Petroleum Hydrocark	ons by GC/FID								
Gasoline Range Organics	BRL	mg/kg dry	3.7	0.48	50	8015C	4/30/10 21:	19 HPE	P0D0421
			Surrogate			Recov	ery	Control	Limits

a,a,a-Trifluorotoluene

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55-129

05/05/2010

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05/05/2010

Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis c/o MACTEC Eng. & Consulting, Inc, 3301 Project No.: WBS 34802.1.1 Raleigh, NC 27604

l

Project: NCDOT Greensboro

Sample Matrix: Solid

Client Sample ID: SB2-3 Prism Sample ID: 0040318-09 Prism Work Order: 0040318 Time Collected: 04/19/10 15:05 Time Submitted: 04/22/10 13:50

Parameter	Result	Result Units Report MDL Dilution Limit Factor		Method	Analyst	Batch ID			
Extractable Petroleum Hydrod	carbons by GC/FID								
Diesel Range Organics	BRL	mg/kg dry	11	1.7	1	8015C	4/30/10 2:28	JMV	P0D0313
			Surrogate			Recov	Control Limits		
		o-Terphenyl				91	49-124		
General Chemistry Parameter	ſS								
% Solids	66.4	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
Volatile Petroleum Hydrocarb	ons by GC/FID								
Gasoline Range Organics	BRL	mg/kg dry	4.6	0.59	50	8015C	4/30/10 21:51	HPE	P0D0421
			Surrogate			Recov	Control Limits		
			a,a,a-Trifluorotoluene			11(55-129		

PRISM Full-Service Analytical Environmental Solution							Labora		05/05/2010
Mactec - Raleigh (NCDOT Project)	Project: NCD	OT Gree	nsboro		Client	Sample ID:	SB2-4		
Attn: Matt Gillis					Prism	Sample ID:	0040318-10		
c/o MACTEC Eng. & Consulting, Inc, 3301 Project No.: WB			02.1.1	Prism Work Order: 0040318					
Raleigh, NC 27604	Sample Matr		Time Collected: 04/19/10 15:20						
					Time S	Submitted: 0	4/22/10 13:5	60	
Parameter Resu	llt	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID

Diesel Range Organics	BRL	mg/kg dry	10	1.7	1	8015C	4/30/10 3:39	JMV	P0D0313
			Surrogate			Recov	Control Limits		
		o-Terphenyl				12:	49-124		
General Chemistry Parameters									
% Solids	67.6	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
Volatile Petroleum Hydrocarbons	by GC/FID								
Gasoline Range Organics	BRL	mg/kg dry	4.1	0.54	50	8015C	4/30/10 22:22	HPE	P0D0421
			Surrogate			Recov	егу	Control	Limits
			a.a.a-Trifluorotoluene		12:	55-129			

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Laboratory Report

05/05/2010

Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis c/o MACTEC Eng. & Consulting, Inc, 3301 Project No.: WBS 34802.1.1 Raleigh, NC 27604

ð

Project: NCDOT Greensboro

Sample Matrix: Solid

Client Sample ID: SB2-5 Prism Sample ID: 0040318-11 Prism Work Order: 0040318 Time Collected: 04/19/10 15:30 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Extractable Petroleum Hydroca	arbons by GC/FID								
Diesel Range Organics	BRL	mg/kg dry	10	1.7	1	8015C	4/30/10 10:44	JMV	P0D0385
			Surrogate			Recov	Control Limits		
			o-Terphenyl			10:	49-124		
General Chemistry Parameters									
% Solids	66.6	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
Volatile Petroleum Hydrocarbo	ns by GC/FID								
Gasoline Range Organics	BRL	mg/kg dry	4.8	0.63	50	8015C	4/30/10 22:53	HPE	P0D0421
			Surrogate			Recov	/ery	Control	Limits
			a,a,a-Trifluorotoluene			128	55-129		

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LA	BORATORIES, INC.	

Laboratory Report

05/05/2010

Mactec - Raleigh (NCDOT Project)	Project: NCDO
Attn: Matt Gillis	
c/o MACTEC Eng. & Consulting, Inc, 3301	Project No.: W
Raleigh, NC 27604	Sample Matrix:

T Greensboro

BS 34802.1.1 c: Solid

Client Sample ID: SB2-6 Prism Sample ID: 0040318-12 Prism Work Order: 0040318 Time Collected: 04/19/10 16:00 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Extractable Petroleum Hydrocar	bons by GC/FID								
Diesel Range Organics	BRL	mg/kg dry	11	1.7	1	8015C	4/30/10 11:19	VML (P0D0385
			Surrogate			Recov	ery	Control	Limits
			o-Terpheny!			122	49-124		
General Chemistry Parameters									
% Solids	66.1	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
Volatile Petroleum Hydrocarbon	s by GC/FID								
Gasoline Range Organics	BRL	mg/kg dry	5.0	0.64	50	8015C	4/30/10 23:24	HPE	P0D0421
			Surrogate			Recov	Control Limits		
			a,a,a-Trifluor	otoluene		127	7 %	55-129	

Full-Service Analytical & Environmental Solutions



Level II QC Report

5/5/10

Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis c/o MACTEC Eng. & Consulting, Inc, 3301 Raleigh, NC 27604

Project: NCDOT Greensboro

Project No: WBS 34802.1.1

Prism Work Order: 0040318 Time Submitted: 04/22/10 1:50:00PM

Volatile Petroleum Hydrocarbons by GC/FID - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P0D0352 - 5035										
Blank (P0D0352-BLK1)				Prepared	: 04/28/10	Analyzed	1: 04/30/10			
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	4.25		mg/kg wet	5.00		85	55-129			
LCS (P0D0352-BS1)				Prepared	: 04/28/10	Analyzed	: 04/30/10			
Gasoline Range Organics	43.2	5.0	mg/kg wet	50.0		86	67-116			
Surrogate: a,a,a-Trifluorotoluene	4.80		• mg/kg wet	5.00		96	55-129			
Matrix Spike (P0D0352-MS1)	Sou	rce: 004033	3-06	Prepared	: 04/28/10	Analyzed	l: 04/30/10			
Gasoline Range Organics	59.1	6.2	mg/kg dry	62.1	BRL	95	57-113			
Surrogate: a,a,a-Trifluorotoluene	5.40		mg/kg dry	6.21		87	55-129			
Matrix Spike Dup (P0D0352-MSD1)	Sou	rce: 004033	3-06	Prepared	: 04/28/10	Analyzed	1: 04/30/10			
Gasoline Range Organics	60.1	6.2	mg/kg dry	62.1	BRL	97	57-113	2	23	
Surrogate: a,a,a-Trifluorotoluene	5.28		mg/kg dry	6.21		85	55-129			
Batch P0D0421 - 5035										
Blank (P0D0421-BLK1)				Prepared	& Analyze	ed: 04/30/1	10			
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	4.65		mg/kg wet	5.00		93	55-129			
LCS (P0D0421-BS1)				Prepared	& Analyze	ed: 04/30/*	10			
Gasoline Range Organics	44.1	5.0	mg/kg wet	50.0		88	67-116			
Surrogate: a,a,a-Trifluorotoluene	4.90		mg/kg wet	5.00		98	55-129			
Matrix Spike (P0D0421-MS1)	Sou	rce: 004034	5-01	Prepared	& Analyze	ed: 04/30/*	10			
Gasoline Range Organics	70.1	6.2	mg/kg dry	61.7	BRL	114	57-113			
Surrogate: a,a,a-Trifluorotoluene	6.91		mg/kg dry	6.17		112	55-129			

LADORATORIES, INC.		
Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis	Project: NCDOT Greensboro	Prism Work Order: 0040318 Time Submitted: 04/22/10 1:50:00PM
c/o MACTEC Eng. & Consulting, Inc, 3301 Raleigh, NC 27604	Project No: WBS 34802.1.1	
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Volatile Petroleum Hydrocarbons by GC/FID - Quality Control

Full-Service Analytical & Environmental Solutions

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P0D0421 - 5035										
Matrix Spike Dup (P0D0421-MSD1)	Sour	ce: 004034	5-01	Prepared	& Analyze	ed: 04/30/1	0			
Gasoline Range Organics	69.4	6.2	mg/kg dry	61.7	BRL	112	57-113	0.9	23	·····
Surrogate: a,a,a-Trifluorotoluene	6.98		mg/kg dry	6 .1 7		113	55-129			
Batch P0E0019 - 5035		<u>.</u>								
Blank (P0E0019-BLK1)				Prepared	& Analyze	ed: 05/03/1	0			
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	4.95		mg/kg wet	5.00		99	55-129			
LCS (P0E0019-BS1)				Prepared	& Analyze	ed: 05/03/1	0			
Gasoline Range Organics	39.6	5.0	mg/kg wet	50.0		79	67-116			
Surrogate: a,a,a-Trifluorotoluene	4.80		mg/kg wet	5.00		96	55-129			
Matrix Spike (P0E0019-MS1)	Sour	ce: 004031	8-16	Prepared	& Analyze	ed: 05/03/1	0			
Gasoline Range Organics	21.0	4.0	mg/kg dry	39.8	BRL	53	57-113			MI
Surrogate: a,a,a-Trifluorotoluene	3.03		mg/kg dry	3.98		76	55-129			
Matrix Spike Dup (P0E0019-MSD1)	Sour	ce: 004031	8-16	Prepared	& Analyze	ed: 05/03/1	0			
Gasoline Range Organics	22.2	4.0	mg/kg dry	39.8	BRL	56	57-113	6	23	MI
Surrogate: a,a,a-Trifluorotoluene	3.11		mg/kg dry	3.98		78	55-129			

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Level II QC Report

5/5/10

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Level II QC Report

5/5/10

Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis c/o MACTEC Eng. & Consulting, Inc, 3301 Raleigh, NC 27604

Project: NCDOT Greensboro

301 Project No: WBS 34802.1.1

Prism Work Order: 0040318 Time Submitted: 04/22/10 1:50:00PM

Extractable Petroleum Hydrocarbons by GC/FID - Quality Control

Full-Service Analytical & Environmental Solutions

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD	Madaa
Analyte	Result	Lunu	Units	Levei	Result	%REU	Limas	RPD	Limit	Notes
Batch P0D0313 - 3545A					·····					
Blank (P0D0313-BLK1)				Prepared	: 04/27/10	Analyzed	: 04/29/10			
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.46		mg/kg wet	1.60		91	49-124			
LCS (P0D0313-BS1)				Prepared	: 04/27/10	Analyzed	: 04/29/10			
Diesel Range Organics	58.8	7.0	mg/kg wet	80.0		74	55-109			
Surrogate: o-Terphenyl	1.91		. mg/kg wet	1.60		119	49-124			
Matrix Spike (P0D0313-MS1)	Source	e: 004031	8-02	Prepared	: 04/27/10	Analyzed	: 04/29/10			
Diesel Range Organics	70.5	8.9	mg/kg dry	102	BRL	69	50-117			· · · · · · · · · · · · · · · · · · ·
Surrogate: o-Terphenyl	2.45		mg/kg dry	2.04		120	49-124			
Matrix Spike Dup (P0D0313-MSD1)	Sourc	e: 004031;	8-02	Prepared	: 04/27/10	Analyzed	: 04/29/10			
Diesel Range Organics	77.5	8.9	mg/kg dry	102	BRL	76	50-117	9	24	
Surrogate: o-Terphenyl	2.61		mg/kg dry	2.04		128	49-124			Ac
Batch P0D0385 - 3545A										
Blank (P0D0385-BLK1)				Prepared	: 04/28/10	Analyzed	: 04/30/10			
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.75		mg/kg wet	1.60		109	49-124			
LCS (P0D0385-BS1)				Prepared	: 04/28/10	Analyzed	: 04/30/10			
Diesel Range Organics	70.9	7.0	mg/kg wet	80.0		89	55-109			
Surrogate: o-Terphenyl	1.82		mg/kg wet	1.60		114	49-124			
Matrix Spike (P0D0385-MS1)	Sour	e: 004034	5-01	Prepared	: 04/28/10	Analyzed	: 04/30/10			
Diesel Range Organics	155	8.6	mg/kg dry	98.4	107	49	50-117			MI
Surrogate: o-Terphenyl	1.80		mg/kg dry	1.97		91	49-124			

Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis	Project: NCDOT Greensboro	Pris Tim
c/o MACTEC Eng. & Consulting, Inc, 3301 Raleigh, NC 27604	Project No: WBS 34802.1.1	

5/5/10

Prism Work Order: 0040318 Time Submitted: 04/22/10 1:50:00PM

Extractable Petroleum Hydrocarbons by GC/FID - Quality Control

Full-Service Analytical & Environmental Solutions

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Analyte	T Court	Limit	01113			701720	Linito		Linac	Notes
Batch P0D0385 - 3545A										
Matrix Spike Dup (P0D0385-MSD1)	Sou	rce: 004034	5-01	Prepared	: 04/28/10	Analyzed	l: 04/30/10			
Diesel Range Organics	307	8.6	mg/kg dry	98.5	107	203	50-117	66	24	D, MI
Surrogate: o-Terphenyl	4.49		mg/kg dry	1.97		228	49-124			Ae
Batch P0D0414 - 3545A										
Blank (P0D0414-BLK1)				Prepared	: 04/29/10	Analyzec	1: 04/30/10			
Diesel Range Organics	BRL	7.0	• mg/kg wet							
Surrogate: o-Terphenyl	1.59		mg/kg wet	1.60		99	49-124			
LCS (P0D0414-BS1)				Prepared	: 04/29/10	Analyzed	I: 04/30/10			
Diesel Range Organics	63.5	7.0	mg/kg wet	80,0		79	55-109			
Surrogate: o-Terphenyl	2.11		mg/kg wet	1.60		132	49-124			Ad
Matrix Spike (P0D0414-MS1)	Sou	rce: 004031	8-20	Prepared	: 04/29/10	Analyzed	: 04/30/10			
Diesel Range Organics	97.5	10	mg/kg dry	115	BRL	85	50-117			
Surrogate: o-Terphenyl	3.16		mg/kg dry	2.29		138	49-124			Af
Matrix Spike Dup (P0D0414-MSD1)	Sou	rce: 004031	8-20	Prepared	: 04/29/10	Analyzec	i: 04/30/10			
Diesel Range Organics	83.8	10	mg/kg dry	115	BRL	73	50-117	15	24	
Surrogate: o-Terphenyl	2.67		mg/kg`dry	2.29		116	49-124			

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PRISM Full-Service Analytical & Environmental Solutions			5/5/10
Mactec - Raleigh (NCDOT Project) Attn: Matt Gillis	Project: NCDOT Greensboro	Prism Work Order: 0040318 Time Submitted: 04/22/10 1:50:00PM	
c/o MACTEC Eng. & Consulting, Inc, 3301 Raleigh, NC 27604	Project No: WBS 34802.1.1		
General Chemistry Parameters - Quality Contro	, .		

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P0D0254 - NO PREP										
						·····				

Duplicate (P0D0254-DUP2)	Sour	ce: 0040318-16	Prepared & Analyzed: 04/26/10			
% Solids	66.0	0.100 % by V	Veight 65.7	0.5	20	

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Level II QC Report

Sample Extraction Data

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Prep Method: 3545A

Lab Number	Batch	Initial	Final	Date	
0040318-01	P0D0313	25.02 g	1 mL	04/27/10	
0040318-02	P0D0313	25.07 g	1 mL	04/27/10	
0040318-03	P0D0313	25.04 g	1 mL	04/27/10	
0040318-04	P0D0313	25.06 g	1 mL	04/27/10	
0040318-05	P0D0313	25.02 g	1 mL	04/27/10	
0040318-06	P0D0313	25 g	1 mL	04/27/10	
0040318-07	P0D0313	25.02 g	1 mL	04/27/10	
0040318-08	P0D0313	25.1 g	1 mL	04/27/10	
0040318-09	P0D0313	25.06 g	1 mL	04/27/10	
0040318-10	P0D0313	25.1 g	1 mL	04/27/10	
0040318-11	P0D0385	25.07 g	1 mL	04/28/10	
0040318-12	P0D0385	25.09 g	1 mL	04/28/10	
0040318-13	P0D0385	25 g	1 mL	04/28/10	
0040318-14	P0D0385	25.03 g	1 mL	04/28/10	
0040318-15	P0D0385	25.06 g	1 mL	04/28/10	
0040318-16	P0D0385	25.01 g	1 mL	04/28/10	
0040318-17	P0D0385	- 25.05 g	1 mL	04/28/10	
0040318-18	P0D0385	25.05 g	1 mL	04/28/10	
0040318-19	P0D0385	25.05 g	1 mL	04/28/10	
0040318-20	P0D0414	25.18 g	1 mL	04/29/10	
0040318-21	P0D0414	25.09 g	1 mL	04/29/10	
0040318-22	P0D0414	25 g	1 mL	04/29/10	
0040318-23	P0D0414	25.07 g	1 mL	04/29/10	
0040318-24	P0D0414	25 g	1 mL	04/29/10	

NO PREP

Lab Number	Batch	Initial	Final	Date	
0040318-01	P0D0254	30 g	30 mL	04/26/10	
0040318-02	P0D0254	30 g	30 mL	04/26/10	
0040318-03	P0D0254	30 g	30 mL	04/26/10	
0040318-04	P0D0254	30 g	30 mL	04/26/10	
0040318-05	P0D0254	30 g	30 mL	04/26/10	
0040318-06	P0D0254	30 g .	30 mL	04/26/10	
0040318-07	P0D0254	30 g	30 mL	04/26/10	
0040318-08	P0D0254	30 g	30 mL	04/26/10	
0040318-09	P0D0254	30 g	30 mL	04/26/10	
0040318-10	P0D0254	30 g	30 mL	04/26/10	
0040318-11	P0D0254	30 g	30 mL	04/26/10	
0040318-12	P0D0254	30 g	30 mL	04/26/10	
0040318-13	P0D0254	30 g	30 mL	04/26/10	
0040318-14	P0D0254	30 g	30 mL	04/26/10	
0040318-15	P0D0254	30 g	30 mL	04/26/10	
0040318-16	P0D0254	30 g	30 mL	04/26/10	
0040318-17	P0D0254	30 g	30 mL	04/26/10	
0040318-18	P0D0254	30 g	30 mL	04/26/10	
0040318-19	P0D0254	30 g	30 mL	04/26/10	
0040318-20	P0D0254	30 g	30 mL	04/26/10	
0040318-21	P0D0254	30 g	30 mL	04/26/10	
0040318-22	P0D0254	30 g	.30 mL	04/26/10	
0040318-23	P0D0254	30 g	30 mL	04/26/10	•
0040318-24	P0D0254	30 g	30 mL	04/26/10	
Prep Method: 5035					
Lab Number	Batch	Initial	Final	Date	
0040318-01	P0D0352	10.55 g	5 mL	04/28/10	

Sample Extraction Data

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date
0040318-02	P0D0352	7.68 g	5 mL	04/28/10
0040318-03	P0D0352	10.61 g	5 mL	04/28/10
0040318-04	P0D0352	9.12 g	5 mL	04/28/10
0040318-05	P0D0352	9.27 g	5 mL	04/28/10
0040318-06	P0D0352	10.87 g	5 mL	04/28/10
0040318-07	P0D0352	9.74 g	5 mL	04/28/10
0040318-08	P0D0421	9.54 g	5 mL	04/30/10
0040318-09	P0D0421	8.23 g	5 mL	04/30/10
0040318-10	P0D0421	8.97 g	5 mL	04/30/10
0040318-11	P0D0421	7.8 g	5 mL	04/30/10
0040318-12	P0D0421	7.64 g	5 mL	04/30/10
0040318-13	P0D0421	9.83 g	5 mL	04/30/10
0040318-14	P0D0421	7.18 g	5 mL	04/30/10
0040318-15	P0D0421	8.05 g	5 mL	04/30/10
0040318-16	P0E0019	10.62 g	5 mL	05/03/10
0040318-17	P0E0019	9.39 g	5 mL	05/03/10
0040318-18	P0E0019	_ 11.65 g	5 mL	05/03/10
0040318-19	P0E0019	5.81 g	5 mL	05/03/10
0040318-20	P0E0019	8.85 g	5 mL	05/03/10
0040318-21	P0E0019	8.75 g	5 mL	05/03/10
0040318-22	P0E0019	8.17 g	5 mL	05/03/10
0040318-23	P0E0019	7.98 g	5 mL	05/03/10
0040318-24	P0E0019	7.98 g	5 mL	05/03/10

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449 Springbrook Road • Phone: 704/529-6364 • F Client Company Name Report To/Contact Na Reporting Address:	: <u>N</u>	14C12 Nott 6				provis	ions ar e To: _	nd/oi	r QC i	Requi	s) No iremer) eific re nts	కాంగానె UST P eporting ((Project: QC LEV		(No) I IV)		opersie overdo stojov	HESERI AMHING SEALSH	A TOVE STAR DEDINCTON NTACT (CLUT HEAD TOTOLOGIA	leni i 2 decem		
Phone: <u>919-991-805</u> Email (199) (No) Email EDD Type: PDF <u>X</u> Ex Site Location Name: Site Location Physical	Addr cel NCD	ess_my Other	nsbores site	<u> </u>	<u></u>	Reques "Worki Sample Turnare	sted Due ng Days es receive ound time SEE REVE	Date " ed aff e is b RSE I	e [] 1 [] 6- ter 15: ased c FOR TE	Day (9 Days 00 will on busi RMS &	⊇ 2 Day s) Sta be proc ness da condi	ndard essed ays, ex TIONS	<u>نک 8 دی 3</u> Days 4 10 days 1 next busine cluding wee REGARDING TO CLIENT	Days Rush Wo Pre-Appr ess day. kends an services	5 Days rk Must I oved d holiday	Be /s.	Certific Water	ation: Chlorin	NEL/ SC_ nated:	ACU OTHI YES I	JSACE ER NO	PLING PEF FL N/A NO	NC
CLIENT SAMPLE DESCRIPTION		DATE LECTED	TIME COLLECTED MILITARY HOURS	(S WAT	TRIX OIL, ER OR JDGE)		SAMP YPE BELOW			INER	ZE	PR	ESERVA- TIVES	at .	D'A	ANALY	(SES REC	QUESTE	D		REMA	RS	PRISM LAB ID NO.
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	CHAIN OF CUSTODY RECORD												LAB USE ONLY									
	PAGE OF QUOTE # TO ENSURE PROPER BILLING:											50	Tiplestin	PACTUR	anzahitiyan	1.515		NO NA				
449 Springbrook Road • I Phone: 704/529-6364 • F Client Company Name Report To/Contact Name Reporting Address:	Project Name: VC.DoT Greenbook Project: (No) Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No) *Please ATTACH any project specific reporting (QC LEVEL I II III IV) Provisions and/or QC Requirements Project No. Project: Project:													aeseelv minikuuu sevuisili	anver andres Macin	ulentado (neses)						
Phone: <u>719-891-805</u> Email (Yes) (No) Email EDD Type: PDF <u>X</u> Ex Site Location Name: Site Location Physical	Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days "Working Days" 6-9 Days 3 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.										TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL Certification: NELACUSACEFLNC SCOTHERN/A Water Chlorinated: YESNO Sample Iced Upon Collection: YESNO											
	DATE COLLECTED		TIME	MATRIX	SAMPLE CO			ONTAINER			PPEOFPWA			<u> </u>	ANAL	LYSES REQUESTED			/			PRISM
CLIENT SAMPLE DESCRIPTION			COLLECTED MILITARY HOURS	(SOIL, WATER OR SLUDGE)		*TYPE SEE BELOW			SIZE		PRESERVA- TIVES		A.		S S				REMA		RKS	LAB ID NO.
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SB 1-6			1235										V	V								06
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SB 2-2			1450										V	~								08
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Sampler's Signature	Sampler's Signature <u>Justen y</u> Sampled By (Print Name) <u>Keisten Ubja</u> Affiliation Jpon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be														ust be			4		DDIO		
submitted in writing to	the Pi	rism Proje	ct Manager. Th	IELE MILLDE	charge.	5 101 an	<i>y</i> on any				es hav	/e been in	itialized	Date		Military/	Hours	Additio	nal Com	ments:	STANSAL STAND	USE ONLY
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