PRELIMINARY SITE ASSESSMENT
FOR
PARCEL #71 HARRY T. PARKER PROPERTY

STATE PROJECT: R-2303A
WBS ELEMENT: 34416.1.1
NC 24 FROM WEST OF SR 1006 (MAXWELL RD./CLINTON RD.) IN CUMBERLAND COUNTY TO SR 1853 (JOHN NUNNERY RD.)

PREPARED FOR:

NCDOT GEOTECHNICAL ENGINEERING UNIT
GEOENVIRONMENTAL SECTION
1589 MSC
RALEIGH, NORTH CAROLINA 27699-1589

JANUARY 7, 2011
REVISED JANUARY 12, 2011

PREPARED BY:

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CATLIN PROJECT NO. 210124

CORPORATE GEOLOGY LICENSE CERTIFICATION NO. C-118
CORPORATE LICENSURE NO. FOR ENGINEERING SERVICES C-0585

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Preliminary Site Assessment

for

Parcel #71 Harry T. Parker Property

State Project: R-2303A
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January 7, 2011
Revised January 12, 2011

1.0 PURPOSE OF INVESTIGATION AND DESCRIPTION

CATLIN Engineers and Scientists (CATLIN) were retained by the North Carolina Department of Transportation (NCDOT) Geotechnical Engineering Unit to provide a field investigation concluding with a Preliminary Site Assessment (PSA) for the above referenced properties. In response to a Request for Technical and Cost Proposal (RFP) dated October 22, 2010, and subsequent site reconnaissance and discussions with NCDOT GeoEnvironmental Project Manager Mr. Ethan Caldwell, PE, LG, CATLIN submitted a proposal for conducting an investigation at nine (9) parcels near Stedman, North Carolina. Figure 1 illustrates the general location and the State Project is illustrated on Figure 2.

This report documents our activities and findings at Parcel #71, Harry T. Parker Property. The following specific parcel information was provided by NCDOT:

Parcel #71 Harry T. Parker Property
Computer Sale & Rental
(Parker Plaza)
6765 Clinton Rd.
Stedman, NC 28391
Plan Sheet 17
Facility ID: 0-011671

Property Owner:
Harry T. Parker
6765 Clinton Rd.
Stedman, NC 28391

UST Owner:
Enco Oil Inc.
PO Box 397
Clinton, NC 28329

Currently this site is a retail store front. Historically the site operated as a gas station. The site is located on the north site of Clinton Road approximately 170 feet east of Blawell Street. According to NCDENR's UST Section registry three (3) USTs were removed in 1998. No groundwater incidents have been identified associated with this property. The site is illustrated on Figure 3.

According to the RFP:

> Acquisition of the right-of-way is necessary for NC 24 roadway construction (above referenced State Project R-2303A) and specifically at the above referenced parcel. A site investigation is necessary to determine the presence of USTs and/or contaminated soil in the proposed right-of-way and/or easement.

The work scope as requested includes:

- Notify property owners/occupants of intent as applicable.
- Locate all USTs and determine approximate size and contents (if any). Locate all USTs and determine approximate size and contents (if any).
- Locate monitoring wells that may be impacted during construction.
- Determine if contaminated soils are present.
- If contamination is evident, estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a site map.
- Prepare and submit one report of findings including field activities, findings, and recommendations for each site in triplicate and electronically to the NCDOT GeoEnvironmental Section.

In addition to the RFP, NCDOT provided plan sheets associated with the roadway construction. CATLIN and NCDOT personnel agreed to approximate proposed boring and sample locations within the right-of-way and/or easement for soil sample collection and total petroleum hydrocarbons (TPH) diesel and gasoline range organics (DRO and GRO) laboratory analysis during a October 26, 2010 site reconnaissance meeting.

2.0 METHODS

Approximate proposed borings were indicated in the field with NCDOT personnel during initial site reconnaissance and before final Workplan submittal. Per NCDOT request, borings (soil samples) were located near known or suspect UST systems and proposed drainage features (as indicated on NCDOT provided plan sheets).

CATLIN coordinated geophysical activities concurrently with soil boring and sampling. Final sampling activities were completed after the geophysical survey. CATLIN's field activities concluded on November 22, 2010.

2.1 FIELD METHODS

All field work was conducted in general accordance with state and federal guidelines and industry standards.

Underground utility locating was coordinated by CATLIN personnel. The North Carolina One Call Center (NC-1-Call) was contacted for underground utility location. Proposed boring locations were marked before NC-1-Call personnel were on-site. The areas around the proposed boring locations were checked and found to be clear of any underground utilities or alternate locations were indicated by NC-1-Call personnel.

CATLIN personnel gathered subsurface soil data at the site by Direct Push Technology (DPT) boring advancement using an AMS PowerProbe™ 9600D (PowerProbe). The borings were advanced to depth by static force and a 90-pound hydraulic percussion hammer. Two and one-quarter inch diameter by four-foot length steel is used as casing. Soil samples were continuously collected in four-foot long and one and one-half inch diameter clear liners. Liners are removed from the casing and then cut in half longitudinally to allow for visual/manual classification utilizing the Unified Soil Classification System (USCS). Borings were identified by the parcel number (as indicated by NCDOT) followed by "DPT" and consecutive numbers starting with "01" at each parcel (example: 71DPT-01). Soil samples were collected continuously from near the surface to boring termination. Soils were removed from the liners in two-foot intervals and placed in sealable polyethylene bags for organic vapor analysis (OVA) headspace screening utilizing a photo ionization detector (PID). The USCS and OVA/PID information was recorded on field logs and has been transferred to the Boring Logs provided in Appendix A.

Soil samples were collected for laboratory analysis above the water table using roughly a one-foot interval of the two-foot sample revealing the highest OVA/PID reading. Sample identification was based on the boring identification followed by sample depth in parentheses (example: 71DPT-01 (4-5').

New disposable nitrile gloves were worn during sampling activities. All samples were placed into laboratory provided glassware and packed on ice in an insulated cooler for transportation to the laboratory. Sample integrity was maintained by following proper Chain of Custody procedures. A copy of the Chain of Custody is provided following the analytical report in Appendix B.

Boreholes were abandoned to just below the surface using three-eighth inch bentonite chips. Bentonite and water were poured into the borehole simultaneously to facilitate hydration. Borings located in asphalt or gravel were topped with asphalt cold patch. Final borehole and sample locations were surveyed utilizing a Trimble® GPS survey instrument.

2.2 LABORATORY TESTING

Following boring advancement, selected soils were placed in the appropriately labeled glassware. In an attempt to provide information regarding petroleum impact to soils and groundwater with reasonable analytical expense, soil samples were analyzed for TPH DRO and GRO by Environmental Protection Agency (EPA) Methods 5030 and 3550 with analysis by modified 8015.

A total of 10 soil samples were submitted to SGS North America Inc. (NC Certification # 481). Chain of Custody documentation is included in Appendix B.

3.0 RESULTS

In the event a cut is required for roadway construction or utility installation, any soil samples revealing detectable TPH concentrations will be considered petroleum impacted for handling and disposal purposes. The complete laboratory analytical reports are provided in Appendix B. Results of Schnabel's geophysical investigation including site photographs were submitted directly to NCDOT and a copy is provided in Appendix C. Schnabel's investigation results will be generally discussed in the following section.

No geophysical anomalies indicative of a potential UST were revealed. Photographs of the site including the former dispenser island and canopy location are included in the geophysical report provided in Appendix C.

Ten (10) borings were advanced for soil sample collection and one sample was collected from each boring for laboratory analysis. Borings were advanced near the suspected former UST(s) and dispenser island/canopy. No proposed drainage features were identified on the NCDOT provided plan sheets. Boring/sample locations are illustrated on Figure 3.

Borings were terminated at eight (8) feet BLS except for the boring 71DPT-03, which was advanced to 12 feet BLS. A mix of clays and sands were encountered. Saturated soils were encountered in the 71DPT-03 boring at nine (9) feet BLS. Boring logs including USCS classification and OVA/PID screening results are provided in Appendix A. Soil samples were collected for laboratory analysis from within the two (2) foot interval with the highest OVA/PID reading, however, all OVA/PID screening readings were less than three (3) parts per million (PPM). No TPH DRO or TPH GRO concentrations above the laboratory reporting limit were detected in any of the soil samples. Summarized analytical results are provided on Table 1 and Figure 3.

4.0 SUMMARY AND RECOMMENDATIONS

A preliminary site assessment was conducted at the subject site as requested by NCDOT. Right-of-Way acquisition for NC 24 roadway construction is proposed at the site. In the event a cut is required for roadway construction or utility installation, any soil samples revealing detectable TPH concentrations will be considered petroleum impacted for handling and disposal purposes. No geophysical anomalies indicative of a potential UST were revealed. No proposed drainage features were identified on the NCDOT provided plan sheets.

Ten (10) borings were advanced for soil sample collection and one sample was collected from each boring for laboratory analysis. No TPH DRO or TPH GRO concentrations above the laboratory reporting limit were detected in any of the soil samples. No recommendations are proposed for this site.

5.0 LIMITATIONS

This report is based on the agreed work scope and a review of available data from limited sampling. It is possible that this investigation may have failed to reveal the presence of contamination in the project area where such contamination may exist. Although CATLIN has used accepted methods appropriate for soil and groundwater sampling, CATLIN cannot guarantee that additional soil and/or groundwater contamination does not exist.

6.0 SIGNATURES

Benjamin J. Ashba
Project Manager

NORTH CAROLINA LICENSED SEAL 1052 GEOLOGIST GEORGE RICHARD GARRETT

1/14/11

G. Richard Garrett, P.G.
Senior Project Manager

TABLES

TABLE 1
SUMMARY OF SOIL LABORATORY RESULTS
EPA METHOD 8015

Parcel #71
Harry T. Parker Property
Parker Plaza
6765 Clinton Road
Facility ID: 0-011671

Sample ID	Contaminant of Concern → / Date Collected	Diesel Range Organics	Gasoline Range Organics
71 DPT-01 (4-5')	11/16/2010	<7.24	<4.70
71 DPT-02 (6-7')	11/16/2010	<6.94	<5.48
71 DPT-03 (6-7')	11/16/2010	<7.44	<5.84
71 DPT-04 (6-8')	11/16/2010	<6.47	<6.62
71 DPT-05 (4-6')	11/16/2010	<7.07	<5.82
71 DPT-06 (3-4')	11/16/2010	<6.81	<4.61
71 DPT-07 (5-6')	11/16/2010	<7.46	<4.71
71 DPT-08 (7-8')	11/16/2010	<7.44	<5.10
71 DPT-09 (5-6')	11/16/2010	<7.02	<4.69
71 DPT-10 (3-4')	11/16/2010	<6.62	<5.23

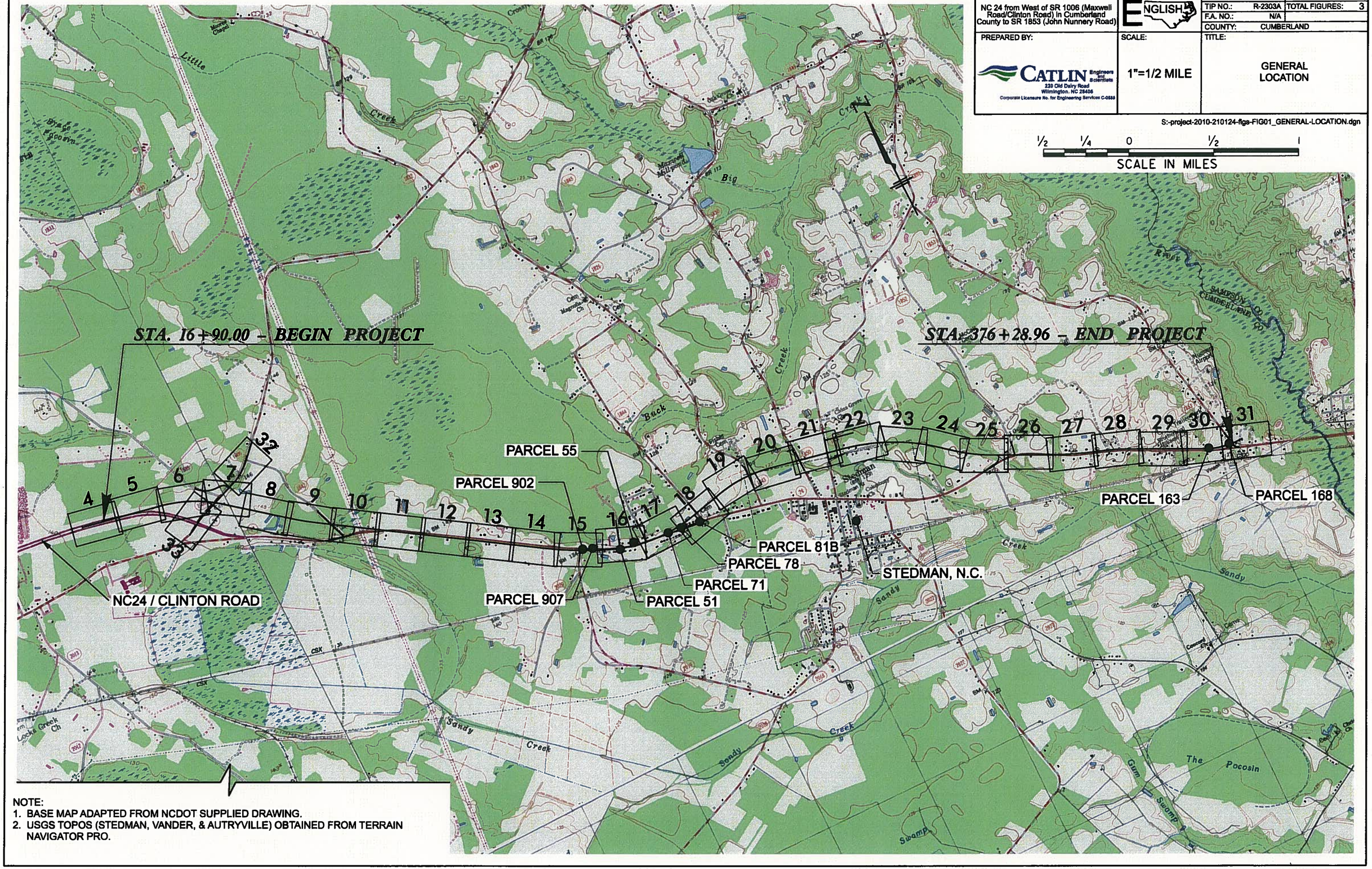
All results in milligrams per kilogram (mg/kg).
Sample depth in feet provide in parenthesis ( ) as part of the Sample ID.
< = Less than reporting limit

FIGURES

DESCRIPTION: NC 24 from West of SR 1006 (Maxwell Road/Clinton Road) in Cumberland County to SR 1853 (John Nunnery Road)	ENGLISH	WBS ELEM.: 34416.1.1	FIGURE NO. 1
		TIP NO.: R-2303A	TOTAL FIGURES: 3
		F.A. NO.: N/A	
		COUNTY: CUMBERLAND	
PREPARED BY: CATLIN Engineers and Scientists, 220 Old Dairy Road, Wilmington, NC 28405, Corporate Licensure No. for Engineering Services C-0585	SCALE: 1"=1/2 MILE	TITLE: GENERAL LOCATION	

S:-project-2010-210124-figs-FIG01_GENERAL-LOCATION.dgn

½ ¼ 0 ½ 1
SCALE IN MILES



NOTE:
1. BASE MAP ADAPTED FROM NCDOT SUPPLIED DRAWING.
2. USGS TOPOS (STEDMAN, VANDER, & AUTRYVILLE) OBTAINED FROM TERRAIN NAVIGATOR PRO.

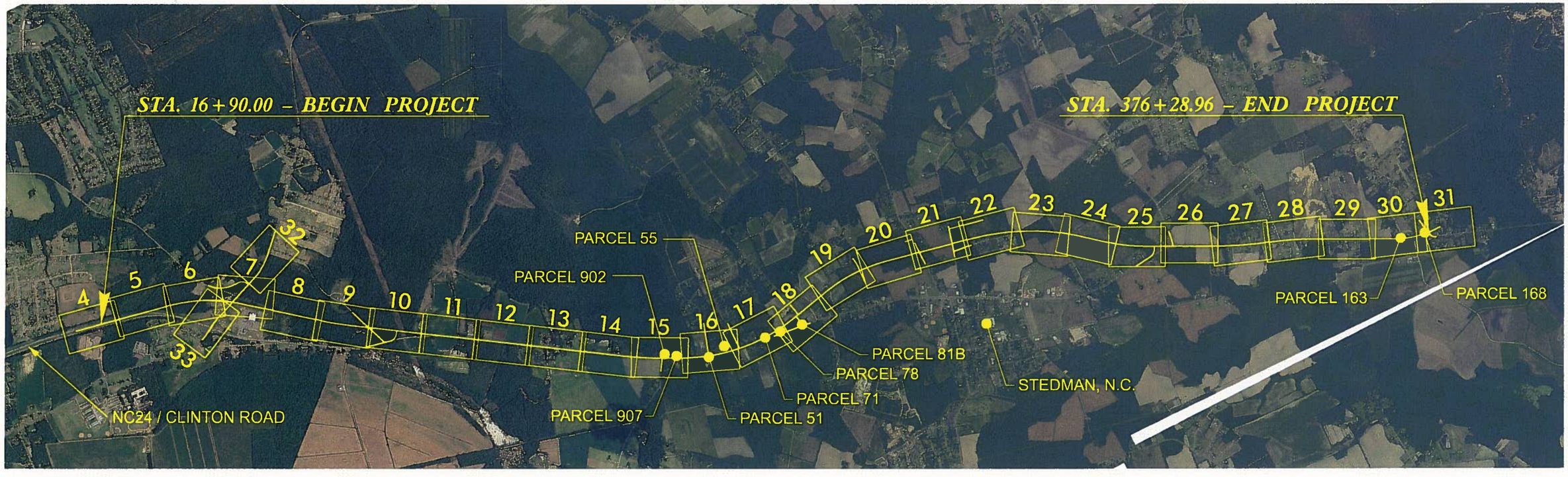
DESCRIPTION: NC 24 from West of SR 1006 (Maxwell Road/Clinton Road) in Cumberland County to SR 1853 (John Nunnery Road)	ENGLISH	WBS ELEM.: 34416.1.1	FIGURE NO. 2
		TIP NO.: R-2303A	TOTAL FIGURES: 3
		F.A. NO.: N/A	
		COUNTY: CUMBERLAND	
PREPARED BY: CATLIN Engineers and Scientists, 220 Old Dairy Road, Wilmington, NC 28405, Corporate Licensure No. for Engineering Services C-0658	SCALE: 1"=1/2 MILE	TITLE: STATE PROJECT R-2303A STA 16+90.00 TO 376+28.96	

S:-project-2010-210124-figs-FIG02_AERIAL-LAYOUT.dgn

N

½ ¼ 0 ½ 1

SCALE IN MILES



NOTE:
1. BASE MAP ADAPTED FROM NCDOT SUPPLIED DRAWING.
2. AERIAL PHOTOS OBTAINED FROM TERRAIN NAVIGATOR PRO.

DESCRIPTION: NC 24 from West of SR 1008 (Maxwell Road/Clinton Road) In Cumberland County to SR 1853 (John Nunnery Road)	ENGLISH	WBS ELEM.: 34416.1.1	FIGURE NO. 3
		TIP NO.: R-2303A	TOTAL FIGURES: 3
		F.A. NO.: N/A	
		COUNTY: CUMBERLAND	
PREPARED BY: CATLIN Engineers and Scientists, 220 Old Dairy Road, Wilmington, NC 28405, Corporate Licensure No. for Engineering Services C-0658	SCALE: 1"=20'	TITLE: PARCEL #71 HARRY T. PARKER PROPERTY	

20 10 0 20
SCALE IN FEET

S:-project-2010-210124-figs-parcel 71_1.dgn

SUMMARY OF SOIL LABORATORY RESULTS
EPA METHOD 8015

Sample ID	Contaminant of Concern → Date Collected	Diesel Range Organics	Gasoline Range Organics
71 DPT-01 (4-5')	11/16/2010	<7.24	<4.70
71 DPT-02 (6-7')	11/16/2010	<6.94	<5.48
71 DPT-03 (6-7')	11/16/2010	<7.44	<5.84
71 DPT-04 (6-8')	11/16/2010	<6.47	<6.62
71 DPT-05 (4-6')	11/16/2010	<7.07	<5.82
71 DPT-06 (3-4')	11/16/2010	<6.81	<4.61
71 DPT-07 (5-6')	11/16/2010	<7.46	<4.71
71 DPT-08 (7-8')	11/16/2010	<7.44	<5.10
71 DPT-09 (5-6')	11/16/2010	<7.02	<4.69
71 DPT-10 (3-4')	11/16/2010	<6.62	<5.23

All results in milligrams per kilogram (mg/kg).
Sample depth in feet provide in parenthesis ( ) as part of the Sample ID.
< = Less than reporting limit

+00 100' BEGIN FULL C/A
BEG. FENCE
142
141
+50 100' 125'
ACCESS POINT
C A
HTR
DK
C
F
F
NAD 83/95
ISBLK BUS
PARKER'S PLAZA 6765 CLINTON RD.
+00
+51.44
+35.35 296.43'
71DPT-03
FORMER UST BASIN AREA
BST
71
HARRTY T. PARKER DB 5054 PG 73
71DPT-04
71DPT-02
71DPT-01
Sta. 195+00.00
42" CSP
71DPT-06
MTL CANOPY
71DPT-05
140
71DPT-09
71DPT-08
71DPT-10
71DPT-07
BST
AIR RELEASE VALVE
15" CONC
SS
143
W/LT
BST
DI
129
TC
FSS
TH #20
15" CONC
NC 24 / CLINTON RD.
REMOVE
12' DR
12' DR
TH #19
REMOVE
TC
SS
FSS

NOTE:
1. BASE MAP ADAPTED FROM NCDOT SUPPLIED DRAWING.

LEGEND

NEW	DESCRIPTION
◐	SOIL BORING/SAMPLE

APPENDICES

APPENDIX A

BORING LOGS

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.:	210124	**STATE:**	NC	**COUNTY:**	Cumberland	**LOCATION:**	Stedman
PROJECT NAME:	NC 24 from West of SR 1006 in Cumberland County to SR 1853			**LOGGED BY:**	Ben Ashba	**BORING ID:**	71DPT-01
				DRILLER:	Michael D. Mason		
NORTHING:	461,465.00	**EASTING:**	2,086,629.00	**CREW:**			
SYSTEM:	NCSP NAD 83 (USft)	**BORING LOCATION:**	East of former UST basin.			**LAND ELEV.:**	NM
DRILL MACHINE:	Power Probe	**METHOD:**	Direct Push	**0 HOUR DTW:**	Dry	**BORING DEPTH:**	8.0
START DATE:	11/16/10	**FINISH DATE:**	11/16/10	**24 HOUR DTW:**	N/A	**ROCK DEPTH:**	--

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲1.8		GW		0.2	Asphalt	
							0.5	Gravel Sub-base	
2.0	DIRECT PUSH		▲1.0		SC			Clayey, f. SAND. Dark brown.	
4.0				71 DPT-01 (4-5)					
5.0	DIRECT PUSH		▲2.9				5.0		
					CL			F. Sandy CLAY. Brown. Damp from 5 to 5.5ft.	
6.0							6.5		
	DIRECT PUSH		▲1.4		CH			CLAY. High plast. Fat. Grayish brown. Dry.	
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO.LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba **DRILLER:** Michael D. Mason	**BORING ID:** 71DPT-02
NORTHING: 461,462.00	**EASTING:** 2,086,613.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** Center of former UST basin.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 7.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.5		GW		0.2	Asphalt	
							0.5	Gravel Sub-base	
2.0	DIRECT PUSH		▲0.2		SC			Clayey, f. to med. SAND w/tr. cse. Orangish brown.	
4.0	DIRECT PUSH		▲0.1						
6.0	DIRECT PUSH		▲0.5	71 DPT-02 (6-7)	CH		6.0 6.2	CLAY lense. High plast. Gray.	
					SC		7.0	Clayey, f. to med. SAND w/tr. gravel. Light orangish brown. Refusal @ 7ft.	
7.0								Boring Terminated at Depth 7.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba **DRILLER:** Michael D. Mason	**BORING ID:** 71DPT-03
NORTHING: 461,476.00	**EASTING:** 2,086,613.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** N. of former UST basin near NW corner of bld.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 12.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT (0.5 0.5 0.5 0.5)	MOI.	PID RESULTS (ppm) (0 1000 2000 3000 4000)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.4		GW		0.2	Asphalt	
							0.5	Gravel Sub-base	
2.0	DIRECT PUSH		▲0.4		SC/ SM			Silty/Clayey, f. SAND. Dark gray/black grading to grayish brown.	
4.0	DIRECT PUSH		▲1.0				5.0		
6.0	DIRECT PUSH		▲1.9	71 DPT-03 (6-7)	CH			V.f. Sandy CLAY. Sand decreases w/depth. High plast. Lt. tan and gray. Wet @ 9ft.	
8.0	DIRECT PUSH		▲0.9						
10.0	DIRECT PUSH		▲0.8				11.0		
					SP			F. SAND. Poorly graded. Varying browns.	
12.0							12.0	Boring Terminated at Depth 12.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba	**BORING ID:** 71DPT-04
		DRILLER: Michael D. Mason	
NORTHING: 461,464.00	**EASTING:** 2,086,597.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** West of former UST basin.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 8.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.8		GW		0.2	Asphalt	
							0.5	Gravel Sub-base	
2.0	DIRECT PUSH		▲0.3		SC			Clayey, v.f. to med. SAND. Brown.	
4.0	DIRECT PUSH		▲0.3						
6.0	DIRECT PUSH		▲3.6	71 DPT-04 (6-8)	SP		6.0	Med. SAND. Poorly graded. Light brown.	
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba	**BORING ID:** 71DPT-05
		DRILLER: Michael D. Mason	
NORTHING: 461,453.00	**EASTING:** 2,086,613.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** South of former UST basin.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 8.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.2				0.2	Asphalt	
					GW	P	0.5	Gravel Sub-base	
2.0	DIRECT PUSH		▲1.0		SC			Clayey, f. SAND. Orangish brown interlayered w/dark brown.	
					GW	P	3.0		
4.0	DIRECT PUSH		▲2.4	71 DPT-05 (4-6)	SC		3.2	Concrete rubble (fill from UST excavation)	
								Clayey, f. SAND. Orangish brown.	
6.0	DIRECT PUSH		▲0.5		CL/ CH		5.0	V.f. Sandy CLAY. Med. plast. w/some High Plast.	
					SP/ CL		6.0	F. SAND w/thin clay lenses from 6-7 feet. Varying browns.	
8.0					SP		7.0		
							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland		**LOCATION:** Stedman	
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba		**BORING ID:** 71DPT-06	
		DRILLER: Michael D. Mason			
NORTHING: 461,452.00	**EASTING:** 2,086,579.00	**CREW:**			
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** North side of canopy.			**LAND ELEV.:** NM	
DRILL MACHINE: Power Probe	**METHOD:** Direct Push		**0 HOUR DTW:** Dry	**BORING DEPTH:** 8.0	
START DATE: 11/16/10	**FINISH DATE:** 11/16/10		**24 HOUR DTW:** N/A	**ROCK DEPTH:** --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲1.3		GW		0.2	Asphalt	
							0.5	Gravel Sub-base	
2.0									
3.0	DIRECT PUSH		▲2.5	71 DPT-06 (3-4)	SC			Clayey, f. SAND. Interlayered lenses (~2in.) of black, dark gray, and orangish brown grading to yellowish brown.	
4.0	DIRECT PUSH		▲0.4				5.0		
6.0	DIRECT PUSH		▲1.0		CL/ CH			Sandy CLAY w/high plast. to CLAY. Gray.	
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba	**BORING ID:** 71DPT-07
		DRILLER: Michael D. Mason	
NORTHING: 461,426.00	**EASTING:** 2,086,575.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** South side of canopy.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 8.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.0		GW		0.5	Gravel Fill	
2.0	DIRECT PUSH		▲0.0		SC/ SM		3.0	Silty/Clayey, f. SAND. Varying browns.	
4.0	DIRECT PUSH		▲0.2	71 DPT-07 (5-6)	SP		4.0	Med. SAND. Poorly graded.	
5.0					SC		5.0	Clayey, f. SAND.	
6.0	DIRECT PUSH		▲0.1		CL		6.0	Sandy CLAY. Med. plast. Brown.	
8.0					CH		8.0	CLAY. High plast. Grayish brown.	
								Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 210124_71_NC24-PARKER GP.I CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba **DRILLER:** Michael D. Mason	**BORING ID:** 71DPT-08
NORTHING: 461,439.00	**EASTING:** 2,086,577.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** Middle of canopy.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 8.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.5				0.2	Asphalt	
					GW		0.5	Gravel Sub-base	
					SP			Med. SAND. Poorly graded. Light orangish brown.	
2.0	DIRECT PUSH		▲0.6				3.0		
					SC			Clayey, f. SAND. Brown.	
4.0	DIRECT PUSH		▲0.7				4.0		
					CL			Sandy CLAY. Med. plast.	
6.0	DIRECT PUSH		▲1.2	71 DPT-08 (7-8)			6.0		
7.0					CH			CLAY. High plast. Gray.	
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 210124 Z1 NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.:	210124	**STATE:**	NC	**COUNTY:**	Cumberland	**LOCATION:**	Stedman
PROJECT NAME:	NC 24 from West of SR 1006 in Cumberland County to SR 1853			**LOGGED BY:**	Ben Ashba	**BORING ID:**	71DPT-09
				DRILLER:	Michael D. Mason		
NORTHING:	461,441.00	**EASTING:**	2,086,564.00	**CREW:**			
SYSTEM:	NCSP NAD 83 (USft)	**BORING LOCATION:**	West side of canopy.			**LAND ELEV.:**	NM
DRILL MACHINE:	Power Probe	**METHOD:**	Direct Push	**0 HOUR DTW:**	Dry	**BORING DEPTH:**	8.0
START DATE:	11/16/10	**FINISH DATE:**	11/16/10	**24 HOUR DTW:**	N/A	**ROCK DEPTH:**	---

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.4		GW		0.2	Asphalt	
							0.5	Gravel Sub-base	
2.0	DIRECT PUSH		▲0.1		SC			Clayey, v.f. to f. SAND. Light grayish brown.	
4.0									
5.0	DIRECT PUSH		▲0.8	71 DPT-09 (5-6)			5.0		
6.0					CL			Sandy CLAY. Med. plast.	
	DIRECT PUSH		▲0.3				7.0		
					CH			CLAY. High plast. Light gray. Dry.	
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC
WBS Element: 34416.1.1
State Project: R-2303A

PROJECT NO.: 210124	**STATE:** NC	**COUNTY:** Cumberland	**LOCATION:** Stedman
PROJECT NAME: NC 24 from West of SR 1006 in Cumberland County to SR 1853		**LOGGED BY:** Ben Ashba **DRILLER:** Michael D. Mason	**BORING ID:** 71DPT-10
NORTHING: 461,437.00	**EASTING:** 2,086,590.00	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:** East side of canopy.		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:** Dry	**BORING DEPTH:** 8.0
START DATE: 11/16/10	**FINISH DATE:** 11/16/10	**24 HOUR DTW:** N/A	**ROCK DEPTH:** --

DEPTH	BLOW COUNT (0.5 0.5 0.5 0.5)	MOI.	PID RESULTS (ppm)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
			0 1000 2000 3000 4000				0.0	LAND SURFACE	
0.0	DIRECT PUSH		▲0.2				0.2	Asphalt	
					GW		0.5	Gravel Sub-base	
2.0					SC/SM			Silty/Clayey, v.f. to f. SAND. Dark brown grading to light brown. Clay content decreases w/depth.	
3.0	DIRECT PUSH		▲1.0	71 DPT-10 (3-4)			3.5		
4.0					SP		4.5	F. SAND. Poorly graded. Light brown to light tan.	
	DIRECT PUSH		▲0.4		SC		5.0	Clayey, f. SAND.	
					CL		5.5	Sandy CLAY.	
6.0	DIRECT PUSH		▲0.3		CH			CLAY. High plast. Gray.	
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 210124_71_NC24-PARKER.GPJ CATLIN.GDT 12/28/10

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

SGS

Ben Ashba
Richard Catlin & Associates
P.O. Box 10279
Wilmington, NC 28404-0279

Report Number: G128-2619

Client Project: NCDOT Stedman PSAs

Dear Ben Ashba,

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

If there are any questions about the report or services performed during this project, please call Barbara Hager 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.

Barbara Hager 12/2/10
Project Manager Date
Barbara Hager

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

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

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

UJ = Target analytes with recoveries that are 10% < %R < LCL; # of MEs are allowable and compounds are not detected in the sample.

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

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

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

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

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:
1) Metals and mercury samples are digested with a hot block; see the standard operating procedure document for details.
2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.021808.4

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-01 (4-5')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-24A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 11:25
Date Received: 11/19/2010
Matrix: Soil
Solids 85.74

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.70	mg/Kg	1	11/23/10 16:43

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	101.0	101.0		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.45 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-02 (6-7')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-25A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 11:45
Date Received: 11/19/2010
Matrix: Soil
Solids 90.70

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.48	mg/Kg	1	11/23/10 17:10

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	97.8	97.8		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.04 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-03 (6-7')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-26A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 12:15
Date Received: 11/19/2010
Matrix: Soil
Solids 82.84

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.84	mg/Kg	1	11/23/10 17:37

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	98.1	98.1		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.2 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-04 (6-8')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-27A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 12:40
Date Received: 11/19/2010
Matrix: Soil
Solids 96.39

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.62	mg/Kg	1	11/23/10 18:04

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	92.6	92.6		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 4.7 g
Final Volume: 5 mL

Analyst: _____

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-05 (4-6')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-28A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 13:00
Date Received: 11/19/2010
Matrix: Soil
Solids 81.62

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.82	mg/Kg	1	11/23/10 18:31

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	94.2	94.2		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.31 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-06 (3-4')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-29A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 13:15
Date Received: 11/19/2010
Matrix: Soil
Solids 90.87

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.61	mg/Kg	1	11/23/10 18:58

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	95.7	95.7		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.16 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-07 (5-6')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-30A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 14:00
Date Received: 11/19/2010
Matrix: Soil
Solids 84.40

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.71	mg/Kg	1	11/23/10 19:25

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	97.8	97.8		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.55 g
Final Volume: 5 mL

Analyst: LMC

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-08 (7-8')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-31A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 14:20
Date Received: 11/19/2010
Matrix: Soil
Solids 82.81

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.10	mg/Kg	1	11/23/10 19:51

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	96.5	96.5		70-130

Comments:

Batch Information

Analytical Batch: VP112310
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.1 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-09 (5-6')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-32A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 14:40
Date Received: 11/19/2010
Matrix: Soil
Solids 86.13

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.69	mg/Kg	1	11/25/10 07:38

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	95.2	95.2		70-130

Comments:

Batch Information

Analytical Batch: VP112410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 7.42 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-10 (3-4')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-33A
Lab Project ID: G128-2619
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/16/2010 15:00
Date Received: 11/19/2010
Matrix: Soil
Solids 92.70

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.23	mg/Kg	1	11/25/10 08:05

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	93.9	93.9		70-130

Comments:

Batch Information

Analytical Batch: VP112410
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.19 g
Final Volume: 5 mL

Analyst: _____

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-01 (4-5')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-24D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 11:25
Date Received: 11/19/2010
Matrix: Soil
Solids 85.74
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.24	mg/Kg	1	11/23/10 16:26

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.6	79

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 32.22 G
Prep Final Vol: 10 mL

Analyst: FL

NC Certification #481

Reviewed By:

N.C. Certification #481

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-02 (6-7')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-25D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 11:45
Date Received: 11/19/2010
Matrix: Soil
Solids 90.70
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.94	mg/Kg	1	11/24/10 12:57

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.7	79.3

Comments:

Batch Information

Analytical Batch: EP112410
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 31.77 G
Prep Final Vol: 10 mL

Analyst: FdK

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-03 (6-7')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-26D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 12:15
Date Received: 11/19/2010
Matrix: Soil
Solids 82.84
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.44	mg/Kg	1	11/23/10 17:21

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	29.1	72.8

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 32.46 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

N.C. Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-04 (6-8')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-27D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 12:40
Date Received: 11/19/2010
Matrix: Soil
Solids 96.39
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.47	mg/Kg	1	11/23/10 17:49

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	33.1	82.6

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 32.08 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

N.C. Certification #481

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-05 (4-6')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-28D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 13:00
Date Received: 11/19/2010
Matrix: Soil
Solids 81.62
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.07	mg/Kg	1	11/23/10 18:17

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	27.1	67.7

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 34.65 G
Prep Final Vol: 10 mL

Analyst: FD

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-06 (3-4')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-29D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 13:15
Date Received: 11/19/2010
Matrix: Soil
Solids 90.87
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.81	mg/Kg	1	11/23/10 18:45

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.7	81.7

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 32.33 G
Prep Final Vol: 10 mL

Analyst: FM

NC Certification #481

N.C. Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-07 (5-6')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-30D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 14:00
Date Received: 11/19/2010
Matrix: Soil
Solids 84.40
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.46	mg/Kg	1	11/23/10 19:13

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	29.8	74.5

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 31.77 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By:

N.C. Certification #481

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-08 (7-8')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-31D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 14:20
Date Received: 11/19/2010
Matrix: Soil
Solids 82.81
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.44	mg/Kg	1	11/23/10 20:37

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.1	77.7

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 32.47 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481
N.C. Certification #481

Reviewed By: _____

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-09 (5-6')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-32D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 14:40
Date Received: 11/19/2010
Matrix: Soil
Solids 86.13
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.02	mg/Kg	1	11/23/10 21:05

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.4	78.5

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 33.07 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By:

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 71 DPT-10 (3-4')
Client Project ID: NCDOT Stedman PSAs
Lab Sample ID: G128-2619-33D
Lab Project ID: G128-2619

Date Collected: 11/16/2010 15:00
Date Received: 11/19/2010
Matrix: Soil
Solids 92.70
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.62	mg/Kg	1	11/23/10 21:33

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.7	79.2

Comments:

Batch Information

Analytical Batch: EP112310
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17795
Prep Method: 3541
Prep Date: 11/22/10
Initial Prep Wt/Vol: 32.58 G
Prep Final Vol: 10 mL

Analyst: FL

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N.C. Certification #481

Reviewed By:

210-124

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(1)

CLIENT: CATLIN / NCDOT

CONTACT: Ben Ashba@CATLIN PHONE NO: 910) 452-5861

PROJECT: NCDOT Stedman PSAT State Proj# R-2303A WBS: 34416.1.1

REPORTS TO: Ben@CATLIN NCDOT email: ben.ashba@catlinusa.com FAX NO: ( )

INVOICE TO: NCDOT GeoEnviro QUOTE #: Cumberland County P.O. NUMBER: 6300025660

SGS Reference: G128-2619

PAGE 1 OF 9

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	(3) Preservatives Used: MeOH / ICE; Analysis Required: GRO / DRO	REMARKS
✓	907 DPT-01 (2-3')	11.15.10	1330	SOIL	3	G	✓ ✓	
✓	907 DPT-02 (2-3')		1400					
✓	907 DPT-03 (1-2')		1415					
✓	907 DPT-04 (2-3')		1430					
✓	907 DPT-05 (2-3')		1445					
✓	907 DPT-06 (1-2')		1500					
✓	907 DPT-07 (1-2')		1515					
✓	907 DPT-08 (2-3')	↓	1530					
✓	51 DPT-01 (2-3')	11.16.10	815					
✓	51 DPT-02 (2-3')	↓	1000	↓	↓	↓	↓	

(5)

	Date	Time	Received By:
Collected/Relinquished By:(1) Ben Ashba	11/19/10	1455	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Special Deliverable Requirements: Summary EDD

Samples Received Cold? (Circle) YES NO

Temperature°C: 5.8, 5.8, 5.5, 5.6

Chain of Custody Seal: (Circle) INTACT BROKEN (ABSENT)

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed

☒ STD 2 Week

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
6500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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(1) CLIENT: CATLIN / NCDOT

CONTACT: Ben Ashba@CATLIN PHONE NO: (910) 452-5864

PROJECT: NCDOT Stedman P5/A5 SITE/WSID#: State Proj #: R-2303A WBS: 34416.1.1

REPORTS TO: Ben @ CATLIN NCDOT email: ben.ashba@catlinusa.com FAX NO:

INVOICE TO: NCDOT GeoEnviro QUOTE #: Cumberland County DoT P.O. NUMBER: 6300025660

SGS Reference: G128-2619

PAGE 2 OF 9

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used: Meoh	ICE	Analysis Required (3): GRO	DRO	REMARKS
✓	S1 DPT-03 (2-3')	11.16.10	930	SOIL	3	G	✓	✓			
✓	S1 DPT-04 (2.5-3.5')		915								
✓	S1 DPT-05 (2-3')		900								HOT
✓	S1 DPT-06 (2-3')		845								
✓	S1 DPT-07 (3-4')		830								
✓	S1 DPT-08 (2.5-3.5')		945								
✓	S1 DPT-09 ([redacted])	11.19.10	745								HOT
✓	S1 DPT-10 (2-3')		800								HOT
✓	S1 DPT-13 (1-2')		850								maybe Hot
✓	S1 DPT-14 (2-3')		905								maybe Hot

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Ben Ashba	11/19/10	1455	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 5.8, 5.8, 5.5, 5.6

Special Deliverable Requirements: Summary EDD

Chain of Custody Seal: (Circle) INTACT BROKEN (ABSENT)

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed

☒ STD 2 Week

☐ 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

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1
CLIENT: CATLIN / NCDOT
CONTACT: BenAshba@CATLIN PHONE NO: (910) 452-5861
PROJECT: NCDOT Stedman PSAS State Proj. # R-2303A WBS: 34416.1.1
REPORTS TO: Ben@CATLIN NCDOT email: benashba@catlinusa.com FAX NO: ( )
INVOICE TO: QUOTE #: Cumberland County DOT P.O. NUMBER: 6300025660

SGS Reference: G128-2619

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2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	3 Analysis Required: GRO	DRO	Preservatives Used: MeOH	ICE	REMARKS
	51 DPT-15 (2-3')	11.19.10	920	SOIL	3	G	✓	✓			maybe Hot
	51 DPT-16 (2-3')	11.19.10	940								maybe Hot
	51 DPT-17 (1-2')	11.19.10	1000								maybe Hot
	71 DPT-01 (4-5')	11.16.10	1125								
	71 DPT-02 (6-7')		1145								
	71 DPT-03 (6-7')		1215								
	71 DPT-04 (6-8')		1240								
	71 DPT-05 (4-6')		1300								
	71 DPT-06 (3-4')		1315								
	71 DPT-07 (5-6')	↓	1400	↓	↓	↓	↓	↓			

5

	Date	Time	Received By:
Collected/Relinquished By:(1) Ben Ashba	11/19/10	1455	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

4

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature °C: 5.6, 5.8, 5.5, 5.6
Special Deliverable Requirements: Summary EDD
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ Date Needed ☒ STD 2 week

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CLIENT: CATLIN / NCDOT

CONTACT: Ben Ashley @ CATLIN PHONE NO: (910) 452-5861

PROJECT: NCDOT Stedman PSAs STATE PROJ #: R-2303A WBS: 34416.1.1

REPORTS TO: Ben @ CATLIN NC DOT FAX NO: ( )

INVOICE TO: NC DOT Geo Enviro QUOTE #: Cumberland County DOT P.O. NUMBER: 6300025660

SGS Reference: G128-2619

PAGE 4 OF 9

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used: MeOH, ICE	Analysis Required (3): GRO, DRO	REMARKS
✓	71 DPT-08 (7-8')	11.16.10	1420	SOIL	3	G	✓	✓	
✓	71 DPT-09 (5-6')		1440						
✓	71 DPT-10 (3-4')		1500						
✓	78 DPT-01 (7-8')	11.17.10	815						
✓	78 DPT-02 (7-8')		840						Maybe Hot
✓	78 DPT-03 (6-7')		930						
✓	78 DPT-04 (7-8')		1000						
✓	78 DPT-05 (6-7')		900						HOT
✓	78 DPT-06 (1-2')		1020						
✓	78 DPT-07 (7-8')		1040						

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Ben Ashley	11/19/10	1455	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 5.8, 5.8, 5.5, 5.6

Special Deliverable Requirements: Summary EDD

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed ☒ STD 2 week

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CONTACT: Ben Ashba @ CATLIN PHONE NO: (910) 452-5861
PROJECT: NCDOT Stedman PSAs SITE/PWSID#: STATE PROJ # R-2303A WBS: 34416.1.1
REPORTS TO: Ben Ashba @ CATLIN NCDOT email: ben.ashba@catlinusa.com FAX NO.:
INVOICE TO: NCDOT Geo Enviro QUOTE #: Cumberland County DOT P.O. NUMBER: 6300025660

SGS Reference: G128-2619 PAGE 5 OF 9

No CONTAINERS; SAMPLE TYPE C= COMP G= GRAB

3 Preservatives Used: MeOH, ICE
Analysis Required: GRO, DRO

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE	GRO	DRO	REMARKS
✓	81B DPT-01 (7-8')	11-18-10	1130	SOIL	3	G	✓	✓	HOT
✓	81B DPT-02 (6-7')	↓	1210	↓	↓	↓	↓	↓	may be Hot
✓	81B DPT-03 (4-5')		1230						may be Hot
✓	81B DPT-04 (1-2')		1250						
✓	81B DPT-05 (1-2')		1315						
✓	81B DPT-06 (1-2')		1340						~~may be~~ Hot
✓	81B DPT-07 (2-3')		1400						may be Hot
✓	81B DPT-08 (1-2')		1420						may be HOT
✓	81B DPT-09 (1-2')		1440						
✓	81B DPT-10 (1-2')	↓	1500	↓	↓	↓	↓	↓	

5	Date	Time	Received By:
Collected/Relinquished By: (1) Ben Ashba	11-19-10	1455	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

4 Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO — YES circled
Temperature °C: 5.8, 5.8 / 5.5, 5.6
Special Deliverable Requirements: Summary EDD
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT — ABSENT circled
Special Instructions:
Requested Turnaround Time:
☐ RUSH ______ Date Needed
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CLIENT: CATLIN / NCDOT
CONTACT: Ben Ashley@CATLIN PHONE NO: (910) 452-5861
PROJECT: NCDOT Stedman PSAs STIP#R-2303A WBS: 34416.1.1
REPORTS TO: Ben@CATLIN NCDOT email: benashley@catlinusa.com FAX NO: ( )
INVOICE TO: NCDOT Geo Enviro QUOTE #: Cumberland County DOT P.O. NUMBER: 6300025460

SGS Reference: G129-2619

PAGE 6 OF 9

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives used: methanol	Analysis Required (3): GRO, DRO	REMARKS
	81B DPT-11 (1-2')	11.18.10	1520	SOIL	3	G	✓	✓	
	81B DPT-12 (1-2')		1530						
	81B DPT-13 (2-3')		1545						
	81B DPT-14 (1-2')		1600						
	81B DPT-15 (1-2')		1620						
	81B DPT-16 (2-3')		1640						
	81B DPT-17 (2-3')	↓	1700						
✓	163 DPT-01 (3-4')	11.17.10	1230						
✓	163 DPT-02 (4-5')		1245						
✓	163 DPT-03 (5-6')	↓	1310	↓					

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Ben Ashley	11.19.10	1455	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Special Deliverable Requirements: Summary EDD

Samples Received Cold? (Circle) YES NO
Temperature °C: 5.8, 5.8, 5.5, 5.6
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:

Requested Turnaround Time:
☐ RUSH _____ Date Needed
☒ STD 2 week

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CLIENT: CATLIN / NCDOT
CONTACT: Ben Ashbee@CATLIN PHONE NO: (910) 452-5861
PROJECT: NCDOT Stedman PSAs SITE/PWSID: ~~STATE~~ Proj # R-2303A WBS: 34416.1.1
REPORTS TO: Ben @ CATLIN NCDOT email: ben.ashbee@catlinusa.com FAX NO: ( )
INVOICE TO: NCDOT ~~QUOTE #~~: Cumberland County
(2) GeoEnviro DOT P.O. NUMBER: 6300025660

SGS Reference: G128-2619

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LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	(3) Preservatives Used: MeOH ICE; Analysis Required: GRO, DRO	REMARKS
✓	163 DPT-04 (2-3')	11-17-10	1330	SOIL	3	G	✓ ✓	
✓	163 DPT-05 (1-2')		1400					maybe Hot
✓	163 DPT-06 (1-2')		1420					maybe Hot
✓	163 DPT-07 (2-3')		1440					Hot
✓	163 DPT-08 (2-3')		1530					Hot
✓	163 DPT-09 (1-2')		1600					maybe Hot
✓	163 DPT-10 (1-2')		1610					maybe Hot
✓	163 DPT-11 (3-4')		1620					
	163 DPT-12 (6-7')	11-17-10	1645					
	163 DPT-13 (6-7')	11-18-10	715					

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Ben Ashbee	11-19-10	1455	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)
Shipping Carrier:
Shipping Ticket No:
Special Deliverable Requirements: Summary EDD
Samples Received Cold? (Circle) YES NO
Temperature °C: 5.8, 5.8, 5.5, 5.6
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ Date Needed
☒ STD 2 Week

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

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CLIENT: CATLIN/NCDOT

CONTACT: BenAshba@CATLIN PHONE NO: (910) 452-5861

PROJECT: NCDOT Stedman PSAs State Proj # R-2303A WBS: 34416.1.1

REPORTS TO: Ben@CATLIN NCDOT email: ben.ashba@catlinusa.com

INVOICE TO: NCDOT GeoEnviro QUOTE #: Cumberland County P.O. NUMBER: 6300025660

SGS Reference: G128-2619

PAGE 8 OF 9

Preservatives Used: MeOH, ICE

Analysis Required: GRO, DRO

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C= COMP G= GRAB	GRO	DRO	REMARKS
IS	163 DPT-14 (6-7')	11.18.10	740	SOIL	3	G	✓	✓	
(3-4')	163 DPT-15 ?(2-3') or (3-4')		805						
	163 DPT-16 (1-2')		820						
	163 DPT-17 (5-6')		850						check sample label
	163 DPT-18 (6-7')		920						maybe Hot
	163 DPT-19 (6-7')		940						
	168 DPT-01 (3-4')	11.15.10	1630						Maybe Hot
	168 DPT-02 (3-4')		1645						maybe Hot
	168 DPT-03 (3-4')		1700						check sample label ID maybe (2-4') not (3-4')
	168 DPT-04 (2-4')		1715						

Collected/Relinquished By: (1)	Date	Time	Received By:
Ben Ashba	11.19.10	1455	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

Shipping Carrier:

Shipping Ticket No:

Special Deliverable Requirements: Summary EDD

Special Instructions:

Samples Received Cold? (Circle) **YES** NO

Temperature °C: 5.8, 5.8, 5.5, 5.6

Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

Requested Turnaround Time:

☐ RUSH ______ Date Needed

☒ STD 2 Weeks

☐ 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

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099562

CLIENT: CATLIN / NCDOT

CONTACT: Ben Ashba@CATLIN PHONE NO: (910) 452-5861

PROJECT: NCDOT Stedman PSAs SITE/PWSID#: State Proj # R-2303A WBS: 34416.1.1

REPORTS TO: Ben@CATLIN NCDOT email: ben.ashba@catlinusa.com ~~FAX NO.: ( )~~

INVOICE TO: NCDOT GeoEnviro DOT ~~QUOTE #:~~ Cumberland County P.O. NUMBER: 6300025660

SGS Reference: G128-2619

PAGE 9 OF 9

Preservatives Used: MeOH, ICE, HCl, ice

Analysis Required: GRO, DRO, 8260, 8270

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C= COMP, G= GRAB)	GRO	DRO	8260	8270					REMARKS
✓	168 DPT-05 (3-4')	11.15.10	1730	SOIL	3	G	✓	✓							
✓	168 DPT-06 (0-2')	11.15.10	1735	SOIL	3	G	✓	✓							
✓	81B DPT-02	11.18.10	1730	H2O	4	G			X	X					NO LABELS maybe HCl

Collected/Relinquished By:(1)	Date	Time	Received By:
Ben Ashba	11.19.10	1455	[signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) **YES** NO

Temperature °C: 5.8, 5.8, 5.5, 5.6

Special Deliverable Requirements: Summary EDD

Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

Special Instructions: Please report any 8260/8270 Low Runs, screening OK

Requested Turnaround Time:

☐ RUSH ______ Date Needed

☒ STD 2 week

☐ 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 ...

N.C. Certification #481

SGS North America, Inc.

APPENDIX C

SCHNABEL GEOPHYSICAL REPORT

Schnabel
ENGINEERING

December 14, 2010

Mr. Richard Garrett, LG
Catlin Engineers and Scientists, Inc.
P.O. Box 10279
Wilmington, NC 28404-0279

RE:
State Project: R-2303A
WBS Element: 34416.1.1
County: Cumberland
Description: Stedman – NC 24 from West of SR 1006 (Maxwell Road/Clinton Road) in Cumberland County to SR 1853 (John Nunnery Road)

Subject: **Project 09210013.31 Report on Geophysical Surveys**
Parcel 71, Cumberland County, North Carolina

Dear Mr. Garrett:

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

INTRODUCTION

The work described in this report was conducted on November 11 and 18, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted over the accessible areas of the parcel as indicated by the NCDOT to support their environmental assessment of the subject property. Photographs of the parcel are included on Figure 1. The property is located on the north side of Clinton Road approximately 170 feet east of Blawell Street in Stedman, NC. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies, including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

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

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over areas of reinforced concrete and anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of UST's. 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 71 are shown on Figures 3 and 4. The EM61 early time gate results are plotted on Figure 3. The early time gate data provide the more sensitive detection of metal objects. Figure 4 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show anomalies apparently caused by reinforced concrete, buried utilities, or known site features (Figures 3 and 4). The GPR data collected at the site do not indicate the presence of metallic UST's within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project R-2303A in Stedman, NC indicates the following:

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

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LIMITATIONS

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

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

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

Jeremy S. Strohmeyer, LG
Project Manager

Edward D. Billington, LG
Senior Vice President

JW:JS:NB
Attachments: Figures (4)
FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.31 (R-2303A, CUMBERLAND CO.)\REPORT\PARCEL 71\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 71 (R-2303A).DOCX

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Parcel 71 – Harry T. Parker Property, looking north

Parcel 71 – Harry T. Parker Property, looking northwest

Schnabel ENGINEERING	STATE PROJECT R-2303A NC DEPT. OF TRANSPORTATION CUMBERLAND CO., NORTH CAROLINA PROJECT NO. 09210013.31	PARCEL 71 SITE PHOTOS FIGURE 1

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Geonics EM61-MK2

GSSI SIR-3000

Schnabel ENGINEERING	STATE PROJECT R-2303A NC DEPT. OF TRANSPORTATION CUMBERLAND CO., NORTH CAROLINA PROJECT NO. 09210013.31	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2

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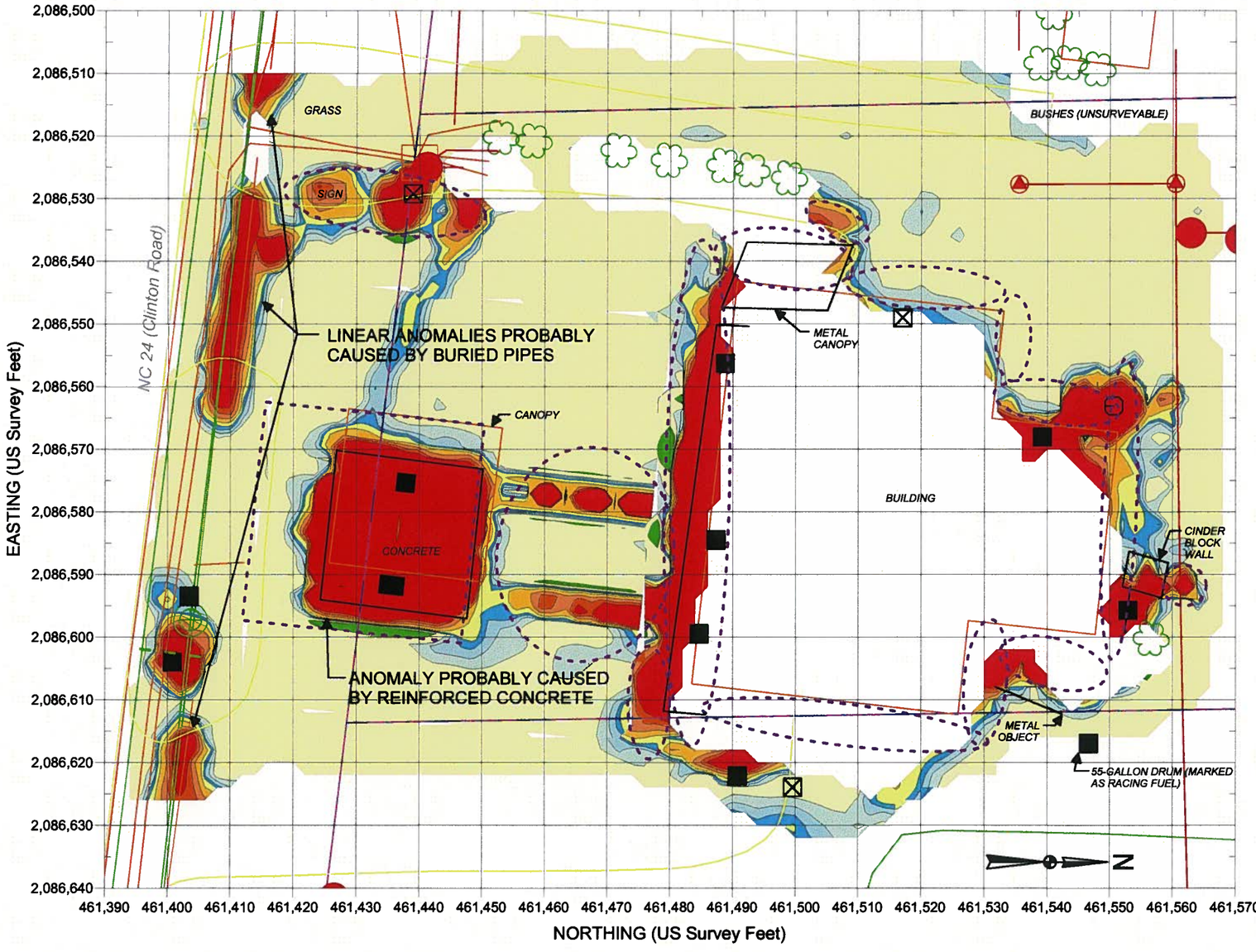

EM61 Early Time Gate Response (mV)

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

Scale in US Survey Feet

0 20 40 60

EXPLANATION

- SIGN
- UTILITY POLE
- GUY WIRE
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- LIGHT POLE
- DOT PROPOSED R/W
- DOT PROPOSED UTILITY EASEMENT
- PROPERTY LINE
- UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
- GPR SURVEY AREA

REF.: NCDOT FILE: r2303a_rdy_psh_17.dgn
(FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on November 11, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on November 18, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

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STATE PROJECT R-2303A
CUMBERLAND COUNTY, NC
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.31

PARCEL 71
EM61 EARLY TIME GATE RESPONSE
FIGURE 3

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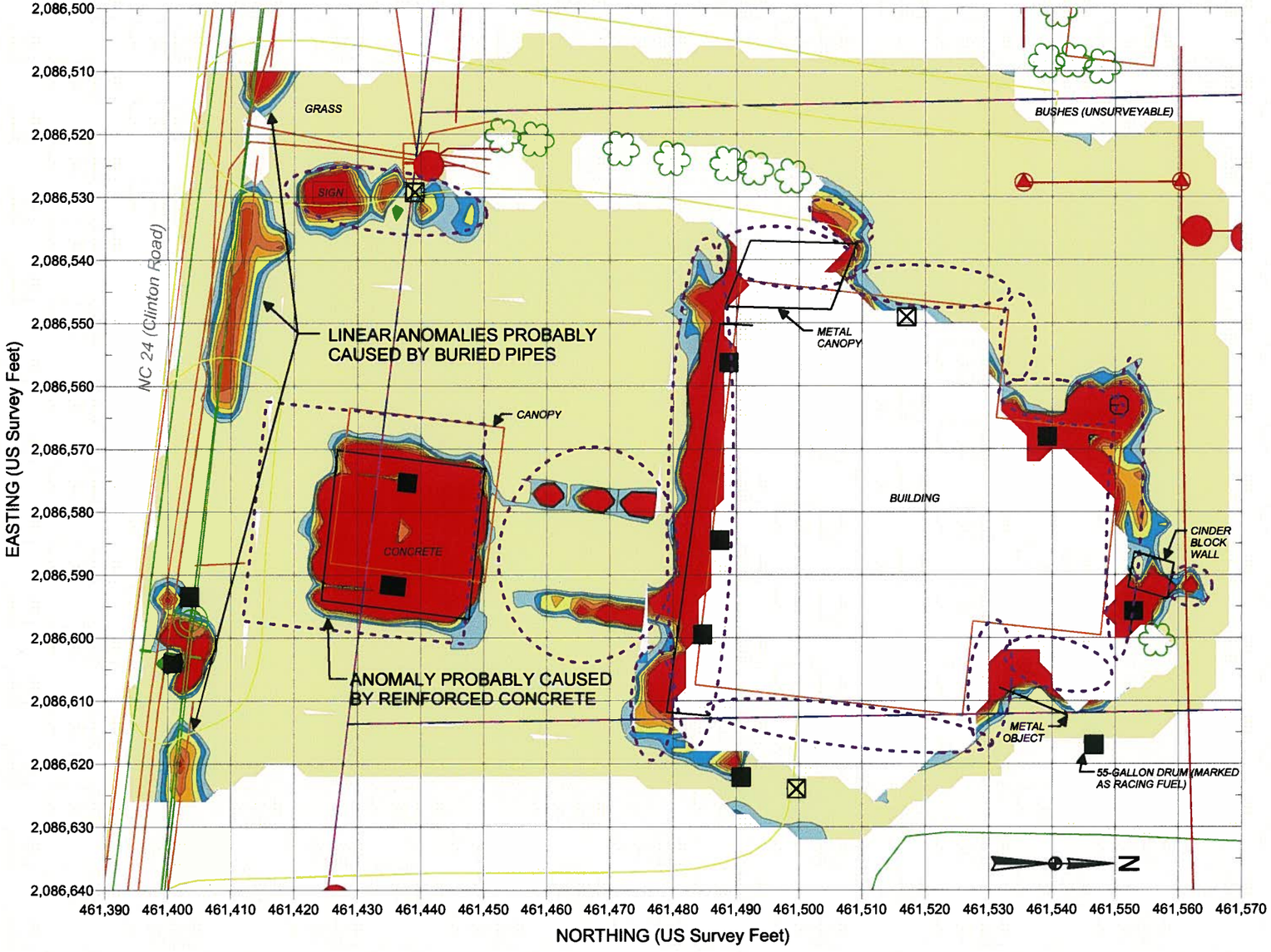

EM61 Differential Response (mV)

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

Scale in US Survey Feet

0 20 40 60

EXPLANATION

- SIGN
- UTILITY POLE
- GUY WIRE
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- LIGHT POLE
- DOT PROPOSED R/W
- DOT PROPOSED UTILITY EASEMENT
- PROPERTY LINE
- UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
- GPR SURVEY AREA

REF.: NCDOT FILE: r2303a_rdy_psh_17.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 11, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on November 18, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

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STATE PROJECT R-2303A
CUMBERLAND COUNTY, NC
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.31

PARCEL 71
EM61 DIFFERENTIAL RESPONSE
FIGURE 4

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