Preliminary Site Assessment

420 Line Avenue

Parcel #17 Station, William Ernest
Parcel #18 Cox, Philip Ray
Parcel #19 Cox, Liam

Hardee & Cox Welding, Inc.

Greenville, Pitt County, North Carolina

State Project No. U-3315

WBS Element: 35781.1.2

February 22, 2013

Terracon Project No. 70127335

Prepared for:

North Carolina Department of Transportation (NCDOT)

Geotechnical Engineering Unit

Prepared by:

Terracon Consultants, Inc.

Raleigh, North Carolina

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February 22, 2013

North Carolina Department of Transportation
Attention: Mr. Gordon Box, LG
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, NC 27699

Re: Preliminary Site Assessment (PSA)
Parcel 17, Station, William Ernest
Parcel 18, Cox, Philip Ray
Parcel 19, Cox, Liam
Hardee & Cox Welding, Inc.
420 Line Avenue
Greenville, Pitt County, North Carolina
Terracon Project No. 70127335
WBS Element: 35781.1.2

Dear Mr. Box:

Terracon Consultants, Inc. (Terracon) is pleased to submit a Preliminary Site Assessment (PSA) report for the above referenced site. This assessment was performed in accordance with our Proposal for Preliminary Site Assessment (Terracon Proposal No. P70127314) dated August 7, 2012. This report includes the findings of the investigation, and provides our conclusions and recommendations.

Terracon appreciates the opportunity to provide these services to the NCDOT. If you have any questions concerning this report or need additional information, please contact us at 919-873-2211.

Sincerely,
Terracon Consultants, Inc.

Prepared by:

for: Thomas A. Perdue, EI
Environmental Scientist

Reviewed by:

for Christopher L. Corbitt, PG
Authorized Project Reviewer

Lori Hoffman, PE
Environmental Department Manager

PRELIMINARY SITE ASSESSMENT
PARCEL 17, STATION, WILLIAM ERNEST
PARCEL 18, COX, PHILIP RAY
PARCEL 19, COX, LIAM
HARDEE & COX WELDING, INC.
420 LINE AVENUE
GREENVILLE, PITT COUNTY, NORTH CAROLINA

1.0 INTRODUCTION

1.1 Site Description

Site Name	Parcel 17, Station, William Ernest Parcel 18, Cox, Philip Ray Parcel 19, Cox, Liam
Site Location/Address	420 Line Avenue, Greenville, North Carolina
General Site Description	Parcels #17, #18, and #19 are occupied by Hardee & Cox Welding, Inc. in the eastern portion of the site. On-site structures include a commercial building with offices and a welding workshop, and two metal storage structures.

1.2 Site History

According to information provided by the NCDOT and collected by Terracon, there are no known release (LUST) incidents associated with the three parcels.

Parcel 19 reportedly operated three underground storage tanks (USTs) in the northeast corner of the parcel. According to Ms. Janette Cox, site owner, the USTs were removed during the widening of Farmville Boulevard in 1988 and no LUST incidents have been reported. Ms. Cox indicated that the only current operations at the facility consist of welding, and that additional aboveground storage tanks (ASTs) or USTs are not known at the site.

Parcels 17 and 18 are currently vacant parcels maintained as cleared land inside a fenced compound associated with the Hardee & Cox Welding shop located on Parcel 19.

1.3 Scope of Work

Terracon has prepared the following Preliminary Site Assessment (PSA) scope of work in accordance with the NCDOT's Request for Technical and Cost Proposal dated June 19, 2012 and Terracon's Proposal for Preliminary Site Assessment (Proposal No. P70127314) dated August 7, 2012. The scope of work included a geophysical investigation for each parcel, the collection of 18 soil samples, and three groundwater samples for laboratory analysis and preparation of a report documenting our environmental investigation activities.

1.4 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either expressed or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These PSA services were performed in accordance with the scope of work authorized by you and were not conducted in accordance with ASTM E1903-97.

1.5 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, undetectable or not present during these services; thus, we cannot represent that the site is free of hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this PSA. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.6 Reliance

This report has been prepared for the exclusive use of North Carolina Department of Transportation (NCDOT). Authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the expressed written authorization of the client and Terracon.

2.0 FIELD ACTIVITIES

The following PSA activities are presented in the order that they were conducted in the field on November 19, 20, 28, and 29, 2012. Exhibit 1 presents the general boundaries and topography of the site on portions of the USGS topographic quadrangle map of Greenville SW, North Carolina dated 1998. Exhibits 1, 2, and 3 are site layout plans that depict the approximate locations of the site features and soil boring locations.

2.1 Geophysical Survey

On November 19 and 20, Schnabel Engineering conducted a geophysical investigation at the site in an effort to determine if unknown, metallic underground storage tanks (USTs) were present beneath the proposed right-of-way (ROW) area. The geophysical investigation included an electromagnetic (EM) induction survey using a Geonics EM-61 MK2 metal detection instrument and a ground penetrating radar (GPR) survey using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

The geophysical investigation identified a possible metallic UST under the concrete on the western edge of the on-site structure of Parcel 19 within the proposed Right-of-Way; however, the information was not provided to Terracon prior to Terracon's on-site investigations. Two borings were installed within approximately 40 feet of the possible metallic UST. A copy of the geophysical reports is included in Appendix B.

2.2 Soil Sampling

Based on the findings of the geophysical investigation, Terracon provided oversight of the advancement of one soil boring (S-7) in the central portion of Parcel 17, one soil boring (S-8) in the central portion of Parcel 18, and 16 soil borings throughout Parcel 19. Three borings on Parcel 19 (S-12, S-15, and S-18) were advanced in the northeast portion of the parcel near the reported location of the reported previous USTs, one boring (S-9) was advanced at the doors of the two metal storage containers in the western portion of the parcel, one boring (S-6) was advanced in the vicinity of the proposed catch basin, and 11 borings (S-1 through S-5, S-10, S-11, S-13, S-14, S-16, and S-17) were advanced around the perimeter of the on-site structure. The borings were completed by Bridger Drilling Enterprises, Inc., a North Carolina licensed driller using a Geoprobe® rig.

Soil samples were collected in 5-foot, disposable, acetate sleeves to document soil lithology, color, moisture content, and sensory evidence of impairment. The soil samples were placed in resealable plastic bags for a sufficient amount of time to allow volatilization of organic compounds from the soils. The soil samples were then screened using a field-portable photo-ionization detector (PID) and flame ionization detector (FID) by inserting the probe tip into the headspace of each bag. The PID/FID readings and soil sample depths for the borings on Parcels 17, 18, and 19 are included on Table 1. PID/FID readings and soil sample depths for Parcels 17, 18, and 19 are also included on individual boring logs in Appendix A.

Soil borings on all three parcels were advanced to depths ranging from approximately 10 to 15 feet below ground surface (bgs). Soils obtained from the acetate sleeves were separated into two and half foot intervals.

The soil samples were collected and placed in laboratory prepared glassware and packed in ice within a cooler. The sample cooler and completed chain-of-custody forms were relinquished to SGS North American Inc. in Wilmington, North Carolina.

2.3 Groundwater Sampling

Following soil sampling activities, soil boring S-7 on Parcel 17 was advanced to approximately 15 feet bgs and converted to a temporary groundwater sampling well (GW-1). Boring S-7 was located in the apparent down-gradient portion of Parcels 17, 18, and 19. Soil boring S-13 on Parcel 19 was advanced to approximately 15 feet bgs and converted to a temporary groundwater sampling well (GW-2). Boring S-13 was located in the apparent down-gradient position of the former automotive repair facility on the eastern adjacent property. Soil boring S-16 was advanced to approximately 15 feet bgs and converted to a temporary groundwater sampling well (GW-3). Boring S-16 was located in the vicinity of the reported location of the reported historical USTs in the northeast portion of Parcel 19. The temporary well locations are depicted on Exhibit 2.

The temporary monitoring wells were constructed using the following materials:

- 1-inch diameter, 0.010-inch machine slotted PVC well screen with a threaded bottom cap; and,
- 1-inch diameter, threaded, flush-joint PVC riser pipe to surface.

The depth to groundwater was measured in the temporary wells at approximately 8.4 feet bgs (Parcel 17) and 8 feet and 13.8 feet bgs (Parcel 19). Prior to sampling, the monitoring wells were purged with a peristaltic pump until turbidity decreased. A water sample was collected from each temporary well and placed into laboratory supplied, pre-preserved sample containers. The ice-packed sample container and chain of custody documentation were picked up by a courier for delivery to the laboratory.

2.4 Subsurface Conditions

The soil samples from ground surface to a depth of approximately 15 feet included clay and sandy clay. Petroleum odors and elevated PID readings were noted in the samples collected from soil borings S-15 and S-18 on Parcel 19. Soil samples from the interval exhibiting the highest PID readings or most obvious evidence of contamination in each boring were submitted for laboratory analysis.

3.0 LABORATORY ANALYSES

Soil samples were submitted for laboratory analysis of Total Petroleum Hydrocarbons (TPH) Diesel Range Organics (DRO) by EPA Method 3546 and TPH Gasoline Range Organics (GRO) by EPA Method 5035. Soil samples were also collected for analysis of North Carolina Department of Environment and Natural Resources (NCDENR) risk-based parameters including volatile organic compounds (VOCs) by EPA Method 8260 and semi-volatile organic compounds (SVOCs) by EPA Method 8270, MADEP VPH, and MADEP EPH pending analytical results of the DRO/GRO samples. The groundwater samples were submitted for laboratory analysis of VOCs by EPA Method 8260 and SVOCs by EPA Method 8270 in GW-1 and GW-2 and due to slow flow rate, only VOCs in GW-3. Samples were submitted to SGS North American Inc. in Wilmington, North Carolina for analysis. Please refer to Appendix C for the laboratory analytical reports.

4.0 DATA EVALUATION

4.1 Soil Sample Analytical Results and Interpretation

Gasoline Range Organics (GRO) were detected above the laboratory method detection limits but below the NCDENR UST Action Level (10 mg/kg) in sample S-15 at a concentration of 8.47 milligrams per kilogram (mg/kg).

Diesel Range Organics (DRO) were also detected in sample S-7 (8.25 mg/kg), sample S-8 (6.98 mg/kg), and sample S-12 (7.5 mg/kg) at concentrations below the NCDENR UST Action Level (10 mg/kg). DRO was detected in sample S-9 (20.6 mg/kg), S-15 (83.3 mg/kg), and sample S-18 (26.5 mg/kg) at concentrations above the NCDENR UST Action Level (10 mg/kg).

Based on the DRO/GRO analytical results, soil samples S-9, S-15, and S-16 were submitted for analysis of the NCDENR risk-based parameters.

Risk-based analyses for sample S-9 did not report SVOC or VOC concentrations above their respective NCDENR Soil-to-Groundwater MSCCs.

Risk-based analyses for sample S-15 reported 1,2,4-trimethylbenzene (0.0518 mg/kg), 1,3,5-trimethylbenzene (0.0246 mg/kg), naphthalene (0.0098 mg/kg), total xylenes (0.0174 mg/kg), n-propylbenzene (0.00729 mg/kg), o-xylenes (0.00129 mg/kg), and 2-methylnapthalene (1.04 mg/kg) above their respective laboratory method reporting limits, but below their respective NCDENR Soil-to-Groundwater MSCCs.

Risk-based analyses for sample S-16 reported 1,2,4-trimethylbenzene (0.0248 mg/kg), 1,3,5-trimethylbenzene (0.294 mg/kg), 4-isopropyltoluene (0.00933 mg/kg), naphthalene (0.00736 mg/kg), total xylenes (0.0681 mg/kg), and o-xylenes (0.0681 mg/kg) above their respective laboratory method reporting limits, but below their respective NCDENR Soil-to-Groundwater MSCCs.

Laboratory analytical results did not report C5-C8 Aliphatics, C9-C-18 Aliphatics, C19-C36 Aliphatics, and C9-C22 Aromatics in S-9, S-15, or S-16 above their respective NCDENR Soil-to-Groundwater MSCCs.

A summary of the soil sampling analytical results are included in Tables 1, 2, 3, and 4 as an attachment to this report.

4.2 Groundwater Analytical Results and Interpretation

Laboratory analytical results for groundwater sample GW-1 from the northwest corner of Parcel #19 (soil boring S-15) reported n-butylbenzene at 11.9 micrograms per liter (ug/L), ethylbenzene at 146 ug/L, isopropylbenzene at 24.6 ug/L, naphthalene at 199 ug/L, and n-propylbenzene at 76.6 ug/L. Naphthalene and n-propylbenzene were reported at concentrations that exceed their respective NCAC 2L Groundwater Quality Standards of 6 ug/L and 70 ug/L.

Laboratory analytical results for groundwater sample GW-2 from the down-gradient position of Parcel #17, #18, and #19 (soil boring S-7) reported methyl tert-butyl ether (MTBE) at 2.89 ug/L, and naphthalene at 1.77 ug/L. Constituents detected in GW-2 were not detected above their respective NCAC 2L Groundwater Quality Standards.

Laboratory analytical results for groundwater sample GW-3 from the down-gradient position of the former eastern adjacent automotive repair facility (soil boring S-13) reported toluene at 5.74 ug/L, below its NCAC 2L Groundwater Quality Standard. Due to well recharge rate, SVOCs were not submitted for GW-3.

A summary table of the groundwater sampling analytical results is included as an attachment to this report.

5.0 CONCLUSIONS

The findings of this investigation are discussed below.

- The geophysical investigation identified a possible metallic UST under the concrete on the western edge of the on-site structure of Parcel 19 within the proposed Right-of-Way; however, the information was not provided to Terracon prior to Terracon's on-site investigations. Two borings were installed within approximately 40 feet of the possible metallic UST (S-3 and S-5). TPH-GRO and TPH-DRO were not detected in either sample.

- Eighteen soil borings were advanced to depths ranging from approximately 5 to 15 feet bgs.

- Diesel Range Organics were also detected in sample S-9 (20.6 mg/kg), S-15 (83.3 mg/kg), and S-16 (26.5 mg/kg) at concentrations above the NCDENR UST Action Level (10 mg/kg) and the samples were submitted for NCDENR Risk-based analyses.

- NCDENR Risk-based analyses did not report soil contaminant concentrations above their respective NCDENR Soil-to-Groundwater MSCCs.

- Three groundwater samples were collected at the site and submitted for laboratory analysis. GW-1 was submitted for analysis of VOCs and SVOCs from soil boring S-15. Naphthalene (199 ug/L) and n-propylbenzene (76.6 ug/L) were reported in GW-1 above their respective NCAC 2L Groundwater Quality Standard of 6 ug/L and 70 ug/L. GW-2 was submitted for analysis of VOCs and SVOCs from soil boring S-7 with no reported constituents above NCAC 2L standards. GW-3 was submitted for analysis of VOCs from soil boring S-13 with no reported constituents above NCAC 2L standards.

- Groundwater was reported between 8.4 feet and 13.8 feet at the site.

- The extent of soil contamination appears to be localized at Parcel #19. The actual amount of impacted soil can only be determined after excavation or by advancing additional borings at the site to further delineate the extent of contamination.

- Based on information provided by NCDOT, Terracon estimates a total of 40 yd^3 of contaminated soil be used for estimating quantities to be removed from Parcel 19 during construction. This is based on the following assumptions:

  <u>Roadway Excavation</u>
  - Area near Samples S-15 and S-18: From Sta. 31+97 to 32+39 cross-section area of

11.2 ft^2

11.2 ft^2 x 42 ft = 470.4 ft^3 or 17.5 yd^3

- Area near Sample S-19: From Sta. 29+28 to 28+73 cross-section area of 10.5 ft^2

  10.5 ft^2 x 45 ft = 473 ft^3 or 18 yd^3

Utility and Drainage Excavation

- Not anticipated for Parcels 17, 18, and 19.

TABLES

Table 1 – Soil Sampling Analytical Results Summary (DRO/GRO)
Table 2 – Soil Sampling Analytical Results Summary (VOCs/SVOCs)
Table 3 – Soil Sampling Analytical Results Summary (EPH/VPH)
Table 4 – Groundwater Sampling Analytical Results Summary

Table 1
Soil Sampling Analytical Results Summary (GRO/DRO)
Parcel #17, #18, and #19
Greenville, Pitt County, North Carolina

			Sample ID	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9
			Depth	7.5-10.0 FT	7.5-10.0 FT	2.5-5.0 FT	2.5-5.0 FT	2.5-5.0 FT	0-2.5 FT	0-2.5 FT	0-2.5 FT	5.0-7.5 FT
Method	Parameter	Units	NCDENR Action Level	Value	Value	Value	Value	Value	Value	Value	Value	Value
SW-846 8015C	TPH-GRO	mg/kg	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
SW-846 8015C	TPH-DRO	mg/kg	10	ND	ND	ND	ND	ND	ND	8.25	6.98	20.6

			Sample ID	S-10	S-11	S-12	S-13	S-14	S-15	S-16	S-17	S-18
			Depth	5.0-7.5 FT	0-2.5 FT	5.0-7.5 FT	2.5-5.0 FT	2.5-5.0 FT	5.0-7.5 FT	2.5-5.0 FT	0-2.5 FT	5.0-7.5 FT
Method	Parameter	Units	NCDENR Action Level	Value	Value	Value	Value	Value	Value	Value	Value	Value
SW-846 8015C	TPH-GRO	mg/kg	10	ND	ND	ND	ND	ND	8.47	ND	Not	ND
SW-846 8015C	TPH-DRO	mg/kg	10	ND	ND	7.5	ND	ND	83.3	ND	submitted	26.5

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics
TPH-DRO = Total petroleum hydrocarbons - diesel range organics
mg/kg = Milligrams per kilograms
ND = Non-detect

Table 2
Soil Sampling Analytical Results Summary (VOCs/SVOCs)
Parcel #17, #18, and #19
Greenville, Pitt County, North Carolina

				Sample ID	S-9		S-15		S-16	
				Depth	5.0-7.5 FT		5.0-7.5 FT		5.0-7.5 FT	
Method	Parameter	Units	Industrial/Commercial Soil Cleanup Levels	MSCCs Soil-to-Water Maximum Contaminant Concentration	Value	Qual	Value	Qual	Value	Qual
8260B	1,2,4-Trimethylbenzene	ug/kg	20,440,000	8,500	ND		51.8		24.8	
	1,3,5-Trimethylbenzene	ug/kg	20,440,000	8,500	ND		24.6		294	E
	4-Isopropyltoluene	ug/kg	4,000,000	120	ND		ND		9.33	
	Naphthalene	ug/kg	8,176,000	160	ND		9.8		7.36	
	Xylenes (total)	ug/kg	81,760,000	4,600	ND		17.4		68.1	
	n-Propylbenzene	ug/kg	16,350,000	1,700	ND		7.29		ND	
	o-Xylenes	ug/kg	81,760,000	4,600	ND		12.9		68.1	
8270	2-Methylnaphthalene	ug/kg	1,635,000	3,600	ND		1,040		ND	

ug/kg = Micrograms per kilograms
ND = Non-detect
MSCCs = Maximum Soil Contaminant Concentrations
E = Amount detected is greater than the upper calibration limits

Table 3
Soil Sampling Analytical Results Summary (VPH/EPH)
Parcel #17, #18, and #19
Greenville, Pitt County, North Carolina

Sample Designation / Sample Location Depth Date Sampled						S-9 5.0-7.5 FT 11/28/2012		S-15 5.0-7.5 FT 11/29/2012		S-16 5.0-7.5 FT 11/29/2012	
Hydrocarbon Fraction Ranges	**Analytical Hydrocarbon Fractions**		**Residential MSCC (mg/kg)**	**Industrial / Commercial MSCC (mg/kg)**	**Soil to Groundwater MSCC (mg/kg)**	**Lab Results Conc.**	**Final VPH and/or EPH Conc.**	**Lab Results Conc.**	**Final VPH and/or EPH Conc.**	**Lab Results Conc.**	**Final VPH and/or EPH Conc.**
C5-C8 Aliphatics	C5-C8 Aliphatics	VPH	939	24528	68	< 4.63	<4.63	< 3.99	<3.99	< 4.27	<4.27
C9-C18 Aliphatics	C9-C12 Aliphatics	VPH	1500	40000	540	< 4.63	<18.83	16.8	64.9	4.66	29.56
	C9-C18 Aliphatics	EPH				14.2		48.1		24.9	
C19-C36 Aliphatics	C19-C36 Aliphatics	EPH	31000	810000	Considered Immobile	< 8.06	<8.06	< 7.33	<7.33	< 8.35	<8.35
C9-C22 Aromatics	C9-C10 Aromatics	VPH	469	12264	31	< 4.63	<20.23	9.2	29.2	< 4.27	<20.47
	C11-C22 Aromatics	EPH				< 15.6		20		< 16.2	

Notes:
ft = feet
ug/L = micrograms per liter
Where no detectable concentration was measured, the method detection limit was used for the final calculation
EPH = Extractable Petroleum Hydrocarbons
VPH = Volatile Petroleum Hydrocarbons

Table 4
Groundwater Sampling Analytical Results Summary
Parcel #17, #18, and #19
Greenville, Pitt County, North Carolina

			Sample ID	GW-1	GW-2	GW-3
			Depth	8.4 FT	10.1 FT	13.8 FT
Method	Parameter	Units	NCAC 2L Groundwater Quality Standard	Value	Value	Value
8260B	n-Butylbenzene	ug/l	70	11.9	ND	ND
	Ethylbenzene	ug/l	600	146	ND	ND
	Isopropylbenzene	ug/l	70	24.6	ND	ND
	Methyl tert-butyl ether (MTBE)	ug/l	20	ND	2.89	ND
	Naphthalene	ug/l	6	199	1.77	ND
	n-Propylbenzene	ug/l	70	76.6	ND	ND
	Toluene	ug/l	600	ND	ND	5.74

Notes:
Sample GW collected on November 29, 2012
NE = Not established
units = ug/L - sample analyte compound concentrations measured in micrograms per liter
=Greater than or equal to the NCAC 2L Groundwater Quality Standard

FIGURES

Exhibit 1 – Site Vicinity Map (Topographic Map)
Exhibit 2 – Site Diagram with Soil Boring Locations and Analytical Data (Parcel 17, 18, and 19)

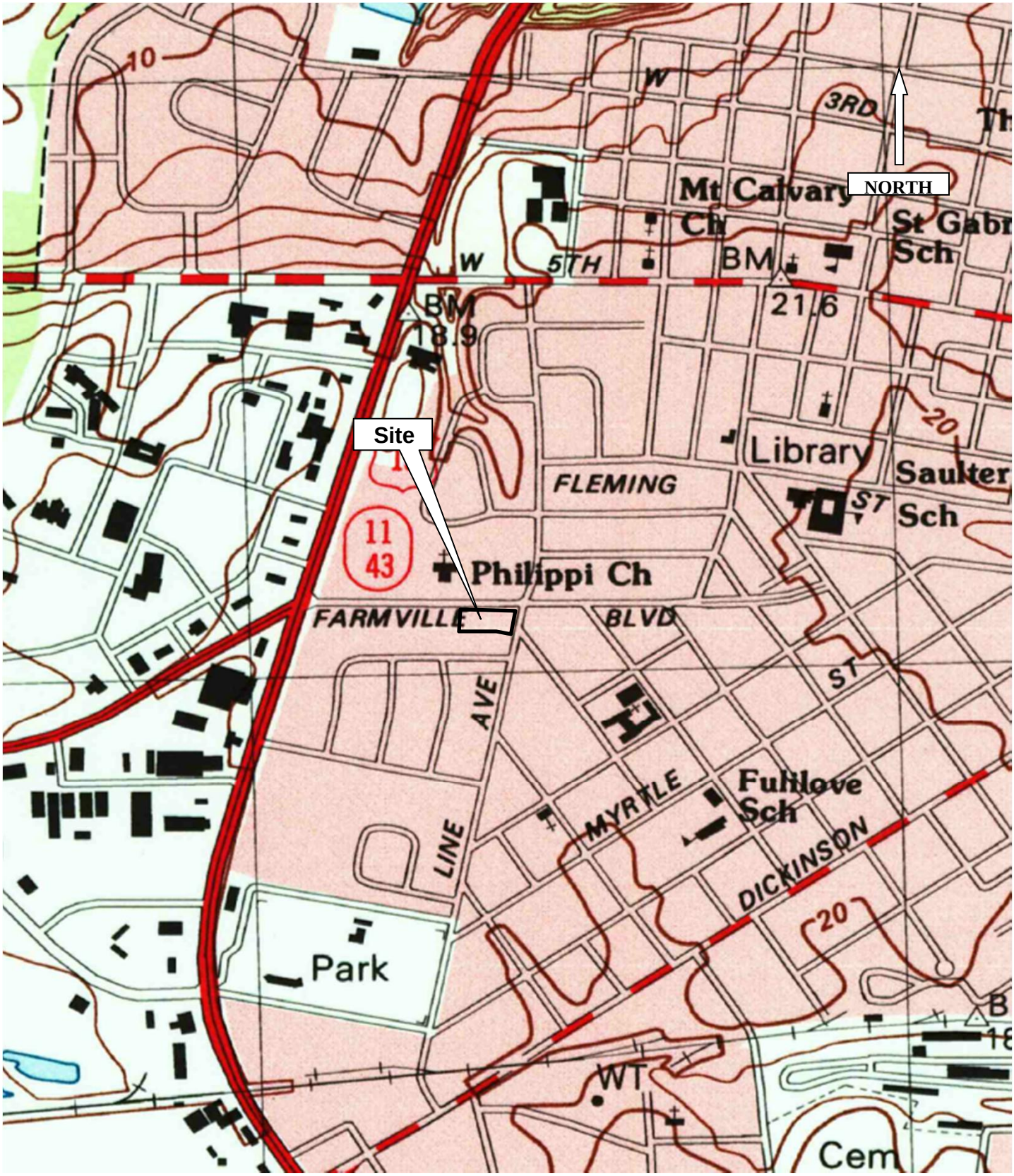


Diagram is for general location only

Site Vicinity Map
Parcel # 17, #18, and #19
420 Line Avenue
Greenville, Pitt County, North Carolina

Reference: Greenville SW, NC USGS Quadrangle

Dated Year: 1998

Terracon

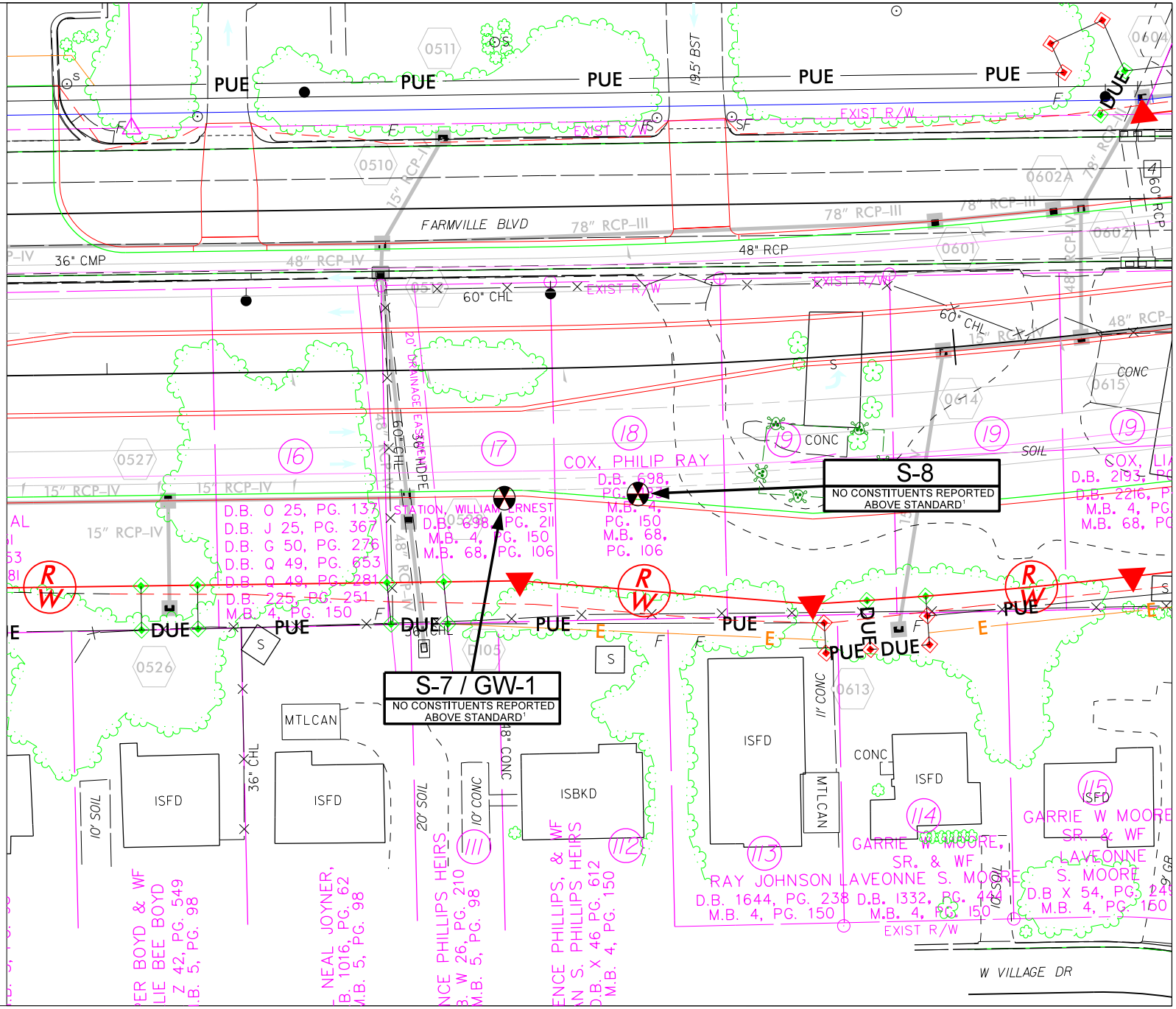
PROJECT NO.: 70127335	
DATE: 12/6/12	CONTOUR INT: 2 meters
DRAWN: TAP	CHECK: LCH
SCALE: NTS	

LEGEND

- PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE WITH IRON PIN AND CAP MARKER
- PROPOSED CONSTRUCTION EASEMENT
- PROPOSED EDGE OF TRAVEL
- PROPOSED CUT / FILL LINE
- PUE – PROPOSED PERMANENT UTILITY EASEMENT
- PROPOSED CATCH BASIN
- PROPOSED DRAINAGE PIPING
- ESTIMATED SOIL CONTAMINATION
- SOIL SAMPLE LOCATION

NOTES:

1. NCDENR UST SECTION ACTION LEVEL NCAC 2L GROUNDWATER QUALITY STANDARD

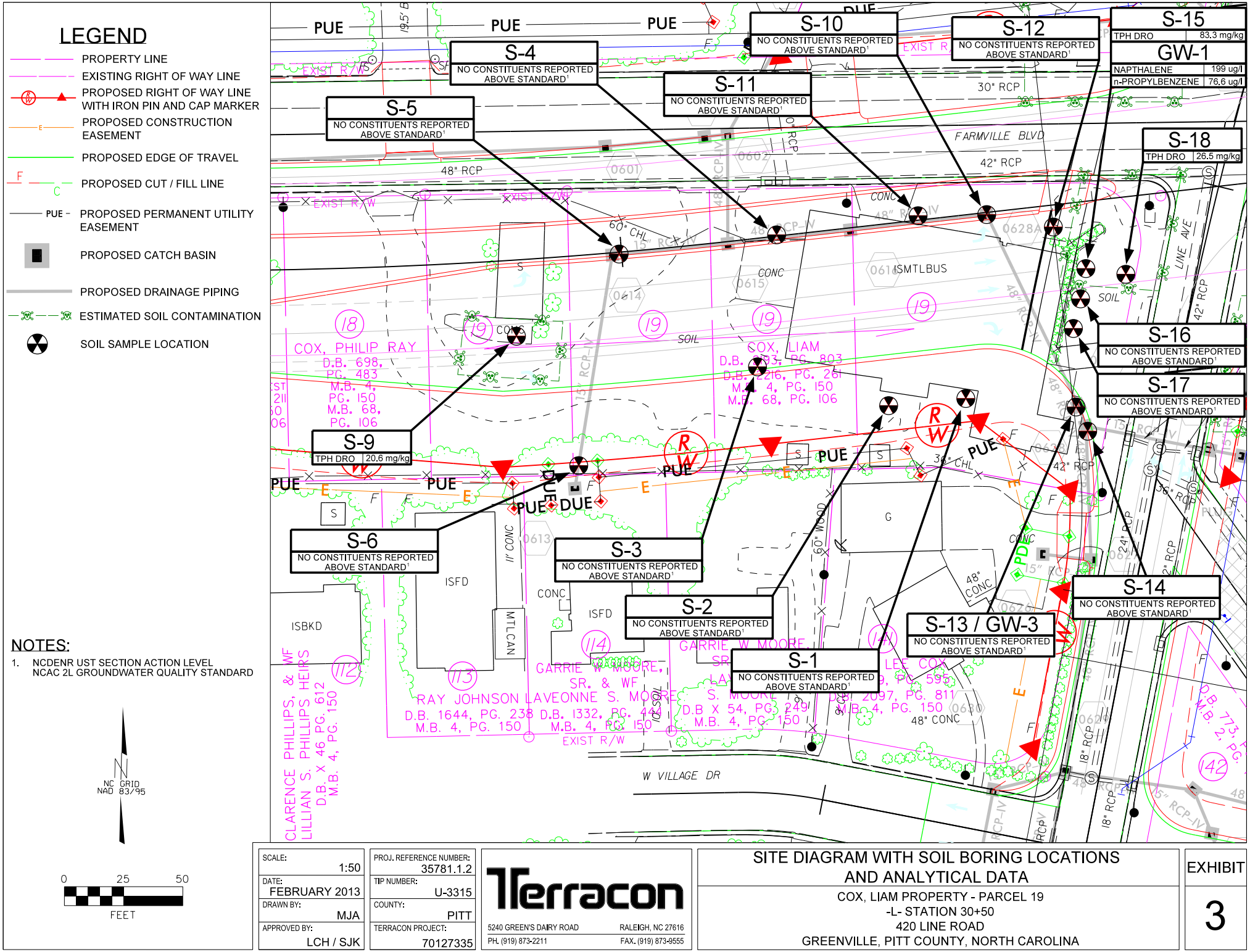


NC GRID NAD 83/95

0 25 50

FEET

SCALE: 1:50	PROJ. REFERENCE NUMBER: 35781.1.2	Terracon	SITE DIAGRAM WITH SOIL BORING LOCATIONS AND ANALYTICAL DATA
DATE: DECEMBER 2012	TIP NUMBER: U-3315	5240 GREEN'S DAIRY ROAD RALEIGH, NC 27616	STATION, WILLIAM ERNEST PROPERTY - PARCEL 17 1609 FARMVILLE BOULEVARD AND COX, PHILIP RAY PROPERTY - PARCEL 18 GREENVILLE, PITT COUNTY, NORTH CAROLINA
DRAWN BY: MJA	COUNTY: PITT	PH. (919) 873-2211 FAX. (919) 873-9555	EXHIBIT 2
APPROVED BY: LCH / SJK	TERRACON PROJECT: 70127335		



SCALE: 1:50	PROJ. REFERENCE NUMBER: 35781.1.2	Terracon	SITE DIAGRAM WITH SOIL BORING LOCATIONS AND ANALYTICAL DATA
DATE: FEBRUARY 2013	TIP NUMBER: U-3315	5240 GREEN'S DAIRY ROAD RALEIGH, NC 27616	COX, LIAM PROPERTY - PARCEL 19 -L- STATION 30+50 420 LINE ROAD GREENVILLE, PITT COUNTY, NORTH CAROLINA
DRAWN BY: MJA	COUNTY: PITT	PH. (919) 873-2211 FAX. (919) 873-9555	EXHIBIT 3
APPROVED BY: LCH / SJK	TERRACON PROJECT: 70127335		

APPENDIX A

Boring Logs

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-1
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.51/0.98		0.0	Organic sand to six inches, orange and brown clay from 6 inches to 5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.66/1.05		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	0.91/1.15		5.0	Gray and orange clay from 5 feet to 15 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	1.09/1.32		7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	0.71/1.20		10.0	
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15.0		NA	-		12.5	Wet
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15 feet

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-2
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.91/1.06		0.0	Organic sand to six inches, orange and brown clay from 6 inches to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.05/1.37		2.5	Gray and orange clay from 2.5 feet to 15 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	1.75/2.03		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	2.14/1.94		7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	1.76/2.04		10.0	
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15.0		NA	-		12.5	Wet
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15 feet

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-3
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.89/1.43		0.0	Gray and brown sandy clay to 5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	2.81/1.52		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	2.18/1.46		5.0	Gray and brown clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	2.19/1.14		7.5	
					8.0	Wet
					8.5	
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-4
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.42/1.39		0.0	Gray and orange sandy clay to 5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	4.16/1.37		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	-		5.0	Gray and orange clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	Wet
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-5
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.94/1.17		0.0	Gray and orange sandy clay to 5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	3.98/1.42		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	-		5.0	Gray and orange clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	Wet
					8.0	
					8.5	
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-6
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	3.08/1.71		0.0	Brown and gray sandy clay to 10 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	2.57/1.46		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	2.41/1.36		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	Wet
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-7
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	2.47/41.08		0.0	Dark brown sandy clay to 15 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	-		2.5	
					3.0	
					3.5	
					4.0	Wet
					4.5	
5.0 - 7.5		NA	-		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	-		10.0	
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15.0		NA	-		12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15 feet

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-8
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	3.43/52.91		0.0	Dark brown clay with organics to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	3.81/10.11		2.5	Dark brown clay from 2.5 feet to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	1.51/4.62		5.0	Dark brown with gray clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	Wet
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-9
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.84/1.51		0.0	Concrete to 6 inches
					0.5	Gray and orange clay from 6 inches to 2.5 feet
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.88/1.55		2.5	Brown clay from 2.5 feet to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	3.29/3.88		5.0	Brown with gray clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	
					9.0	Wet
					9.5	
					10.0	
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-10
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.91/1.12		0.0	Gray and brown sandy clay to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.01/0.95		2.5	Orange and gray sandy clay from 2.5 feet to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	1.48/1.30		5.0	Orange and gray clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	Wet
					8.0	
					8.5	
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-11
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.94/1.26		0.0	Gray and brown sandy clay to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.05/1.42		2.5	Orange and gray sandy clay from 2.5 feet to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	-		5.0	Orange and gray clay from 5 feet to 10 feet
					5.5	
					6.0	
					6.5	Wet
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-12
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.79/1.13		0.0	Gray and brown sandy clay to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.99/1.21		2.5	Orange and gray sandy clay from 2.5 feet to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	0.81/1.56		5.0	Orange and gray clay from 5 feet to 15 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	1.02/1.47		7.5	
					8.0	
					8.5	Wet
					9.0	
					9.5	
10.0 - 12.5		NA	-		10.0	
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15.0		NA	-		12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15 feet

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-13
PROJECT NO.: 70127335	DATE(S) DRILLED: November 28, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.44/1.09		0.0	Brown and orange sandy clay to 15 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.76/1.22		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	0.59/1.34		5.0	
					5.5	
					6.0	
					6.5	Wet
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	-		10.0	
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15.0		NA	-		12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15 feet

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-14
PROJECT NO.: 70127335	DATE(S) DRILLED: November 29, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.51/1.31		0.0	Gray and brown sandy clay to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.49/1.48		2.5	Gray and orange sandy clay from 2.5 to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	0.96/1.08		5.0	Brown, orange, and gray sandy clay from 5 feet to 7.5 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	0.62/1.28		7.5	Orange and gray clay from 7.5 feet to 10 feet
					8.0	
					8.5	
					9.0	Wet
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-15
PROJECT NO.: 70127335	DATE(S) DRILLED: November 29, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.48/1.06		0.0	Gray and brown sandy clay to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.77/1.59		2.5	Gray and orange sandy clay from 2.5 to 5 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	328.0/622.0	Petroleum odor	5.0	Brown, orange, and gray sandy clay from 5 feet to 7.5 feet
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-	Petroleum odor	7.5	Orange and gray clay from 7.5 feet to 10 feet
					8.0	
					8.5	Wet
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-16
PROJECT NO.: 70127335	DATE(S) DRILLED: November 29, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	0.69/1.24		0.0	Orange sand, fill to 15 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.24/1.37		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	0.98/1.29		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-	Petroleum odor	7.5	
					8.0	Wet
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	-	Petroleum odor	10.0	
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15.0		NA	-	Petroleum odor	12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15 feet

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-17
PROJECT NO.: 70127335	DATE(S) DRILLED: November 29, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.11/1.71		0.0	Orange sand, fill to 10 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.66/1.21		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	2.91/2.66		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-		7.5	
					8.0	Wet
					8.5	
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
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WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: S-18
PROJECT NO.: 70127335	DATE(S) DRILLED: November 29, 2012
PROJECT LOCATION:	DRILLING CONTR.: Bridger Drilling Enterprises, Inc.
Parcel #17, #18, and #19, 420 Line Avenue	DRILL METHOD: Geoprobe
Greenville, North Carolina	BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Thomas A. Perdue, EI	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0 - 2.5		NA	1.41/1.07		0.0	Gray and brown sandy clay to 2.5 feet
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	1.50/1.37		2.5	Gray and orange sandy clay from 2.5 feet to 10 feet
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5		NA	78.44/258.0	Petroleum odor	5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	-	Petroleum odor	7.5	
					8.0	
					8.5	Wet
					9.0	
					9.5	
					10.0	Boring terminated at 10 feet
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

APPENDIX B

Geophysical Survey Report

Schnabel ENGINEERING

December 13, 2012

Stephen J. Kerlin
Terracon Consulting Engineers and Scientists
5240 Green's Dairy Road
Raleigh, NC 27616

RE:
State Project: U-3315
WBS Element: 35781.1.2
County: Pitt
Description: Stantonsburg Road/Tenth Street Connector from Memorial Drive (US 13) to Evans Street

Subject: **Project 11821014.17, Report on Geophysical Surveys**
Parcel 17, William Ernest Statton Property, Greenville, North Carolina

Dear Mr. Kerlin:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we performed on the subject property. The report includes two 11x17 color figures and two 8.5x11 color figures with relevant data collected for this study. This study was performed in accordance with our proposal for Geophysical Surveys to Locate Possible USTs dated July 3, 2012, and approved by Cathy Houser on July 26, 2012, the subsequent approval via Gordon Box to add this property to the scope described in our proposal, and our agreement dated June 2, 2011.

INTRODUCTION

The field work described in this report was performed on November 19 and November 20, 2012, by Schnabel under our 2011 contract with the NCDOT. The purpose of the geophysical surveys was to investigate the presence of metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement. Photographs of the property are included on Figure 1. The property is located on Farmville Boulevard approximately 700 feet east of the intersection of S. Memorial Drive in Greenville, NC.

The geophysical surveys consisted of an electromagnetic (EM) induction survey and a ground penetrating radar (GPR) survey. The EM survey was performed using a Geonics EM61-MK2 instrument. The EM61 is a time domain metal detector that stores data digitally for later processing and review. Sensitivity to metallic objects is dependent on the size, depth, and orientation of the buried object and the amount of noise (i.e. response from spurious metallic objects) in the area. The EM61 can generally observe a single

buried 55 gallon drum at a depth of more than 10 ft. The EM61 makes measurements by creating an electromagnetic pulse and then measuring the response from metallic objects with time after the pulse is generated. We recorded the response at several times after the pulse to help evaluate relative size and depth of metallic objects in the earth.

The GPR survey was performed over a selected EM61 anomaly using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna to further evaluate an EM response that could indicate a potential UST.

Photographs of the equipment we used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. We recorded the locations of existing site features (utilities, metal objects, etc.) with the Trimble system for later correlation with the geophysical data and locations provided by the NCDOT.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over anomalous EM readings not obviously attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 17 and the GPR survey area location are shown on Figures 3 and 4. Early time data are plotted on Figure 3 and differential data (a comparison of the response at two different elevations above the ground surface) are presented in Figure 4. The early time data provide a more sensitive detection of all metal objects than later time data, which tend to highlight deeper and/or larger objects. Differential response is calculated from later time data between the top and bottom coils of the EM61 instrument that tend to filter out the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The early time and differential results show anomalies of unknown cause, in addition to those apparently caused by known site features. The site tenant stated that the site contained abundant scrap metal in the past and may have buried metal throughout the site. The early time data contain elevated readings throughout much of the site that is indicative of small items in the near surface. The differential data contain one anomalous area that we selected to investigate with GPR. The GPR data, along with the EM data, indicate that the differential EM anomaly of unknown cause is probably the result of buried scrap metal. The geophysical data collected at the site do not indicate the presence of metallic USTs within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project U-3315 in Greenville, NC indicates that metallic USTs are unlikely to be encountered within 8 feet of the ground surface in the areas surveyed on the subject property.

LIMITATIONS

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

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

James W. Whitt, PG
Senior Staff Geophysicist

Nigel Miller, PE
Project Manager

JW:MHD:NM
Attachments: Figures (4)
FILE: G:\2011-SDE-JOBS\11821014_00_NCDOT_2011_GEOTECHNICAL_UNIT_SERVICES\11821014_17_U-3315_PITT_COUNTY\REPORT\PARCEL 17\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 17 (U-3315).DOCX

Attachments:

- Figure 1 - Parcel 17 Site Photos
- Figure 2 - Photos of Geophysical Equipment Used
- Figure 3 - Parcel 17 Early Time Gate Response
- Figure 4 - Parcel 17 Differential Response

Parcel 17 (William Ernest Statton Property), looking southwest

Parcel 17 (William Ernest Statton Property), looking west

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPT. OF TRANSPORTATION
PITT COUNTY, NORTH CAROLINA
PROJECT NO. 11821014.17

PARCEL 17
SITE PHOTOS

FIGURE 1

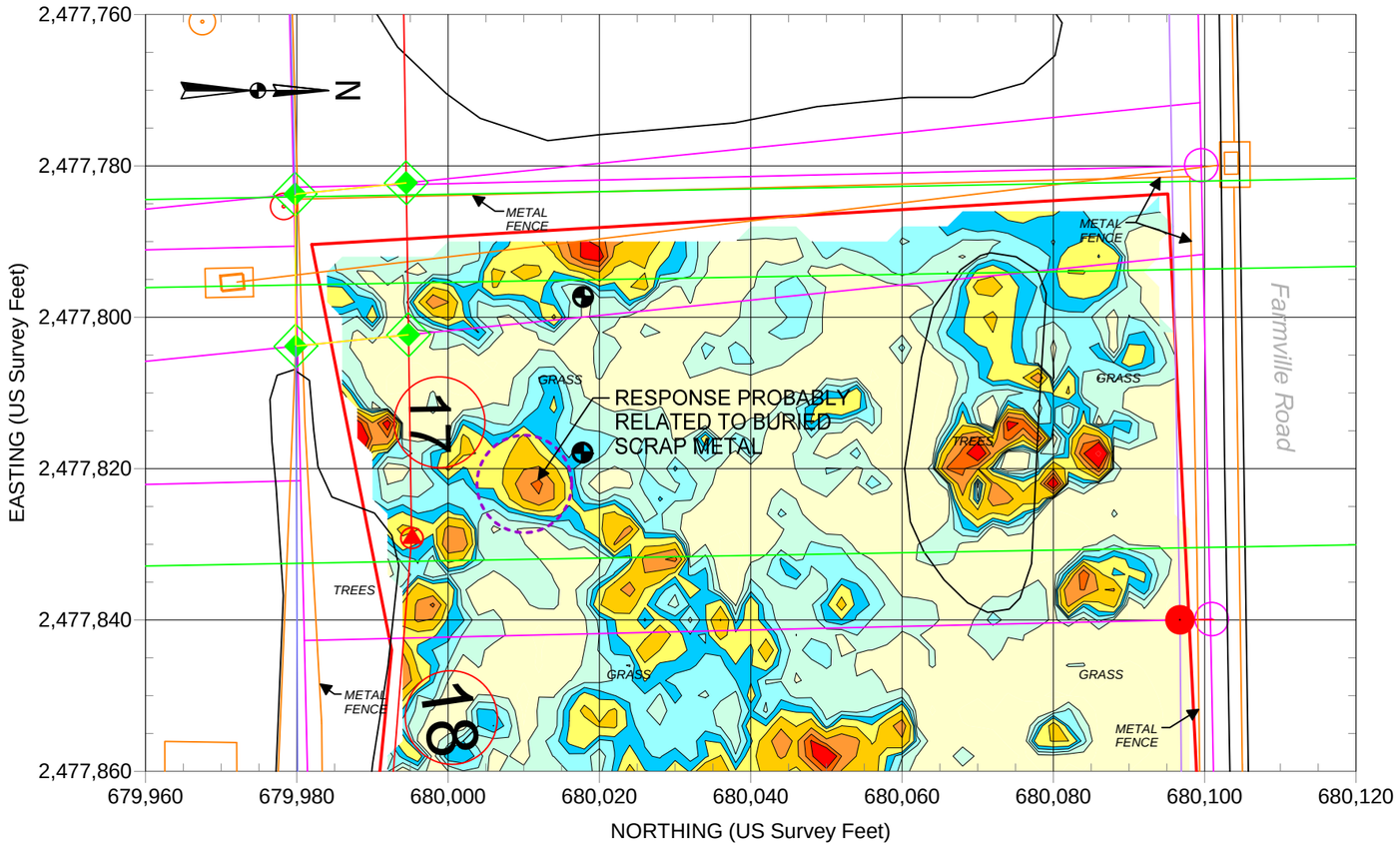
Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit

GSSI SIR-3000 Ground-Penetrating Radar with 400 MHz Antenna

Note: Stock photographs – not taken on site.

Schnabel ENGINEERING	STATE PROJECT U-3315 NC DEPT. OF TRANSPORTATION PITT COUNTY, NORTH CAROLINA PROJECT NO. 11821014.17	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2

PARCEL 17



EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet: 1 in = 20 ft

0 20 40 60

EXPLANATION

- PROPOSED BORING LOCATION (TERRACON)
- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE
- GPR SURVEY AREA
- EM61 SURVEY AREA

BASE PLAN FROM NCDOT FILE:
u3315_rdy_psh05.dgn
(FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and more sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on November 19, 2012, 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 November 20, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

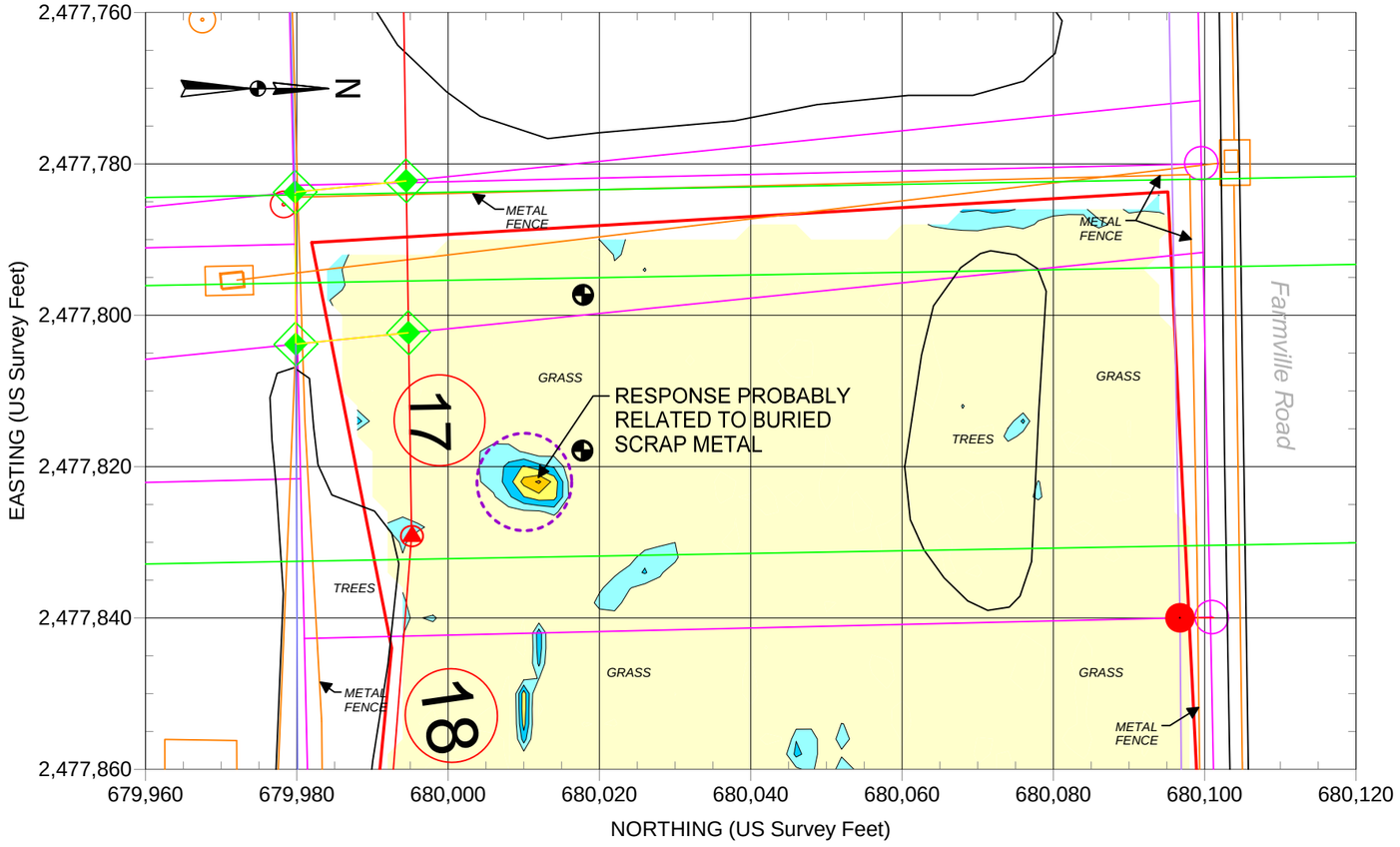
Schnabel ENGINEERING

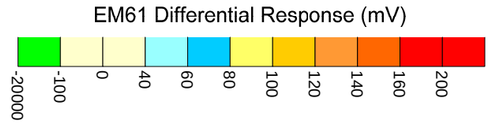
STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NC
PROJECT NO. 11821014.17

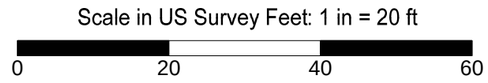
PARCEL 17 EM61 EARLY TIME GATE RESPONSE & GPR SURVEY AREAS

FIGURE 3

PARCEL 17







EXPLANATION

- PROPOSED BORING LOCATION (TERRACON)
- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE
- GPR SURVEY AREA
- EM61 SURVEY AREA

BASE PLAN FROM NCDOT FILE:
u3315_rdy_psh05.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 November 19, 2012, 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 November 20, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NC
PROJECT NO. 11821014.17

PARCEL 17 EM61
DIFFERENTIAL RESPONSE
& GPR SURVEY AREAS
FIGURE 4

Schnabel ENGINEERING

December 13, 2012

Stephen J. Kerlin
Terracon Consulting Engineers and Scientists
5240 Green's Dairy Road
Raleigh, NC 27616

RE:
State Project: U-3315
WBS Element: 35781.1.2
County: Pitt
Description: Stantonsburg Road/Tenth Street Connector from Memorial Drive (US 13) to Evans Street

Subject: **Project 11821014.17, Report on Geophysical Surveys**
Parcel 18, Phillip Ray Cox Property, Greenville, North Carolina

Dear Mr. Kerlin:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys performed on the subject property. The report includes two 11x17 color figures and two 8.5x11 color figures with relevant data collected for this study. This study was performed in accordance with our proposal for Geophysical Surveys to Locate Possible USTs dated July 3, 2012, as approved by Cathy Houser on July 26, 2012, the subsequent approval via Gordon Box to add this property to the scope described in our proposal, and our agreement dated June 2, 2011.

INTRODUCTION

The field work described in this report was performed on November 19 and November 20, 2012, by Schnabel under our 2011 contract with the NCDOT. The purpose of the geophysical surveys was to investigate the presence of metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement. Photographs of the property are included on Figure 1. The property is located on Farmville Boulevard approximately 800 feet east of the intersection of S. Memorial Drive in Greenville, NC.

The geophysical surveys consisted of an electromagnetic (EM) induction survey and a ground penetrating radar (GPR) survey. The EM survey was performed using a Geonics EM61-MK2 instrument. The EM61 is a time domain metal detector that stores data digitally for later processing and review. Sensitivity to metallic objects is dependent on the size, depth, and orientation of the buried object and the amount of noise (i.e. response from spurious metallic objects) in the area. The EM61 can generally observe a single

T/ 336-274-9456 F/ 336-274-9486
11A Oak Branch Drive / Greensboro, NC / 27407

buried 55 gallon drum at a depth of more than 10 ft. The EM61 makes measurements by creating an electromagnetic pulse and then measuring the response from metallic objects with time after the pulse is generated. We recorded the response at several times after the pulse to help evaluate relative size and depth of metallic objects in the earth.

The GPR survey was performed over selected EM61 anomalies using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna to further evaluate EM responses that could indicate a potential UST.

Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. We recorded the locations of existing site features (utilities, metal objects, etc.) with the Trimble system for later correlation with the geophysical data and locations provided by the NCDOT.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over areas of anomalous EM readings not obviously attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 18 and the GPR survey area locations are shown on Figures 3 and 4. Early time data are plotted on Figure 3 and differential data (a comparison of the response at two different elevations above the ground surface) are presented in Figure 4. The early time data provide a more sensitive detection of metal objects than later time data, which tend to highlight deeper and/or larger objects. Differential response is calculated from later time data between the top and bottom coils of the EM61 instrument that tend to filter out the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The early time and differential results show anomalies of unknown cause, in addition to those apparently caused by known site features. The site tenant stated that the site contained abundant scrap metal in the past and may have buried metal throughout the site. The early time data contain elevated readings throughout much of the site that is indicative of small items in the near surface. The differential data contain three anomalous areas that were selected to be investigated with GPR. The GPR data, along with the EM data, indicate that the northernmost differential EM anomaly of unknown cause is probably the result of buried scrap metal. The GPR data collected over the two more southern anomalies, along with the EM data, indicate that those anomalies of unknown cause are probably caused by buried metal

plates. The geophysical data collected at the site do not indicate the presence of metallic USTs within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project U-3315 in Greenville, NC indicates that metallic USTs are unlikely to be encountered within 8 feet of the ground surface in the areas surveyed on the subject property.

LIMITATIONS

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

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

James W. Whitt, PG
Senior Staff Geophysicist

Nigel Miller, PE
Project Manager

JW:MHD:NM
Attachments: Figures (4)
FILE: G:\2011-SDE-JOBS\11821014_00_NCDOT_2011_GEOTECHNICAL_UNIT_SERVICES\11821014_17_U-3315_PITT_COUNTY\REPORT\PARCEL 18\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 18 (U-3315).DOCX

Attachments:

- Figure 1 - Parcel 18 Site Photos
- Figure 2 - Photos of Geophysical Equipment Used
- Figure 3 - Parcel 18 Early Time Gate Response
- Figure 4 - Parcel 18 Differential Response

Parcel 18 (Phillip Ray Cox Property), looking south

Parcel 18 (Phillip Ray Cox Property), looking southwest

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPT. OF TRANSPORTATION
PITT COUNTY, NORTH CAROLINA
PROJECT NO. 11821014.17

PARCEL 18
SITE PHOTOS

FIGURE 1

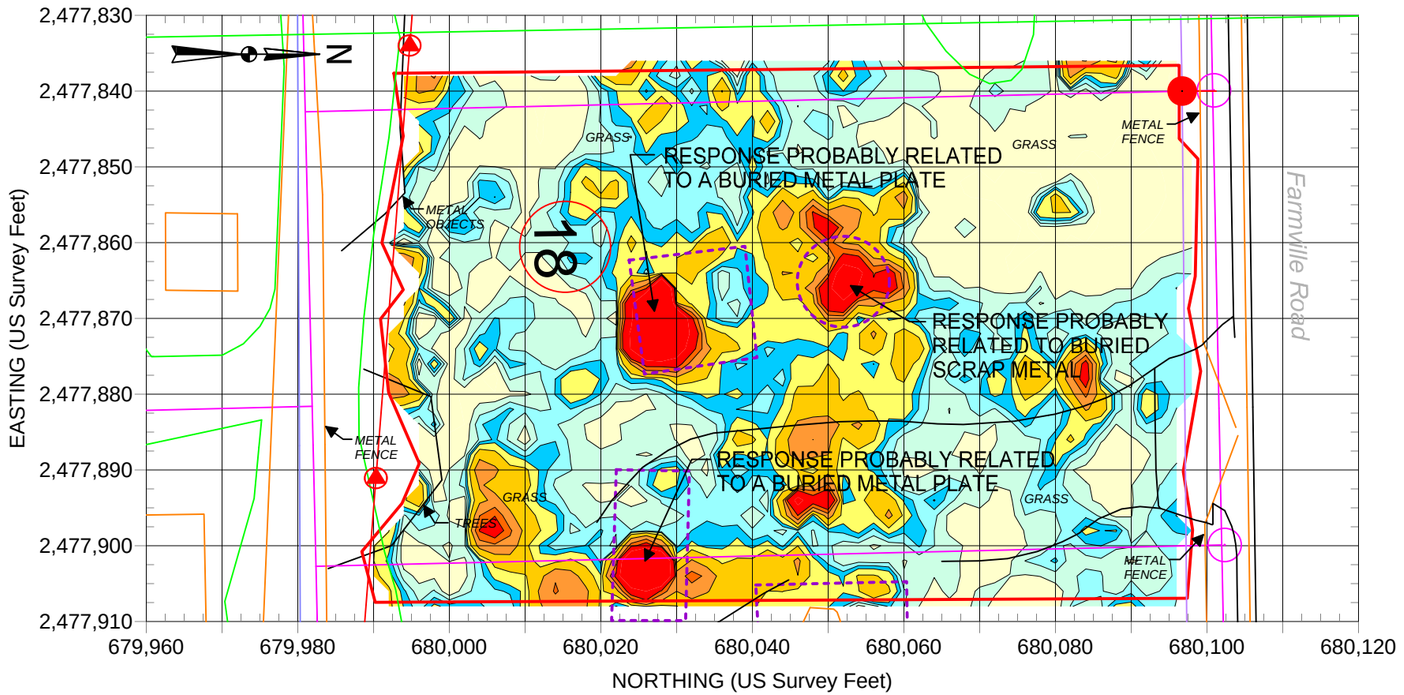
Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit

GSSI SIR-3000 Ground-Penetrating Radar with 400 MHz Antenna

Note: Stock photographs – not taken on site.

Schnabel ENGINEERING	STATE PROJECT U-3315 NC DEPT. OF TRANSPORTATION PITT COUNTY, NORTH CAROLINA PROJECT NO. 11821014.17	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2

PARCEL 18



BASE PLAN FROM NCDOT FILE:
u3315_rdy_psh05.dgn &
u3315_rdy_psh06.dgn
(FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and more sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on November 19, 2012, 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 November 20, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

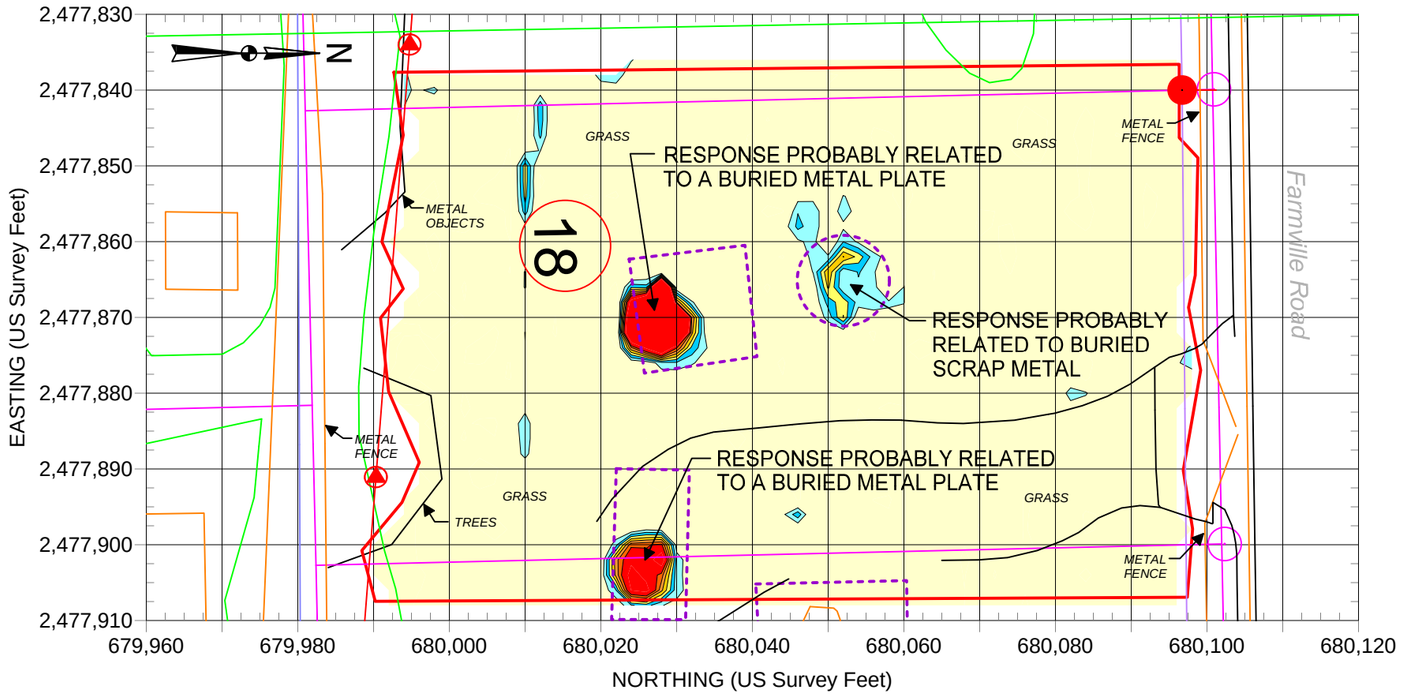
Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NC
PROJECT NO. 11821014.17

PARCEL 18 EM61 EARLY TIME GATE RESPONSE & GPR SURVEY AREAS

FIGURE 3

PARCEL 18



EM61 Differential Response (mV)

-20000 -100 0 40 60 80 100 120 140 160 200

Scale in US Survey Feet: 1 in = 20 ft

0 20 40 60

EXPLANATION

- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE
- GPR SURVEY AREA
- EM61 SURVEY AREA

BASE PLAN FROM NCDOT FILE:
u3315_rdy_psh05.dgn &
u3315_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 November 19, 2012, 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 November 20, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NC
PROJECT NO. 11821014.17

PARCEL 18 EM61
DIFFERENTIAL RESPONSE
& GPR SURVEY AREAS
FIGURE 4

Schnabel
ENGINEERING

December 13, 2012

Stephen Kerlin
Terracon Consulting Engineers and Scientists
5240 Green's Dairy Road
Raleigh, NC 27616

RE:
State Project: U-3315
WBS Element: 35781.1.2
County: Pitt
Description: Stantonsburg Road/Tenth Street Connector from Memorial Drive (US 13) to Evans Street

Subject: **Project 11821014.17, Report on Geophysical Surveys**
Parcel 19, Liam Cox Property, Greenville, North Carolina

Dear Mr. Kerlin:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys performed on the subject property. The report includes two 11x17 color figures and two 8.5x11 color figures with relevant data collected for this study. This study was performed in accordance with our proposal for Geophysical Surveys to Locate Possible USTs dated July 3, 2012, as approved by Cathy Houser on July 26, 2012, the subsequent approval via Gordon Box to add this property to the scope described in our proposal, and our agreement dated June 2, 2011.

INTRODUCTION

The field work described in this report was performed on November 19 and November 20, 2012, by Schnabel under our 2011 contract with the NCDOT. The purpose of the geophysical surveys was to investigate the presence of metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement. Photographs of the site are included on Figure 1. The site is located on the southwest quadrant of the intersection of Farmville Boulevard and Line Avenue in Greenville, NC.

The geophysical surveys consisted of an electromagnetic (EM) induction survey and a ground penetrating radar (GPR) survey. The EM survey was performed using a Geonics EM61-MK2 instrument. The EM61 is a time domain metal detector that stores data digitally for later processing and review. Sensitivity to metallic objects is dependent on the size, depth, and orientation of the buried object and the amount of noise (i.e. response from spurious metallic objects) in the area. The EM61 can generally observe a single buried 55 gallon drum at a depth of more than 10 ft. The EM61 makes measurements by creating an

electromagnetic pulse and then measuring the response from metallic objects with time after the pulse is generated. We recorded the response at several times after the pulse to help evaluate relative size and depth of metallic objects in the earth.

The GPR survey was performed over selected EM61 anomalies using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna to further evaluate EM responses that could indicate a potential UST.

Photographs of the geophysical instruments we used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. We recorded the locations of existing site features (utilities, metallic objects, etc.) with the Trimble system for later correlation with the geophysical data and locations provided by the NCDOT.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 19 and the GPR survey area locations are shown on Figures 3 and 4. Early time data are plotted on Figure 3 and differential data (a comparison of the response at two different elevations above the ground surface) are presented in Figure 4. The early time data provide a more sensitive detection of all metal objects than later time data, which tend to highlight deeper and/or larger objects. Differential response is calculated from later time data between the top and bottom coils of the EM61 instrument that tend to filter out the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The early time gate and differential results contain anomalies of unknown cause, in addition to those apparently caused by buried utilities or known site features (Figures 3 and 4). The site tenant stated that the site contained abundant scrap metal in the past and may have buried metal throughout the site. The early time data contain elevated readings throughout much of the site that is indicative of small items in the near surface. The differential data contain several anomalies of unknown cause, shown on Figures 3 and 4, that we selected to investigate with GPR. The GPR data indicate that those EM anomalies of unknown cause are probably caused by buried metal plates, buried metal pipes, other small buried metal objects, or metal objects on or above the ground surface.

After further data processing and review in the office, we noted an additional differential EM anomaly adjacent to the west side of the largest building on Parcel 19 that we designated Possible UST No. 1. The area is located about 20 to 25 feet northwest of the southwestern corner of the largest building on Parcel 19 (see Figures 3 and 4). Although the EM data suggest there may be UST at this location, our confidence in the location of the data is somewhat questionable due to poor GPS coverage near the building, and the anomaly could possibly be representative of some other buried metallic object. We selected Possible UST No. 1 in accordance with the anomaly categories provided by the NCDOT in their letter, dated May 19, 2009, entitled “Geophysical Surveys to Identify USTs”. The location of Possible UST No. 1 is shown on Figures 3 and 4. The size of the EM anomaly suggests Possible UST No. 1 is potentially about 3 feet in diameter and about 5 feet long, equivalent to a capacity of about 270 to 280 gallons.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project U-3315 in Greenville, NC indicates the following:

The geophysical data indicate the presence of a possible UST 20 to 25 feet northwest of the southwestern corner of the largest building on Parcel 19. The EM data suggest Possible UST No. 1 is potentially about 3 feet in diameter and about 5 feet long, equivalent to a capacity of about 270 to 280 gallons. We recommend that this location be physically investigated to confirm or rule out the presence of a UST.

LIMITATIONS

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

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

James W. Whitt, PG
Senior Staff Geophysicist

Nigel Miller, PE
Associate

JW:MHD:NM
Attachments: Figures (4)
FILE: G:\2011-SDE-JOBS\11821014_00_NCDOT_2011_GEOTECHNICAL_UNIT_SERVICES\11821014_17_U-3315_PITT_COUNTY\REPORT\PARCEL 19\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 19 (U-3315).DOCX

Attachments:

- Figure 1 - Parcel 19 Site Photos
- Figure 2 - Photos of Geophysical Equipment Used
- Figure 3 - Parcel 19 Early Time Gate Response
- Figure 4 - Parcel 19 Differential Response

Parcel 19 (Liam Cox Property), looking southwest

Parcel 19 (Liam Cox Property), looking southeast

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPT. OF TRANSPORTATION
PITT COUNTY, NORTH CAROLINA
PROJECT NO. 11821014.17

PARCEL 19
SITE PHOTOS

FIGURE 1

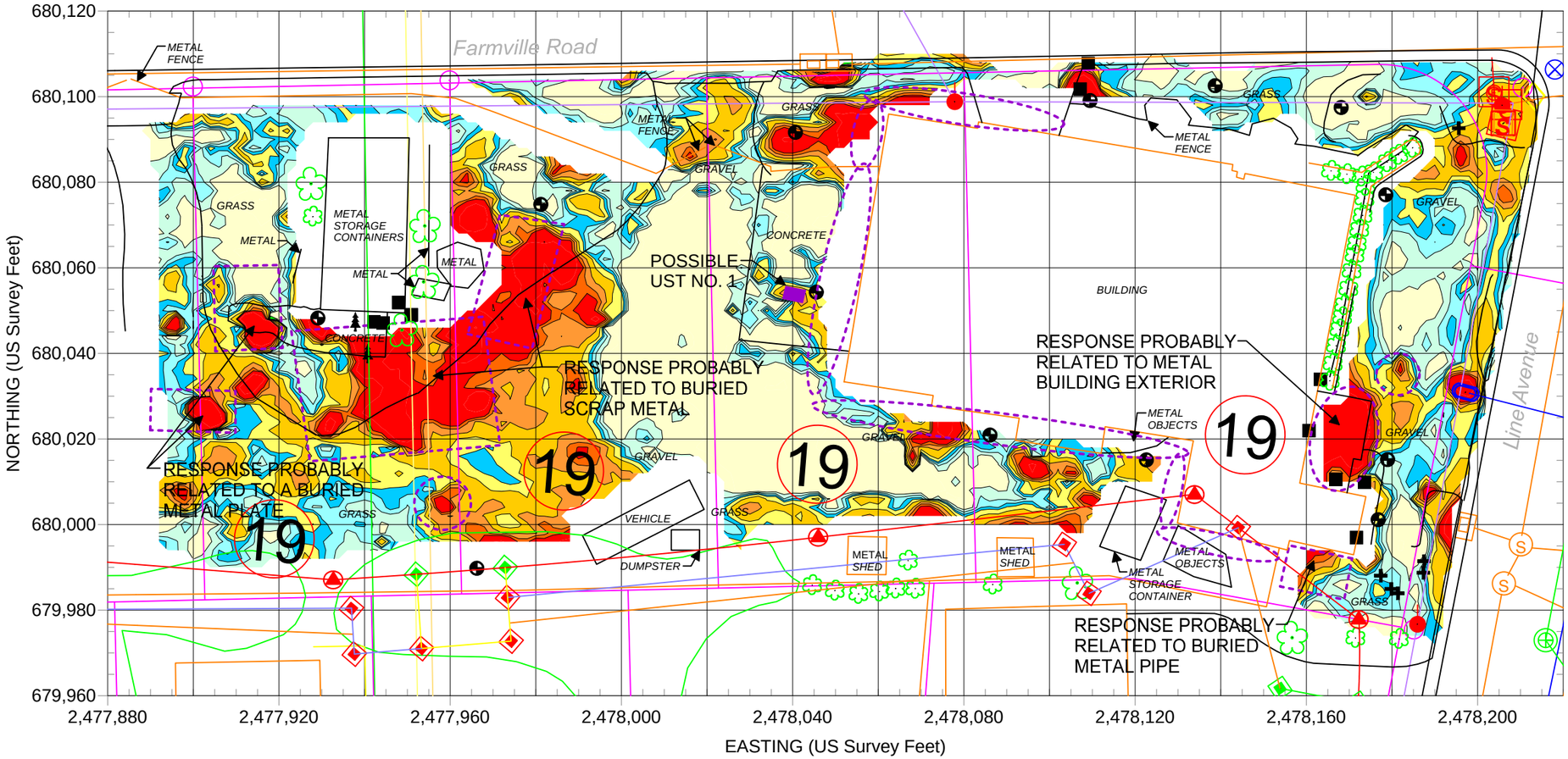
Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit

GSSI SIR-3000 Ground-Penetrating Radar with 400 MHz Antenna

Note: Stock photographs – not taken on site.

Schnabel ENGINEERING	STATE PROJECT U-3315 NC DEPT. OF TRANSPORTATION PITT COUNTY, NORTH CAROLINA PROJECT NO. 11821014.17	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2

PARCEL 19



EXPLANATION

- PROPOSED BORING LOCATION (TERRACON)
- MISCELLANEOUS METALLIC OBJECT
- GUY WIRE
- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE
- GPR SURVEY AREA
- LOCATION OF SUSPECT USTS MARKED ON SITE

BASE PLAN FROM NCDOT FILE:
u3315_rdy_psh06.dgn
(FOR SOME SITE FEATURES)

EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet

0 30 60 90

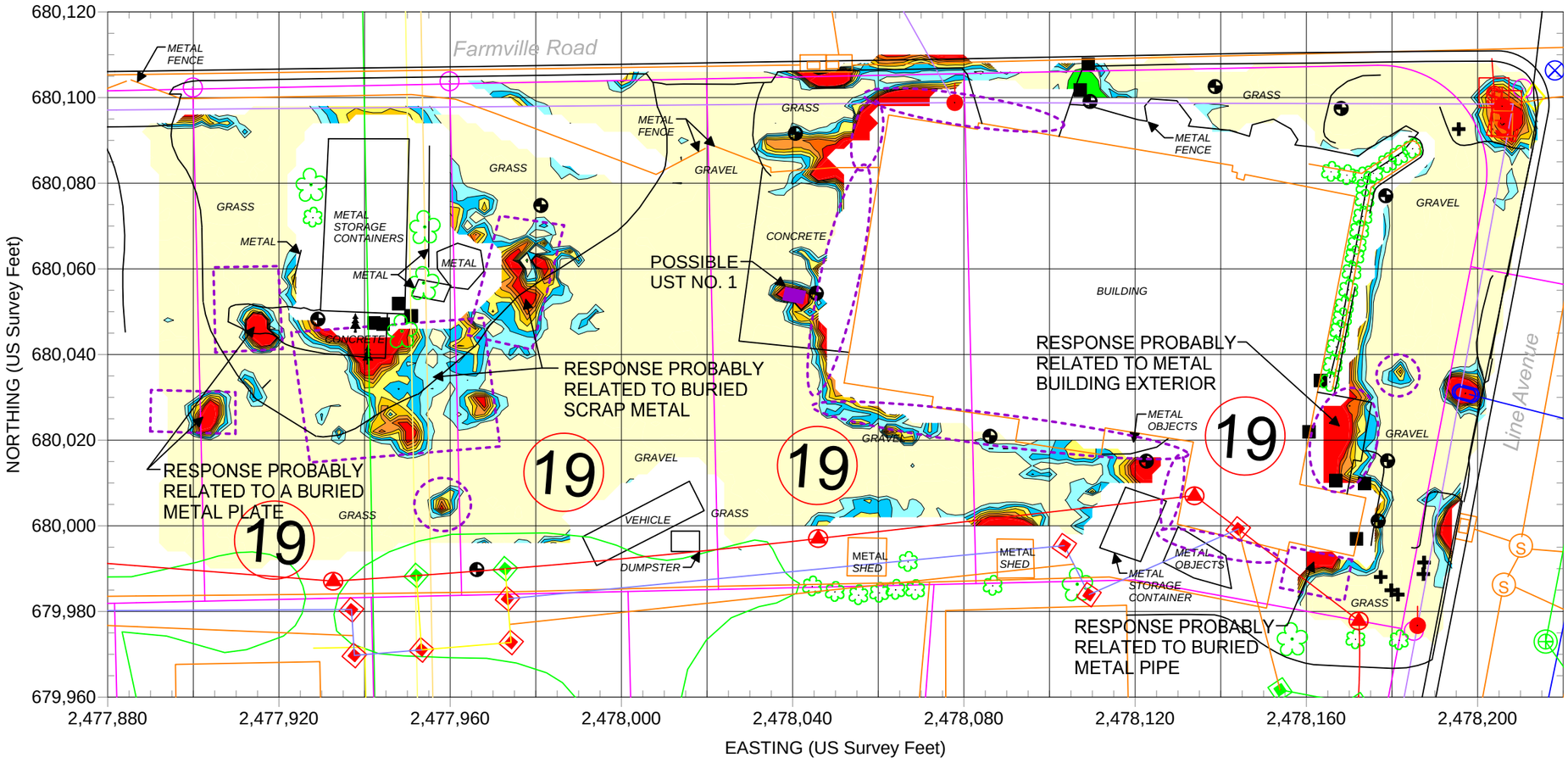
Note: The contour plot shows the earliest and more sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on November 19, 2012, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on November 20, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NC
PROJECT NO. 11821014.17

PARCEL 19 EM61
EARLY TIME GATE RESPONSE
& GPR SURVEY AREAS
FIGURE 3

PARCEL 19



EXPLANATION

- PROPOSED BORING LOCATION (TERRACON)
- MISCELLANEOUS METALLIC OBJECT
- GUY WIRE
- EDGE OF NCDOT PROPOSED R/W
- PROPERTY LINE
- GPR SURVEY AREA
- LOCATION OF SUSPECT USTS MARKED ON SITE

BASE PLAN FROM NCDOT FILE:
u3315_rdy_psh06.dgn
(FOR SOME SITE FEATURES)

EM61 Differential Response (mV)

-20000 -100 0 40 60 80 100 120 140 160 200

Scale in US Survey Feet

0 30 60 90

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 November 19, 2012, 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 November 20, 2012, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel ENGINEERING

STATE PROJECT U-3315
NC DEPARTMENT OF TRANSPORTATION
PITT COUNTY, NC
PROJECT NO. 11821014.17

PARCEL 19 EM61
DIFFERENTIAL RESPONSE
& GPR SURVEY AREAS

FIGURE 4

APPENDIX C

Laboratory Analytical Reports and Chain of Custody

Laboratory Report of Analysis

To: Steve Kerlin
Terracon
5240 Greens Dairy Rd
Raleigh, NC 27616

Report Number: **31203948**

Client Project: **70127335**

Dear Steve Kerlin,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

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

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

Sincerely,
SGS North America Inc.

Michael D. Page Date
Project Manager
michael.page@sgs.com

Print Date: 12/13/2012 N.C. Certification # 481

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Estimated Concentration.
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
S-9	31203948001	11/28/2012 15:00	12/01/2012 10:30	Soil-Solid as dry weight
S-15	31203948002	11/30/2012 09:22	12/01/2012 10:30	Soil-Solid as dry weight
S-18	31203948003	11/30/2012 10:18	12/01/2012 10:30	Soil-Solid as dry weight

Case Narrative

S-18

8260B - The result for 1,3,5-Trimethylbenzene at a 1X dilution was above the calibration range. The sample was diluted and re-analyzed, but was ND for this analyte. The initial run has been reported with an E flag.

E - Results over Calibration Range

Results of **S-9**

Client Sample ID: **S-9**
Client Project ID: **70127335**
Lab Sample ID: 31203948001-A
Lab Project ID: 31203948

Collection Date: 11/28/2012 15:00
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 72.70

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,1,1-Trichloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,1,2,2-Tetrachloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,1,2-Trichloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,1-Dichloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,1-Dichloroethene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,1-Dichloropropene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2,3-Trichlorobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2,3-Trichloropropane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2,4-Trichlorobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2,4-Trimethylbenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2-Dibromo-3-chloropropane	ND		27.5	ug/Kg	1	12/7/2012 16:48
1,2-Dibromoethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2-Dichlorobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2-Dichloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,2-Dichloropropane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,3,5-Trimethylbenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,3-Dichlorobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,3-Dichloropropane	ND		4.58	ug/Kg	1	12/7/2012 16:48
1,4-Dichlorobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
2,2-Dichloropropane	ND		4.58	ug/Kg	1	12/7/2012 16:48
2-Butanone	ND		22.9	ug/Kg	1	12/7/2012 16:48
2-Chlorotoluene	ND		4.58	ug/Kg	1	12/7/2012 16:48
2-Hexanone	ND		11.5	ug/Kg	1	12/7/2012 16:48
4-Chlorotoluene	ND		4.58	ug/Kg	1	12/7/2012 16:48
4-Isopropyltoluene	ND		4.58	ug/Kg	1	12/7/2012 16:48
4-Methyl-2-pentanone	ND		11.5	ug/Kg	1	12/7/2012 16:48
Acetone	ND		45.8	ug/Kg	1	12/7/2012 16:48
Benzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Bromobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Bromochloromethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
Bromodichloromethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
Bromoform	ND		4.58	ug/Kg	1	12/7/2012 16:48
Bromomethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
n-Butylbenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Carbon disulfide	ND		4.58	ug/Kg	1	12/7/2012 16:48
Carbon tetrachloride	ND		4.58	ug/Kg	1	12/7/2012 16:48
Chlorobenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Chloroethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
Chloroform	ND		4.58	ug/Kg	1	12/7/2012 16:48
Chloromethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
Dibromochloromethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
Dibromomethane	ND		4.58	ug/Kg	1	12/7/2012 16:48

Print Date: 12/13/2012

N.C. Certification # 481

Results of **S-9**

Client Sample ID: **S-9**
Client Project ID: **70127335**
Lab Sample ID: 31203948001-A
Lab Project ID: 31203948

Collection Date: 11/28/2012 15:00
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 72.70

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
cis-1,3-Dichloropropene	ND		4.58	ug/Kg	1	12/7/2012 16:48
trans-1,3-Dichloropropene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Diisopropyl Ether	ND		4.58	ug/Kg	1	12/7/2012 16:48
Ethyl Benzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Hexachlorobutadiene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Isopropylbenzene (Cumene)	ND		4.58	ug/Kg	1	12/7/2012 16:48
Methyl iodide	ND		4.58	ug/Kg	1	12/7/2012 16:48
Methylene chloride	ND		18.3	ug/Kg	1	12/7/2012 16:48
Naphthalene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Styrene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Tetrachloroethene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Toluene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Trichloroethene	ND		4.58	ug/Kg	1	12/7/2012 16:48
Trichlorofluoromethane	ND		4.58	ug/Kg	1	12/7/2012 16:48
Vinyl chloride	ND		4.58	ug/Kg	1	12/7/2012 16:48
Xylene (total)	ND		9.16	ug/Kg	1	12/7/2012 16:48
cis-1,2-Dichloroethene	ND		4.58	ug/Kg	1	12/7/2012 16:48
m,p-Xylene	ND		9.16	ug/Kg	1	12/7/2012 16:48
n-Propylbenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
o-Xylene	ND		4.58	ug/Kg	1	12/7/2012 16:48
sec-Butylbenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
tert-Butyl methyl ether (MTBE)	ND		4.58	ug/Kg	1	12/7/2012 16:48
tert-Butylbenzene	ND		4.58	ug/Kg	1	12/7/2012 16:48
trans-1,2-Dichloroethene	ND		4.58	ug/Kg	1	12/7/2012 16:48
trans-1,4-Dichloro-2-butene	ND		22.9	ug/Kg	1	12/7/2012 16:48
Surrogates						
1,2-Dichloroethane-d4	114		55.0-173	%	1	12/7/2012 16:48
4-Bromofluorobenzene	99.0		23.0-141	%	1	12/7/2012 16:48
Toluene d8	102		57.0-134	%	1	12/7/2012 16:48

Batch Information

Analytical Batch: **VMS2772**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX4417**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **12/07/2012 16:22**
Prep Initial Wt./Vol.: **7.5 g**
Prep Extract Vol: **5 mL**

Print Date: 12/13/2012

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Results of **S-9**

Client Sample ID: **S-9**
Client Project ID: **70127335**
Lab Sample ID: 31203948001-D
Lab Project ID: 31203948

Collection Date: 11/28/2012 15:00
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 72.70

Results by **MADEP VPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C5-C8 Aliphatics	ND		4.63	mg/kg	1	12/11/2012 14:49
C9-C10 Aromatics	ND		4.63	mg/kg	1	12/11/2012 14:49
C9-C12 Aliphatics	ND		4.63	mg/kg	1	12/11/2012 14:49
Surrogates						
FID - 4-Bromofluorobenzene	88.0		70.0-130	%	1	12/11/2012 14:49
PID - 4-Bromofluorobenzene	71.0		70.0-130	%	1	12/11/2012 14:49

Batch Information

Analytical Batch: **VGC2282**
Analytical Method: **MADEP VPH**
Instrument: **GC4**
Analyst: **MDY**

Prep Batch: **VXX4430**
Prep Method: **SW-846 5035 VPH prep**
Prep Date/Time: **12/11/2012 14:34**
Prep Initial Wt./Vol.: **7.42 g**
Prep Extract Vol: **5 mL**

Print Date: 12/13/2012

N.C. Certification # 481

Results of **S-9**

Client Sample ID: **S-9**
Client Project ID: **70127335**
Lab Sample ID: 31203948001-E
Lab Project ID: 31203948

Collection Date: 11/28/2012 15:00
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 72.70

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		446	ug/Kg	1	12/11/2012 16:57
1,2-Dichlorobenzene	ND		446	ug/Kg	1	12/11/2012 16:57
1,3-Dichlorobenzene	ND		446	ug/Kg	1	12/11/2012 16:57
1,4-Dichlorobenzene	ND		446	ug/Kg	1	12/11/2012 16:57
2,4,5-Trichlorophenol	ND		446	ug/Kg	1	12/11/2012 16:57
2,4,6-Trichlorophenol	ND		446	ug/Kg	1	12/11/2012 16:57
2,4-Dichlorophenol	ND		446	ug/Kg	1	12/11/2012 16:57
2,4-Dinitrophenol	ND		2230	ug/Kg	1	12/11/2012 16:57
2,4-Dinitrotoluene	ND		446	ug/Kg	1	12/11/2012 16:57
2,6-Dinitrotoluene	ND		446	ug/Kg	1	12/11/2012 16:57
2-Chloronaphthalene	ND		446	ug/Kg	1	12/11/2012 16:57
2-Chlorophenol	ND		446	ug/Kg	1	12/11/2012 16:57
2-Methylnaphthalene	ND		446	ug/Kg	1	12/11/2012 16:57
2-Methylphenol	ND		446	ug/Kg	1	12/11/2012 16:57
2-Nitroaniline	ND		446	ug/Kg	1	12/11/2012 16:57
2-Nitrophenol	ND		446	ug/Kg	1	12/11/2012 16:57
3 and/or 4-Methylphenol	ND		446	ug/Kg	1	12/11/2012 16:57
3,3'-Dichlorobenzidine	ND		892	ug/Kg	1	12/11/2012 16:57
3-Nitroaniline	ND		2230	ug/Kg	1	12/11/2012 16:57
4,6-Dinitro-2-methylphenol	ND		2230	ug/Kg	1	12/11/2012 16:57
4-Chloro-3-methylphenol	ND		446	ug/Kg	1	12/11/2012 16:57
4-Chloroaniline	ND		446	ug/Kg	1	12/11/2012 16:57
4-Chlorophenyl phenyl ether	ND		446	ug/Kg	1	12/11/2012 16:57
Acenaphthene	ND		446	ug/Kg	1	12/11/2012 16:57
Acenaphthylene	ND		446	ug/Kg	1	12/11/2012 16:57
Anthracene	ND		446	ug/Kg	1	12/11/2012 16:57
Benzo(a)anthracene	ND		446	ug/Kg	1	12/11/2012 16:57
Benzo(a)pyrene	ND		446	ug/Kg	1	12/11/2012 16:57
Benzo(b)fluoranthene	ND		446	ug/Kg	1	12/11/2012 16:57
Benzo(g,h,i)perylene	ND		446	ug/Kg	1	12/11/2012 16:57
Benzo(k)fluoranthene	ND		446	ug/Kg	1	12/11/2012 16:57
Benzoic acid	ND		2230	ug/Kg	1	12/11/2012 16:57
Bis(2-Chloroethoxy)methane	ND		446	ug/Kg	1	12/11/2012 16:57
Bis(2-Chloroethyl)ether	ND		446	ug/Kg	1	12/11/2012 16:57
Bis(2-Chloroisopropyl)ether	ND		446	ug/Kg	1	12/11/2012 16:57
Bis(2-Ethylhexyl)phthalate	ND		446	ug/Kg	1	12/11/2012 16:57
4-Bromophenyl phenyl ether	ND		446	ug/Kg	1	12/11/2012 16:57
Butyl benzyl phthalate	ND		446	ug/Kg	1	12/11/2012 16:57
Chrysene	ND		446	ug/Kg	1	12/11/2012 16:57
Di-n-butyl phthalate	ND		446	ug/Kg	1	12/11/2012 16:57
Di-n-octyl phthalate	ND		446	ug/Kg	1	12/11/2012 16:57
Dibenz(a,h)anthracene	ND		446	ug/Kg	1	12/11/2012 16:57
Dibenzofuran	ND		446	ug/Kg	1	12/11/2012 16:57

Print Date: 12/13/2012

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Results of **S-9**

Client Sample ID: **S-9**
Client Project ID: **70127335**
Lab Sample ID: 31203948001-E
Lab Project ID: 31203948

Collection Date: 11/28/2012 15:00
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 72.70

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		446	ug/Kg	1	12/11/2012 16:57
Dimethyl phthalate	ND		446	ug/Kg	1	12/11/2012 16:57
2,4-Dimethylphenol	ND		446	ug/Kg	1	12/11/2012 16:57
Diphenylamine	ND		446	ug/Kg	1	12/11/2012 16:57
Fluoranthene	ND		446	ug/Kg	1	12/11/2012 16:57
Fluorene	ND		446	ug/Kg	1	12/11/2012 16:57
Hexachlorobenzene	ND		2230	ug/Kg	1	12/11/2012 16:57
Hexachlorobutadiene	ND		446	ug/Kg	1	12/11/2012 16:57
Hexachlorocyclopentadiene	ND		892	ug/Kg	1	12/11/2012 16:57
Hexachloroethane	ND		446	ug/Kg	1	12/11/2012 16:57
Indeno(1,2,3-cd)pyrene	ND		446	ug/Kg	1	12/11/2012 16:57
Isophorone	ND		446	ug/Kg	1	12/11/2012 16:57
Naphthalene	ND		446	ug/Kg	1	12/11/2012 16:57
4-Nitroaniline	ND		2230	ug/Kg	1	12/11/2012 16:57
Nitrobenzene	ND		446	ug/Kg	1	12/11/2012 16:57
4-Nitrophenol	ND		2230	ug/Kg	1	12/11/2012 16:57
Pentachlorophenol	ND		2230	ug/Kg	1	12/11/2012 16:57
Phenanthrene	ND		446	ug/Kg	1	12/11/2012 16:57
Phenol	ND		446	ug/Kg	1	12/11/2012 16:57
Pyrene	ND		446	ug/Kg	1	12/11/2012 16:57
n-Nitrosodi-n-propylamine	ND		446	ug/Kg	1	12/11/2012 16:57
Surrogates						
2,4,6-Tribromophenol	89.0		41.0-129	%	1	12/11/2012 16:57
2-Fluorobiphenyl	93.0		48.0-123	%	1	12/11/2012 16:57
2-Fluorophenol	87.0		42.0-123	%	1	12/11/2012 16:57
Nitrobenzene-d5	87.0		46.0-117	%	1	12/11/2012 16:57
Phenol-d6	92.0		48.0-125	%	1	12/11/2012 16:57
Terphenyl-d14	90.0		44.0-140	%	1	12/11/2012 16:57

Batch Information

Analytical Batch: **XMS1766**
Analytical Method: **SW-846 8270D**
Instrument: **MSD6**
Analyst: **CMP**

Prep Batch: **XXX3394**
Prep Method: **SW-846 3541**
Prep Date/Time: **12/11/2012 13:16**
Prep Initial Wt./Vol.: **30.88 g**
Prep Extract Vol: **10 mL**

Print Date: 12/13/2012

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Results of **S-9**

Client Sample ID: **S-9**
Client Project ID: **70127335**
Lab Sample ID: 31203948001-E
Lab Project ID: 31203948

Collection Date: 11/28/2012 15:00
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 72.70

Results by **MADEP EPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C11-C22 Aromatics	ND		15.6	mg/kg	1	12/12/2012 22:13
C19-C36 Aliphatics	ND		8.06	mg/kg	1	12/12/2012 21:44
C9-C18 Aliphatics	**14.2**		6.98	mg/kg	1	12/12/2012 21:44
Surrogates						
2-Bromonaphthalene	81.3		40.0-140	%	1	12/12/2012 22:13
2-Fluorobiphenyl	81.0		40.0-140	%	1	12/12/2012 22:13
n-Tricosane	110		40.0-140	%	1	12/12/2012 21:44
o-Terphenyl	80.0		40.0-140	%	1	12/12/2012 22:13

Batch Information

Analytical Batch: **XGC2788**
Analytical Method: **MADEP EPH**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3393**
Prep Method: **SW-846 3541/8015 EPH**
Prep Date/Time: **12/11/2012 13:13**
Prep Initial Wt./Vol.: **13.71 g**
Prep Extract Vol: **10 mL**

Print Date: 12/13/2012

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Results of **S-15**

Client Sample ID: **S-15**
Client Project ID: **70127335**
Lab Sample ID: 31203948002-A
Lab Project ID: 31203948

Collection Date: 11/30/2012 09:22
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.70

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,1,1-Trichloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,1,2,2-Tetrachloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,1,2-Trichloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,1-Dichloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,1-Dichloroethene	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,1-Dichloropropene	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2,3-Trichlorobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2,3-Trichloropropane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2,4-Trichlorobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2,4-Trimethylbenzene	**51.8**		4.18	ug/Kg	1	12/7/2012 17:41
1,2-Dibromo-3-chloropropane	ND		25.1	ug/Kg	1	12/7/2012 17:41
1,2-Dibromoethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2-Dichlorobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2-Dichloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,2-Dichloropropane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,3,5-Trimethylbenzene	**24.6**		4.18	ug/Kg	1	12/7/2012 17:41
1,3-Dichlorobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,3-Dichloropropane	ND		4.18	ug/Kg	1	12/7/2012 17:41
1,4-Dichlorobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
2,2-Dichloropropane	ND		4.18	ug/Kg	1	12/7/2012 17:41
2-Butanone	ND		20.9	ug/Kg	1	12/7/2012 17:41
2-Chlorotoluene	ND		4.18	ug/Kg	1	12/7/2012 17:41
2-Hexanone	ND		10.4	ug/Kg	1	12/7/2012 17:41
4-Chlorotoluene	ND		4.18	ug/Kg	1	12/7/2012 17:41
4-Isopropyltoluene	ND		4.18	ug/Kg	1	12/7/2012 17:41
4-Methyl-2-pentanone	ND		10.4	ug/Kg	1	12/7/2012 17:41
Acetone	ND		41.8	ug/Kg	1	12/7/2012 17:41
Benzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Bromobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Bromochloromethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
Bromodichloromethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
Bromoform	ND		4.18	ug/Kg	1	12/7/2012 17:41
Bromomethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
n-Butylbenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Carbon disulfide	ND		4.18	ug/Kg	1	12/7/2012 17:41
Carbon tetrachloride	ND		4.18	ug/Kg	1	12/7/2012 17:41
Chlorobenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Chloroethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
Chloroform	ND		4.18	ug/Kg	1	12/7/2012 17:41
Chloromethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
Dibromochloromethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
Dibromomethane	ND		4.18	ug/Kg	1	12/7/2012 17:41

Print Date: 12/13/2012

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Results of **S-15**

Client Sample ID: **S-15**
Client Project ID: **70127335**
Lab Sample ID: 31203948002-A
Lab Project ID: 31203948

Collection Date: 11/30/2012 09:22
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.70

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
cis-1,3-Dichloropropene	ND		4.18	ug/Kg	1	12/7/2012 17:41
trans-1,3-Dichloropropene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Diisopropyl Ether	ND		4.18	ug/Kg	1	12/7/2012 17:41
Ethyl Benzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Hexachlorobutadiene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Isopropylbenzene (Cumene)	ND		4.18	ug/Kg	1	12/7/2012 17:41
Methyl iodide	ND		4.18	ug/Kg	1	12/7/2012 17:41
Methylene chloride	ND		16.7	ug/Kg	1	12/7/2012 17:41
Naphthalene	**9.80**		4.18	ug/Kg	1	12/7/2012 17:41
Styrene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Tetrachloroethene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Toluene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Trichloroethene	ND		4.18	ug/Kg	1	12/7/2012 17:41
Trichlorofluoromethane	ND		4.18	ug/Kg	1	12/7/2012 17:41
Vinyl chloride	ND		4.18	ug/Kg	1	12/7/2012 17:41
Xylene (total)	**17.4**		8.36	ug/Kg	1	12/7/2012 17:41
cis-1,2-Dichloroethene	ND		4.18	ug/Kg	1	12/7/2012 17:41
m,p-Xylene	ND		8.36	ug/Kg	1	12/7/2012 17:41
n-Propylbenzene	**7.29**		4.18	ug/Kg	1	12/7/2012 17:41
o-Xylene	**12.9**		4.18	ug/Kg	1	12/7/2012 17:41
sec-Butylbenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
tert-Butyl methyl ether (MTBE)	ND		4.18	ug/Kg	1	12/7/2012 17:41
tert-Butylbenzene	ND		4.18	ug/Kg	1	12/7/2012 17:41
trans-1,2-Dichloroethene	ND		4.18	ug/Kg	1	12/7/2012 17:41
trans-1,4-Dichloro-2-butene	ND		20.9	ug/Kg	1	12/7/2012 17:41
Surrogates						
1,2-Dichloroethane-d4	96.0		55.0-173	%	1	12/7/2012 17:41
4-Bromofluorobenzene	101		23.0-141	%	1	12/7/2012 17:41
Toluene d8	102		57.0-134	%	1	12/7/2012 17:41

Batch Information

Analytical Batch: **VMS2772**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX4417**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **12/07/2012 16:23**
Prep Initial Wt./Vol.: **7.06 g**
Prep Extract Vol: **5 mL**

Print Date: 12/13/2012

N.C. Certification # 481

Results of **S-15**

Client Sample ID: **S-15**
Client Project ID: **70127335**
Lab Sample ID: 31203948002-D
Lab Project ID: 31203948

Collection Date: 11/30/2012 09:22
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.70

Results by **MADEP VPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C5-C8 Aliphatics	ND		3.99	mg/kg	1	12/11/2012 15:16
C9-C10 Aromatics	**9.20**		3.99	mg/kg	1	12/11/2012 15:16
C9-C12 Aliphatics	**16.8**		3.99	mg/kg	1	12/11/2012 15:16
Surrogates						
FID - 4-Bromofluorobenzene	99.0		70.0-130	%	1	12/11/2012 15:16
PID - 4-Bromofluorobenzene	84.0		70.0-130	%	1	12/11/2012 15:16

Batch Information

Analytical Batch: **VGC2282**
Analytical Method: **MADEP VPH**
Instrument: **GC4**
Analyst: **MDY**

Prep Batch: **VXX4430**
Prep Method: **SW-846 5035 VPH prep**
Prep Date/Time: **12/11/2012 14:34**
Prep Initial Wt./Vol.: **7.39 g**
Prep Extract Vol: **5 mL**

Print Date: 12/13/2012

N.C. Certification # 481

Results of **S-15**

Client Sample ID: **S-15**
Client Project ID: **70127335**
Lab Sample ID: 31203948002-E
Lab Project ID: 31203948

Collection Date: 11/30/2012 09:22
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.70

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		370	ug/Kg	1	12/11/2012 18:08
1,2-Dichlorobenzene	ND		370	ug/Kg	1	12/11/2012 18:08
1,3-Dichlorobenzene	ND		370	ug/Kg	1	12/11/2012 18:08
1,4-Dichlorobenzene	ND		370	ug/Kg	1	12/11/2012 18:08
2,4,5-Trichlorophenol	ND		370	ug/Kg	1	12/11/2012 18:08
2,4,6-Trichlorophenol	ND		370	ug/Kg	1	12/11/2012 18:08
2,4-Dichlorophenol	ND		370	ug/Kg	1	12/11/2012 18:08
2,4-Dinitrophenol	ND		1850	ug/Kg	1	12/11/2012 18:08
2,4-Dinitrotoluene	ND		370	ug/Kg	1	12/11/2012 18:08
2,6-Dinitrotoluene	ND		370	ug/Kg	1	12/11/2012 18:08
2-Chloronaphthalene	ND		370	ug/Kg	1	12/11/2012 18:08
2-Chlorophenol	ND		370	ug/Kg	1	12/11/2012 18:08
2-Methylnaphthalene	**1040**		370	ug/Kg	1	12/11/2012 18:08
2-Methylphenol	ND		370	ug/Kg	1	12/11/2012 18:08
2-Nitroaniline	ND		370	ug/Kg	1	12/11/2012 18:08
2-Nitrophenol	ND		370	ug/Kg	1	12/11/2012 18:08
3 and/or 4-Methylphenol	ND		370	ug/Kg	1	12/11/2012 18:08
3,3'-Dichlorobenzidine	ND		740	ug/Kg	1	12/11/2012 18:08
3-Nitroaniline	ND		1850	ug/Kg	1	12/11/2012 18:08
4,6-Dinitro-2-methylphenol	ND		1850	ug/Kg	1	12/11/2012 18:08
4-Chloro-3-methylphenol	ND		370	ug/Kg	1	12/11/2012 18:08
4-Chloroaniline	ND		370	ug/Kg	1	12/11/2012 18:08
4-Chlorophenyl phenyl ether	ND		370	ug/Kg	1	12/11/2012 18:08
Acenaphthene	ND		370	ug/Kg	1	12/11/2012 18:08
Acenaphthylene	ND		370	ug/Kg	1	12/11/2012 18:08
Anthracene	ND		370	ug/Kg	1	12/11/2012 18:08
Benzo(a)anthracene	ND		370	ug/Kg	1	12/11/2012 18:08
Benzo(a)pyrene	ND		370	ug/Kg	1	12/11/2012 18:08
Benzo(b)fluoranthene	ND		370	ug/Kg	1	12/11/2012 18:08
Benzo(g,h,i)perylene	ND		370	ug/Kg	1	12/11/2012 18:08
Benzo(k)fluoranthene	ND		370	ug/Kg	1	12/11/2012 18:08
Benzoic acid	ND		1850	ug/Kg	1	12/11/2012 18:08
Bis(2-Chloroethoxy)methane	ND		370	ug/Kg	1	12/11/2012 18:08
Bis(2-Chloroethyl)ether	ND		370	ug/Kg	1	12/11/2012 18:08
Bis(2-Chloroisopropyl)ether	ND		370	ug/Kg	1	12/11/2012 18:08
Bis(2-Ethylhexyl)phthalate	ND		370	ug/Kg	1	12/11/2012 18:08
4-Bromophenyl phenyl ether	ND		370	ug/Kg	1	12/11/2012 18:08
Butyl benzyl phthalate	ND		370	ug/Kg	1	12/11/2012 18:08
Chrysene	ND		370	ug/Kg	1	12/11/2012 18:08
Di-n-butyl phthalate	ND		370	ug/Kg	1	12/11/2012 18:08
Di-n-octyl phthalate	ND		370	ug/Kg	1	12/11/2012 18:08
Dibenz(a,h)anthracene	ND		370	ug/Kg	1	12/11/2012 18:08
Dibenzofuran	ND		370	ug/Kg	1	12/11/2012 18:08

Print Date: 12/13/2012

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Results of **S-15**

Client Sample ID: **S-15**
Client Project ID: **70127335**
Lab Sample ID: 31203948002-E
Lab Project ID: 31203948

Collection Date: 11/30/2012 09:22
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.70

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		370	ug/Kg	1	12/11/2012 18:08
Dimethyl phthalate	ND		370	ug/Kg	1	12/11/2012 18:08
2,4-Dimethylphenol	ND		370	ug/Kg	1	12/11/2012 18:08
Diphenylamine	ND		370	ug/Kg	1	12/11/2012 18:08
Fluoranthene	ND		370	ug/Kg	1	12/11/2012 18:08
Fluorene	ND		370	ug/Kg	1	12/11/2012 18:08
Hexachlorobenzene	ND		1850	ug/Kg	1	12/11/2012 18:08
Hexachlorobutadiene	ND		370	ug/Kg	1	12/11/2012 18:08
Hexachlorocyclopentadiene	ND		740	ug/Kg	1	12/11/2012 18:08
Hexachloroethane	ND		370	ug/Kg	1	12/11/2012 18:08
Indeno(1,2,3-cd)pyrene	ND		370	ug/Kg	1	12/11/2012 18:08
Isophorone	ND		370	ug/Kg	1	12/11/2012 18:08
Naphthalene	ND		370	ug/Kg	1	12/11/2012 18:08
4-Nitroaniline	ND		1850	ug/Kg	1	12/11/2012 18:08
Nitrobenzene	ND		370	ug/Kg	1	12/11/2012 18:08
4-Nitrophenol	ND		1850	ug/Kg	1	12/11/2012 18:08
Pentachlorophenol	ND		1850	ug/Kg	1	12/11/2012 18:08
Phenanthrene	ND		370	ug/Kg	1	12/11/2012 18:08
Phenol	ND		370	ug/Kg	1	12/11/2012 18:08
Pyrene	ND		370	ug/Kg	1	12/11/2012 18:08
n-Nitrosodi-n-propylamine	ND		370	ug/Kg	1	12/11/2012 18:08
Surrogates						
2,4,6-Tribromophenol	86.0		41.0-129	%	1	12/11/2012 18:08
2-Fluorobiphenyl	88.0		48.0-123	%	1	12/11/2012 18:08
2-Fluorophenol	84.0		42.0-123	%	1	12/11/2012 18:08
Nitrobenzene-d5	86.0		46.0-117	%	1	12/11/2012 18:08
Phenol-d6	91.0		48.0-125	%	1	12/11/2012 18:08
Terphenyl-d14	87.0		44.0-140	%	1	12/11/2012 18:08

Batch Information

Analytical Batch: **XMS1766**
Analytical Method: **SW-846 8270D**
Instrument: **MSD6**
Analyst: **CMP**

Prep Batch: **XXX3394**
Prep Method: **SW-846 3541**
Prep Date/Time: **12/11/2012 13:16**
Prep Initial Wt./Vol.: **31.94 g**
Prep Extract Vol: **10 mL**

Print Date: 12/13/2012

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Results of **S-15**

Client Sample ID: **S-15**
Client Project ID: **70127335**
Lab Sample ID: 31203948002-E
Lab Project ID: 31203948

Collection Date: 11/30/2012 09:22
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 84.70

Results by **MADEP EPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C11-C22 Aromatics	**20.0**		14.2	mg/kg	1	12/12/2012 23:09
C19-C36 Aliphatics	ND		7.33	mg/kg	1	12/12/2012 22:41
C9-C18 Aliphatics	**48.1**		6.34	mg/kg	1	12/12/2012 22:41
Surrogates						
2-Bromonaphthalene	83.5		40.0-140	%	1	12/12/2012 23:09
2-Fluorobiphenyl	84.0		40.0-140	%	1	12/12/2012 23:09
n-Tricosane	110		40.0-140	%	1	12/12/2012 22:41
o-Terphenyl	83.0		40.0-140	%	1	12/12/2012 23:09

Batch Information

Analytical Batch: **XGC2788**
Analytical Method: **MADEP EPH**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3393**
Prep Method: **SW-846 3541/8015 EPH**
Prep Date/Time: **12/11/2012 13:13**
Prep Initial Wt./Vol.: **12.95 g**
Prep Extract Vol: **10 mL**

Print Date: 12/13/2012

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Results of **S-18**

Client Sample ID: **S-18**
Client Project ID: **70127335**
Lab Sample ID: 31203948003-A
Lab Project ID: 31203948

Collection Date: 11/30/2012 10:18
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,1,1-Trichloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,1,2,2-Tetrachloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,1,2-Trichloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,1-Dichloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,1-Dichloroethene	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,1-Dichloropropene	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2,3-Trichlorobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2,3-Trichloropropane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2,4-Trichlorobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2,4-Trimethylbenzene	**24.8**		4.81	ug/Kg	1	12/7/2012 17:15
1,2-Dibromo-3-chloropropane	ND		28.9	ug/Kg	1	12/7/2012 17:15
1,2-Dibromoethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2-Dichlorobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2-Dichloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,2-Dichloropropane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,3,5-Trimethylbenzene	**294**	E	4.81	ug/Kg	1	12/7/2012 17:15
1,3-Dichlorobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,3-Dichloropropane	ND		4.81	ug/Kg	1	12/7/2012 17:15
1,4-Dichlorobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
2,2-Dichloropropane	ND		4.81	ug/Kg	1	12/7/2012 17:15
2-Butanone	ND		24.1	ug/Kg	1	12/7/2012 17:15
2-Chlorotoluene	ND		4.81	ug/Kg	1	12/7/2012 17:15
2-Hexanone	ND		12.0	ug/Kg	1	12/7/2012 17:15
4-Chlorotoluene	ND		4.81	ug/Kg	1	12/7/2012 17:15
4-Isopropyltoluene	**9.33**		4.81	ug/Kg	1	12/7/2012 17:15
4-Methyl-2-pentanone	ND		12.0	ug/Kg	1	12/7/2012 17:15
Acetone	ND		48.1	ug/Kg	1	12/7/2012 17:15
Benzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Bromobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Bromochloromethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
Bromodichloromethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
Bromoform	ND		4.81	ug/Kg	1	12/7/2012 17:15
Bromomethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
n-Butylbenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Carbon disulfide	ND		4.81	ug/Kg	1	12/7/2012 17:15
Carbon tetrachloride	ND		4.81	ug/Kg	1	12/7/2012 17:15
Chlorobenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Chloroethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
Chloroform	ND		4.81	ug/Kg	1	12/7/2012 17:15
Chloromethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
Dibromochloromethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
Dibromomethane	ND		4.81	ug/Kg	1	12/7/2012 17:15

Print Date: 12/13/2012

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Results of **S-18**

Client Sample ID: **S-18**
Client Project ID: **70127335**
Lab Sample ID: 31203948003-A
Lab Project ID: 31203948

Collection Date: 11/30/2012 10:18
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
cis-1,3-Dichloropropene	ND		4.81	ug/Kg	1	12/7/2012 17:15
trans-1,3-Dichloropropene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Diisopropyl Ether	ND		4.81	ug/Kg	1	12/7/2012 17:15
Ethyl Benzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Hexachlorobutadiene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Isopropylbenzene (Cumene)	ND		4.81	ug/Kg	1	12/7/2012 17:15
Methyl iodide	ND		4.81	ug/Kg	1	12/7/2012 17:15
Methylene chloride	ND		19.2	ug/Kg	1	12/7/2012 17:15
Naphthalene	**7.36**		4.81	ug/Kg	1	12/7/2012 17:15
Styrene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Tetrachloroethene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Toluene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Trichloroethene	ND		4.81	ug/Kg	1	12/7/2012 17:15
Trichlorofluoromethane	ND		4.81	ug/Kg	1	12/7/2012 17:15
Vinyl chloride	ND		4.81	ug/Kg	1	12/7/2012 17:15
Xylene (total)	**68.1**		9.62	ug/Kg	1	12/7/2012 17:15
cis-1,2-Dichloroethene	ND		4.81	ug/Kg	1	12/7/2012 17:15
m,p-Xylene	ND		9.62	ug/Kg	1	12/7/2012 17:15
n-Propylbenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
o-Xylene	**68.1**		4.81	ug/Kg	1	12/7/2012 17:15
sec-Butylbenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
tert-Butyl methyl ether (MTBE)	ND		4.81	ug/Kg	1	12/7/2012 17:15
tert-Butylbenzene	ND		4.81	ug/Kg	1	12/7/2012 17:15
trans-1,2-Dichloroethene	ND		4.81	ug/Kg	1	12/7/2012 17:15
trans-1,4-Dichloro-2-butene	ND		24.1	ug/Kg	1	12/7/2012 17:15
Surrogates						
1,2-Dichloroethane-d4	106		55.0-173	%	1	12/7/2012 17:15
4-Bromofluorobenzene	98.0		23.0-141	%	1	12/7/2012 17:15
Toluene d8	104		57.0-134	%	1	12/7/2012 17:15

Batch Information

Analytical Batch: **VMS2772**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX4417**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **12/12/2012 11:44**
Prep Initial Wt./Vol.: **6.71 g**
Prep Extract Vol: **5 mL**

Print Date: 12/13/2012

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Results of **S-18**

Client Sample ID: **S-18**
Client Project ID: **70127335**
Lab Sample ID: 31203948003-D
Lab Project ID: 31203948

Collection Date: 11/30/2012 10:18
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **MADEP VPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C5-C8 Aliphatics	ND		4.27	mg/kg	1	12/11/2012 15:42
C9-C10 Aromatics	ND		4.27	mg/kg	1	12/11/2012 15:42
C9-C12 Aliphatics	**4.66**		4.27	mg/kg	1	12/11/2012 15:42
Surrogates						
FID - 4-Bromofluorobenzene	97.0		70.0-130	%	1	12/11/2012 15:42
PID - 4-Bromofluorobenzene	82.0		70.0-130	%	1	12/11/2012 15:42

Batch Information

Analytical Batch: **VGC2282**
Analytical Method: **MADEP VPH**
Instrument: **GC4**
Analyst: **MDY**

Prep Batch: **VXX4430**
Prep Method: **SW-846 5035 VPH prep**
Prep Date/Time: **12/11/2012 14:34**
Prep Initial Wt./Vol.: **7.56 g**
Prep Extract Vol: **5 mL**

Print Date: 12/13/2012

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Results of **S-18**

Client Sample ID: **S-18**
Client Project ID: **70127335**
Lab Sample ID: 31203948003-E
Lab Project ID: 31203948

Collection Date: 11/30/2012 10:18
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		404	ug/Kg	1	12/11/2012 18:32
1,2-Dichlorobenzene	ND		404	ug/Kg	1	12/11/2012 18:32
1,3-Dichlorobenzene	ND		404	ug/Kg	1	12/11/2012 18:32
1,4-Dichlorobenzene	ND		404	ug/Kg	1	12/11/2012 18:32
2,4,5-Trichlorophenol	ND		404	ug/Kg	1	12/11/2012 18:32
2,4,6-Trichlorophenol	ND		404	ug/Kg	1	12/11/2012 18:32
2,4-Dichlorophenol	ND		404	ug/Kg	1	12/11/2012 18:32
2,4-Dinitrophenol	ND		2020	ug/Kg	1	12/11/2012 18:32
2,4-Dinitrotoluene	ND		404	ug/Kg	1	12/11/2012 18:32
2,6-Dinitrotoluene	ND		404	ug/Kg	1	12/11/2012 18:32
2-Chloronaphthalene	ND		404	ug/Kg	1	12/11/2012 18:32
2-Chlorophenol	ND		404	ug/Kg	1	12/11/2012 18:32
2-Methylnaphthalene	ND		404	ug/Kg	1	12/11/2012 18:32
2-Methylphenol	ND		404	ug/Kg	1	12/11/2012 18:32
2-Nitroaniline	ND		404	ug/Kg	1	12/11/2012 18:32
2-Nitrophenol	ND		404	ug/Kg	1	12/11/2012 18:32
3 and/or 4-Methylphenol	ND		404	ug/Kg	1	12/11/2012 18:32
3,3'-Dichlorobenzidine	ND		807	ug/Kg	1	12/11/2012 18:32
3-Nitroaniline	ND		2020	ug/Kg	1	12/11/2012 18:32
4,6-Dinitro-2-methylphenol	ND		2020	ug/Kg	1	12/11/2012 18:32
4-Chloro-3-methylphenol	ND		404	ug/Kg	1	12/11/2012 18:32
4-Chloroaniline	ND		404	ug/Kg	1	12/11/2012 18:32
4-Chlorophenyl phenyl ether	ND		404	ug/Kg	1	12/11/2012 18:32
Acenaphthene	ND		404	ug/Kg	1	12/11/2012 18:32
Acenaphthylene	ND		404	ug/Kg	1	12/11/2012 18:32
Anthracene	ND		404	ug/Kg	1	12/11/2012 18:32
Benzo(a)anthracene	ND		404	ug/Kg	1	12/11/2012 18:32
Benzo(a)pyrene	ND		404	ug/Kg	1	12/11/2012 18:32
Benzo(b)fluoranthene	ND		404	ug/Kg	1	12/11/2012 18:32
Benzo(g,h,i)perylene	ND		404	ug/Kg	1	12/11/2012 18:32
Benzo(k)fluoranthene	ND		404	ug/Kg	1	12/11/2012 18:32
Benzoic acid	ND		2020	ug/Kg	1	12/11/2012 18:32
Bis(2-Chloroethoxy)methane	ND		404	ug/Kg	1	12/11/2012 18:32
Bis(2-Chloroethyl)ether	ND		404	ug/Kg	1	12/11/2012 18:32
Bis(2-Chloroisopropyl)ether	ND		404	ug/Kg	1	12/11/2012 18:32
Bis(2-Ethylhexyl)phthalate	ND		404	ug/Kg	1	12/11/2012 18:32
4-Bromophenyl phenyl ether	ND		404	ug/Kg	1	12/11/2012 18:32
Butyl benzyl phthalate	ND		404	ug/Kg	1	12/11/2012 18:32
Chrysene	ND		404	ug/Kg	1	12/11/2012 18:32
Di-n-butyl phthalate	ND		404	ug/Kg	1	12/11/2012 18:32
Di-n-octyl phthalate	ND		404	ug/Kg	1	12/11/2012 18:32
Dibenz(a,h)anthracene	ND		404	ug/Kg	1	12/11/2012 18:32
Dibenzofuran	ND		404	ug/Kg	1	12/11/2012 18:32

Print Date: 12/13/2012

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Results of **S-18**

Client Sample ID: **S-18**
Client Project ID: **70127335**
Lab Sample ID: 31203948003-E
Lab Project ID: 31203948

Collection Date: 11/30/2012 10:18
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		404	ug/Kg	1	12/11/2012 18:32
Dimethyl phthalate	ND		404	ug/Kg	1	12/11/2012 18:32
2,4-Dimethylphenol	ND		404	ug/Kg	1	12/11/2012 18:32
Diphenylamine	ND		404	ug/Kg	1	12/11/2012 18:32
Fluoranthene	ND		404	ug/Kg	1	12/11/2012 18:32
Fluorene	ND		404	ug/Kg	1	12/11/2012 18:32
Hexachlorobenzene	ND		2020	ug/Kg	1	12/11/2012 18:32
Hexachlorobutadiene	ND		404	ug/Kg	1	12/11/2012 18:32
Hexachlorocyclopentadiene	ND		807	ug/Kg	1	12/11/2012 18:32
Hexachloroethane	ND		404	ug/Kg	1	12/11/2012 18:32
Indeno(1,2,3-cd)pyrene	ND		404	ug/Kg	1	12/11/2012 18:32
Isophorone	ND		404	ug/Kg	1	12/11/2012 18:32
Naphthalene	ND		404	ug/Kg	1	12/11/2012 18:32
4-Nitroaniline	ND		2020	ug/Kg	1	12/11/2012 18:32
Nitrobenzene	ND		404	ug/Kg	1	12/11/2012 18:32
4-Nitrophenol	ND		2020	ug/Kg	1	12/11/2012 18:32
Pentachlorophenol	ND		2020	ug/Kg	1	12/11/2012 18:32
Phenanthrene	ND		404	ug/Kg	1	12/11/2012 18:32
Phenol	ND		404	ug/Kg	1	12/11/2012 18:32
Pyrene	ND		404	ug/Kg	1	12/11/2012 18:32
n-Nitrosodi-n-propylamine	ND		404	ug/Kg	1	12/11/2012 18:32
Surrogates						
2,4,6-Tribromophenol	88.0		41.0-129	%	1	12/11/2012 18:32
2-Fluorobiphenyl	85.0		48.0-123	%	1	12/11/2012 18:32
2-Fluorophenol	84.0		42.0-123	%	1	12/11/2012 18:32
Nitrobenzene-d5	84.0		46.0-117	%	1	12/11/2012 18:32
Phenol-d6	91.0		48.0-125	%	1	12/11/2012 18:32
Terphenyl-d14	88.0		44.0-140	%	1	12/11/2012 18:32

Batch Information

Analytical Batch: **XMS1766**
Analytical Method: **SW-846 8270D**
Instrument: **MSD6**
Analyst: **CMP**

Prep Batch: **XXX3394**
Prep Method: **SW-846 3541**
Prep Date/Time: **12/11/2012 13:16**
Prep Initial Wt./Vol.: **32.05 g**
Prep Extract Vol: **10 mL**

Print Date: 12/13/2012

N.C. Certification # 481

Results of **S-18**

Client Sample ID: **S-18**
Client Project ID: **70127335**
Lab Sample ID: 31203948003-E
Lab Project ID: 31203948

Collection Date: 11/30/2012 10:18
Received Date: 12/01/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 77.40

Results by **MADEP EPH**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
C11-C22 Aromatics	ND		16.2	mg/kg	1	12/13/2012 0:06
C19-C36 Aliphatics	ND		8.35	mg/kg	1	12/12/2012 23:37
C9-C18 Aliphatics	**24.9**		7.23	mg/kg	1	12/12/2012 23:37
Surrogates						
2-Bromonaphthalene	82.3		40.0-140	%	1	12/13/2012 0:06
2-Fluorobiphenyl	82.0		40.0-140	%	1	12/13/2012 0:06
n-Tricosane	111		40.0-140	%	1	12/12/2012 23:37
o-Terphenyl	81.0		40.0-140	%	1	12/13/2012 0:06

Batch Information

Analytical Batch: **XGC2788**
Analytical Method: **MADEP EPH**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3393**
Prep Method: **SW-846 3541/8015 EPH**
Prep Date/Time: **12/11/2012 13:13**
Prep Initial Wt./Vol.: **12.43 g**
Prep Extract Vol: **10 mL**

Print Date: 12/13/2012

N.C. Certification # 481

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SGS North America Inc.

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- Maryland
- New York
- Ohio

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3120348

105968

(1)

CLIENT: Terracon Consultants

CONTACT: Thomas Perdue PHONE NO:(919) 873-2211

PROJECT: 10127335 SITE/PWSID# :

REPORTS TO:

taperdue@terracon.com FAX NO.:( )

INVOICE TO: same

QUOTE #:

P.O. NUMBER: WBS element: 35781.12

SGS Reference: ~~3120388~~ 12/7/12

PAGE 1 OF 3

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used	Analysis Required (3) DRO	GRO	SVOC	VOC	VPH	EPH				REMARKS
	S-1	11/28/12	9:49	soil	3	G		X	X								
	S-2		10:15		3			X	X								
	S-3		10:48		3			X	X								
	S-4		11:20		3			X	X								
	S-5		11:45		5			X	X	X	X	X	X				Hold SVOC, VOC, EPH, VPH
	S-6		12:00		3			X	X								
	S-7		13:45		3			X	X								
	S-8		14:30		3			X	X								
3120 3892-009	S-9		15:00		5			X	X	X	X	X	X				Hold SVOC, VOC, EPH, VPH
	S-10		16:07		3			X	X								

(5)

	Date	Time	
Collected/Relinquished By:(1)	11/30	10100	Received By:
Relinquished By: (2)	11/30/12	1600	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	12-1-12	1030	Received By:

(4)

Shipping Carrier:

Shipping Ticket No: FedEx.

Samples Received Cold? (Circle) YES NO

Temperature°C: 5.2, 1.9, 4.8

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Special Instructions:

Requested Turnarpund Time:

☒ RUSH 12/5/12 (Date Needed) ☐ STD

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

White - Retained by Lab
Pink - Retained by Client

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- Maryland
- New York
- Ohio

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105967

(1)
CLIENT: Terracon Consultants
CONTACT: Thomas Perdue PHONE NO:(919) 873-2211
PROJECT: 7335 SITE/PWSID#:
REPORTS TO: taperdue@terracon.com FAX NO.:( )
INVOICE TO: Same QUOTE #:
P.O. NUMBER:

SGS Reference: ~~3120392~~ 12/7/12

PAGE 2 OF 3

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used	DRO	GRO	SVOC	VOC	EPH	VPH				REMARKS
	S-11	11/29/12	16:21	Soil	3	G		X	X								
	S-12	11/29/12	16:30		3			X	X								
	S-13	11/29/12	17:00		3			X	X								
	S-14	11/30/12	8:50		3			X	X								
3120392-015	S-15		9:22		5			X	X	X	X	X	X				Hold SVOC, VOC, EPH, VPH
	S-16		9:30		3			X	X								
	S-17																
3120392-017	S-18		10:18		5			X	X	X	X	X	X				Hold SVOC, VOC, EPH, VPH

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	11/30/12	10:00	
Relinquished By: (2)	Date	Time	Received By:
	11/30/12	1600	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:
	12-1-12	1030	

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 5.2, 1.9, 4.8
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time: ☒ RUSH 12/5/12 Date Needed ☐ STD

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

White - Retained by Lab
Pink - Retained by Client

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- New York
- Ohio

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3120394B

105505

(1)
CLIENT: Terracon Consultants
CONTACT: Thomas Perdue PHONE NO:(919) 873-2211
PROJECT: 7335 SITE/PWSID# :
REPORTS TO: taperdue@terracon.com FAX NO.:( )
INVOICE TO: Same QUOTE #:
P.O. NUMBER:

SGS Reference: 3120392 12/7/12

PAGE 3 OF 3

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	(3) Analysis Required: VOC	SVOC	Preservatives Used	REMARKS
	GW-1	11/30/12	11:30	GW	5	G	X	X		
	GW-2	↓	12:00	↓	5	↓	X	X		
	GW-3	↓	12:30	↓	3	↓	X			

(5)

	Date	Time	
Collected/Relinquished By:(1)	11/30/12	10:00	Received By:
Relinquished By: (2)	11/30/12	1600	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	12-1-12	1030	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 5.2, 1.9, 4.8
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time: ☐ RUSH _____ Date Needed ☐ STD

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

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-Terracon** Work Order No.: **31203948**

1. _X_ Shipped
   ___ Hand Delivered

2. _X_ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms

3. ___ Custody Tape on Container
   _X_ No Custody Tape

4. _X_ Samples Intact
   ___ Samples Broken / Leaking

5. _X_ Chilled on Receipt Actual Temp.(s) in °C: 5.2, 1.9, 4.8
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications

6. _X_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)

8. _X_ Received Within Holding Time
   ___ Not Received Within Holding Time

9. _X_ No Discrepancies Noted
   ___ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*

10. ___ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Notes:

Comments: Relog of 31203892.

Inspected and Logged in by: JJ

Date: Fri-12/7/12 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met.