GEL Engineering of NC INC
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problem solved

PRELIMINARY SITE ASSESSMENT REPORT

SR 1406 (Piney Green Road) from NC 24 to US 17
1965 Piney Green Road, Parcel #218
Jacksonville, North Carolina
State Project U-3810
WBS Element # 35801.1.1
Onslow County

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

April 16, 2010

PO Box 14262 3200 Chapel Hill/Nelson Boulevard, Suite 205 Research Triangle Park, NC 27709 P 919.544.1100 F 919.544.4755 www.gel.com

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TABLE OF CONTENTS

Signature Page

This document, entitled "Preliminary Site Assessment Report," has been prepared for Parcel #218, located at 1965 Piney Green Road in Jacksonville, North Carolina (State Project U-3810, WBS Element # 35801.1.1, Onslow County). It has been prepared by GEL Engineering of NC, Inc. in accordance with the Notice to Proceed provided by the North Carolina Department of Transportation-GeoEnvironmental Section, Geotechnical Engineering Unit for the exclusive use of the North Carolina Department of Transportation. It has been prepared in accordance with accepted quality control practices and has been reviewed by the undersigned.

GEL ENGINEERING OF NC, INC.
an Affiliate of The GEL Group, Inc.

Andrew D. Eyer, L.G.
Senior Project Manager

Keith D. McCullock, P.E.
Senior Staff Engineer

04-16-10
Date

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SR 1406 (Piney Green Road) from NC 24 to US 17
1965 Piney Green Road, Parcel #218
Jacksonville, North Carolina
State Project U-3810
WBS Element # 35801.1.1
Onslow County

Executive Summary

The subject site is Parcel #218, located at 2601 Piney Green Road in Jacksonville, North Carolina. The primary purpose of this investigation was to determine the presence or absence of underground storage tanks (USTs) and constituents of concern in soil within the North Carolina Department of Transportation (NCDOT) proposed easterly Right-of-Way (ROW) of Piney green Road adjacent to Parcel #218. This document presents the details of a preliminary site assessment performed within the North Carolina Department of Transportation (NCDOT) proposed easterly Right-of-Way (ROW) adjacent to Parcel #218 located at 1965 Piney Green Road in Jacksonville, North Carolina. Currently, Parcel #218 houses Crom's Automotive & Body Shop.

GEL Engineering of NC, Inc. (GEL) performed a preliminary site assessment within the NCDOT proposed easterly ROW of Piney Green Road adjacent to Parcel #218 that included a geophysical survey, and the collection and analysis of soil samples. Three subsurface anomalies were identified by EM-61 data during the geophysical investigation, but the anomalies could not be confirmed by ground penetrating radar (GPR) data collected over the same areas; therefore, these three anomalies are considered to be “Possible” USTs. No USTs or other solid objects were encountered when the center of each anomaly was penetrated to a depth of 8 feet bls using direct push technology (DPT).

Soil samples were collected for analysis from eleven borings constructed within the NCDOT proposed easterly ROW for Piney Green Road adjacent to Parcel #218. The soil samples were analyzed for DRO, GRO, VOCs, and SVOCs. The analytical results indicate that no DRO, GRO, VOCs, or SVOCs were detected in any of the soil samples collected from the eleven borings.

Executive Summary (continued)

Based on the data generated from this investigation, there is no evidence that a release of constituents of concern has occurred within the NCDOT proposed easterly ROW at Parcel #218. No additional environmental investigation of the soil at either site is recommended at this time.

PRELIMINARY SITE ASSESSMENT REPORT

SR 1406 (Piney Green Road) from NC 24 to US 17
1965 Piney Green Road, Parcel #218
Jacksonville, North Carolina
State Project U-3810
WBS Element # 35801.1.1
Onslow County

1.0 Introduction

This document presents the details of a preliminary site assessment performed within the North Carolina Department of Transportation (NCDOT) proposed easterly Right-of-Way (ROW) at to Parcel #218 located at 1965 Piney Green Road in Midway Park, North Carolina. Currently, Parcel #218 houses Crom's Automotive & Body Shop. The site location is shown on Figure 1, an excerpt from the United States Geological Survey (USGS) 7.5-minute quadrangle map of Camp Lejeune, North Carolina. The preliminary site assessment, which included a geophysical survey, was conducted by GEL Engineering of NC, Inc. (GEL) in accordance with the Notice to Proceed issued by NCDOT on February 9, 2010.

The primary purpose of this investigation was to determine the presence or absence of USTs and on-site constituents of concern in soil within the NCDOT proposed easterly ROW of Piney Green Road at the subject site as a result of current and/or former operations.

2.0 Background

NCDOT is planning road improvements to SR 1406 (Piney Green Road) between NC 24 and US 17 in Onslow County, North Carolina. NCDOT wanted to assess the proposed ROWs adjacent to the site to evaluate the presence or absence of USTs and soil contamination related to the current and/or former on-site operations, and the impact (if any) of these operations on the proposed road improvements. Figures 2 and 3 show the general site layout for Parcel #218 and its location on Piney Green Road, respectively**.**

3.0 Local Geology and Surroundings

Parcel #218 is in a developed area of Midway Park in Onslow County, North Carolina. Surrounding land uses include residential and commercial activities.

The site is located approximately 6 miles east of the center of Jacksonville, North Carolina. This area is located in the Coastal Plain physiographic province of North Carolina. The land surface of the area is characterized by nearly level, and gently sloping,

well drained soils. Coastal Plain geology in the vicinity of the site is characterized by undifferentiated post-Miocene interbedded sand and clay terrace deposits overlain by aqueous and aeolian deposits of marine and non-marine origin (USGS, 1955).

The United States Department of Agriculture's *Soil Survey of Onslow County, North Carolina* (1992) maps the area as Goldsboro-Urban Land Complex (GpB), typically composed of fine sandy loam grading to sandy clay loam with depth, and Norfolk Loamy Fine Sand (NoB), which is typically composed of loamy fine sand grading to sandy clay loam with depth. The soils encountered at the site during the preliminary site assessment consisted predominantly of tan/grey/brown clayey, silty sand to depths of 8 feet below land surface (bls).

Based on the moisture content of the subsurface soil encountered during the preliminary site assessment, the water table is located at approximately 7 to 8 feet bls. Based on the USGS topographic map presented as Figure 1, the site is located approximately 15 feet above mean sea level. The topography in Figure 1 indicates that groundwater in the vicinity of Parcel #218 most likely flows in a northerly direction towards Little Northeast Creek.

4.0 Subsurface Investigation

To determine the presence or absence of USTs and impact to subsurface soil within the NCDOT proposed ROW at Parcel #218, GEL performed a limited site assessment that consisted of the following tasks:

- Performance of a geophysical investigation to identify the presence or absence of USTs and associated appurtenances within the proposed easterly ROW of Piney Green Road adjacent to Parcel #218.
- Soil vapor screening of soil samples collected from subsurface soil borings at Parcel #218 within the proposed easterly ROW of Piney Green Road to determine the potential presence or absence of soil impact from petroleum constituents of concern.
- Collection and laboratory analysis of soil samples from the proposed easterly ROW of Piney Green Road at Parcel #218.

The details of these tasks are discussed in the following sections.

4.1 Geophysical Evaluation at Parcel #218

The geophysical investigation included the deployment of ground penetrating radar (GPR) technology and time domain electromagnetic technology (TDEM) to the site.

These technologies were used in concert with one another in order to identify subsurface metallic anomalies and, more specifically, to identify the potential presence of USTs on site. A brief description of each technology is presented in the following paragraphs followed by a discussion of the results of the geophysical investigation.

4.1.1 Ground Penetrating Radar Methodology

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

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

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

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

transmitting frequency. Depth of investigation generally increases as transmitting frequency decreases; however, the ability to resolve smaller subsurface features is diminished as frequency is decreased.

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

4.1.2 Time Domain Electromagnetic Methodology

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

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

4.1.3 Field Procedures

The GPR and TDEM field investigation was performed at Parcel #335 on March 3, 2010. The extent of the investigation covers only the proposed ROW indicated by NCDOT. A GPR system time range setting of 90 nanoseconds (ns) was used during the entire investigation. This range was determined after a series of test lines were conducted to evaluate the GPR response in the local geologic section. A preliminary interpretation of the GPR data was conducted in the field and potential USTs were marked on the ground. Following the completion of the fieldwork, the data were post-processed and analyzed in more detail. GPR data processing typically included band pass filtering, background removal, horizontal smoothing, and gain adjustments.

TDEM was also used to scan the project site. Electromagnetic anomalies indicative of buried metallic objects were marked in the field.

It should be noted that "One Call" underground utility locations had been performed within the easterly ROW of Piney Green Road at Parcel #218 prior to the initiation of the preliminary site assessment field activities at the site. Several underground utilities were marked by "One Call" within the easterly ROW at Parcel #218.

As shown on Figure 4, EM anomalies indicated the potential presence of USTs. Three potential areas were found in the grassy area on the north side of the site. GPR data in these areas were inconclusive to confirm the existence of USTs; therefore, these areas are considered "Possible" USTs. Furthermore, the center of each anomaly was penetrated with a 2-inch diameter hydraulic probe to a depth of 8 feet below land surface using direct push technology (DPT) on March 10, 2010. No USTs or other solid objects were encountered.

4.2 Subsurface Soil Investigation at Parcel #218

To determine the presence or absence of impact to subsurface soil by constituents of concern, GEL collected soil samples from eleven subsurface soil borings, S8-1 through S8-11, at Parcel #218 on March 10, 2010, for analysis of total petroleum hydrocarbon indicator parameters, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). The soil borings were constructed within the proposed NCDOT easterly ROW of NC 24 and Piney Green Road, as shown on Figure 2 and in the photographs in Appendix III. The longitude and latitude coordinates for the boring locations are listed in the table below.

All borings were advanced to a total depth of 8 feet bls. Soil samples were collected at 3-4 feet and 7-8 feet bls from each borehole. All soil samples were inspected for indications of impact by constituents of concern, including petroleum hydrocarbons, such as odors, discoloration, or visible sheen. This sampling was accomplished using DPT provided by Regional Probing Services of Wake Forest, North Carolina (Regional Probing). Soil boring lithologic logs are attached as Appendix I of this document. No groundwater was encountered during construction of the borings.

The soil samples were screened for the presence of organic vapors using a portable photoionization detector (PID). The PID measures the concentration of organic compounds in the vapor space above a soil sample resulting from volatilization of organic compounds contained in the soil. To screen the soils, each sample was placed in

a clean, resealable polyethylene bag. The bag was sealed, and the sample was allowed to equilibrate for approximately 5 minutes, after which time a small opening was made in the bag. The probe of the PID was then inserted into the bag, and the airspace above the soil was screened for organic vapors.

To assess the subsurface soil quality, one soil sample was collected from each soil boring at the sampled depth interval with the highest PID reading and submitted for laboratory analysis. The depth intervals and PID measurements of the collected soil samples submitted to the laboratory for analysis are listed below.

Summary of Location Data and PID Measurements for Soil Samples Collected for Analysis at Parcel No. 218

Soil Boring	Depth Interval of Soil Sample Collected for Analysis (feet bls)	PID Reading (ppm)	Latitude/Longitude (NAD83)
S8-1	7-8	1.3	34º44'42.18"N / 77º19'47.04"W
S8-2	7-8	1.2	34º44'42.24"N / 77º19'46.68"W
S8-3	3-4	1.0	34º44'43.14"N / 77º19'47.16"W
S8-4	3-4	0.5	34º44'43.44"N / 77º19'47.70"W
S8-5	7-8	0.8	34º44'42.66"N / 77º19'47.34"W
S8-6	7-8	1.1	34º44'43.86"N / 77º19'48.00"W
S8-7	7-8	0.5	34º44'44.40"N / 77º19'47.46"W
S8-8	3-4	0.4	34º44'43.62"N / 77º19'47.64"W
S8-9	3-4	0.2	34º44'44.94"N / 77º19'47.46"W
S8-10	3-4	0.0	34º44'45.54"N / 77º19'48.00"W
S8-11	3-4	0.0	34º44'44.82"N / 77º19'48.18"W

Notes:
1) Coordinates are based on North American Datum of 1983 (NAD83)
2) bls = below land surface
3) PID = photoionization detector
4) ppm = parts per million

Following completion of the soil sampling activities, all borings were abandoned by filling the boreholes with soil cuttings and hydrated bentonite. Soil samples were submitted to SGS Laboratories, Inc. in Wilmington, North Carolina (North Carolina Certification No. 481) for analysis of diesel range organics (DRO) by EPA Method 8015 with EPA Method 3545 sample preparation, and gasoline range organics (GRO) by EPA Method 8015 with EPA Method 5035A/5030B sample preparation. In addition, all soil samples were analyzed for VOCs by EPA Method 8260B and SVOCs by EPA Method 8270D to identify possible soil impact from the current automobile repair operations.

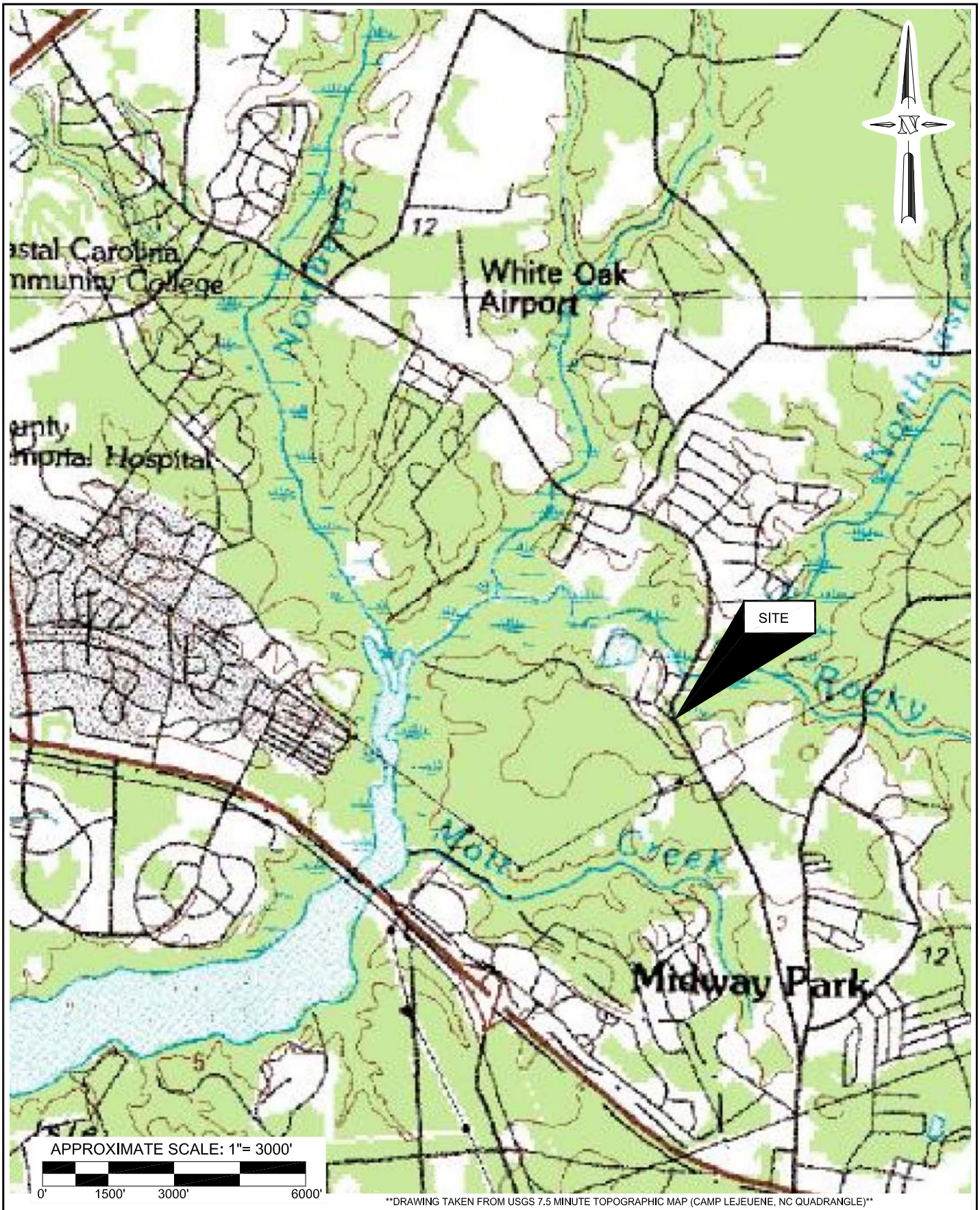
The analytical results are included on the Certificates of Analysis provided in Appendix II. The results indicate that no DRO, GRO, VOCs, or SVOCs were detected in any of the soil samples collected from the eleven borings.

5.0 Conclusions and Recommendations

GEL performed a preliminary site assessment within the NCDOT proposed easterly ROW of Piney Green Road adjacent to Parcel #218 that included a geophysical survey, and the collection and analysis of soil samples. Three subsurface anomalies were identified by EM-61 data during the geophysical investigation, but the anomalies could not be confirmed by GPR data collected over the same areas; therefore, these three anomalies are considered to be "Possible" USTs. However, no USTs or other solid objects were encountered when the center of each anomaly was penetrated to a depth of 8 feet bls using DPT.

Soil samples were collected for analysis from eleven borings constructed within the NCDOT proposed easterly ROW for Piney Green Road adjacent to Parcel #218. The soil samples were analyzed for DRO, GRO, VOCs, and SVOCs. The analytical results indicate that no DRO, GRO, VOCs, or SVOCs were detected in any of the soil samples collected from the eleven borings.

Based on the data generated from this investigation, there is no evidence that a release of constituents of concern has occurred within the NCDOT proposed easterly ROW at Parcel #218. No additional environmental investigation of the soil at either site is recommended at this time.



DRAWING TAKEN FROM USGS 7.5 MINUTE TOPOGRAPHIC MAP (CAMP LEJEUNE, NC QUADRANGLE)

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an Affiliate of THE GEL GROUP INC
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P.O. Box 14262
RTP, NC27709
P: 919.544.1100
F: 919.406.1807
www.gel.com

PROJECT: ncdt00110			
PRELIMINARY SITE ASSESSMENT REPORT PARCEL 218 JACKSONVILLE, NORTH CAROLINA STATE PROJECT U-3810, WBS# 35801.1.1	USGS TOPOGRAPHIC LOCATION MAP		FIGURE 1
DATE: April 6, 2010	DRAWN BY: TJP	APPRV. BY: ADE	

PARCEL 218

POSSIBLE UST

POSSIBLE UST

SPECIAL LATERAL BASE DITCH
SEE DETAIL 46

CLASS 'B' RIP RAP
EST. 11 TONS
EST. 28 SY FILT. FAB.

CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY FILT. FAB.

ROBERT A
CROM, ET UX

218

N 43° 57'02" W
84.98'

N 43° 59'14" W
182.40'

S 60° 50'45" W
211.46'

N 82° 17'54" W
210.53'

N 31° 54'02" W
211.40'

1SMTLBUS

1SMTLBUS
tangent

HTR

REMOVE 36" CMP

REMOVE 24" RCP

REMOVE

SR 1406 (PINEY GREEN ROAD)

PINEY GREEN RD

EXISTING R/W

48" CHL

31" BST

18" CMP

S8-1
S8-2
S8-3
S8-4
S8-5
S8-6
S8-7
S8-8
S8-9
S8-10
S8-11

LEGEND

S8-2 SOIL BORING LOCATION

NOTE:
SEE FIGURE 3 FOR KEY MAP
SHOWING PARCEL LOCATIONS

APPROXIMATE SCALE: 1"= 40'

0' 20' 40' 80'

PLOTTED: May 07, 2010 – 8:26am BY: tjp FILE LOCATION: H:\Consulting Client Files\KC-RW\ncdot\ncdt00110 Piney Green\ncdt00110_Fig2s-C.dwg LAYOUT TAB: 218

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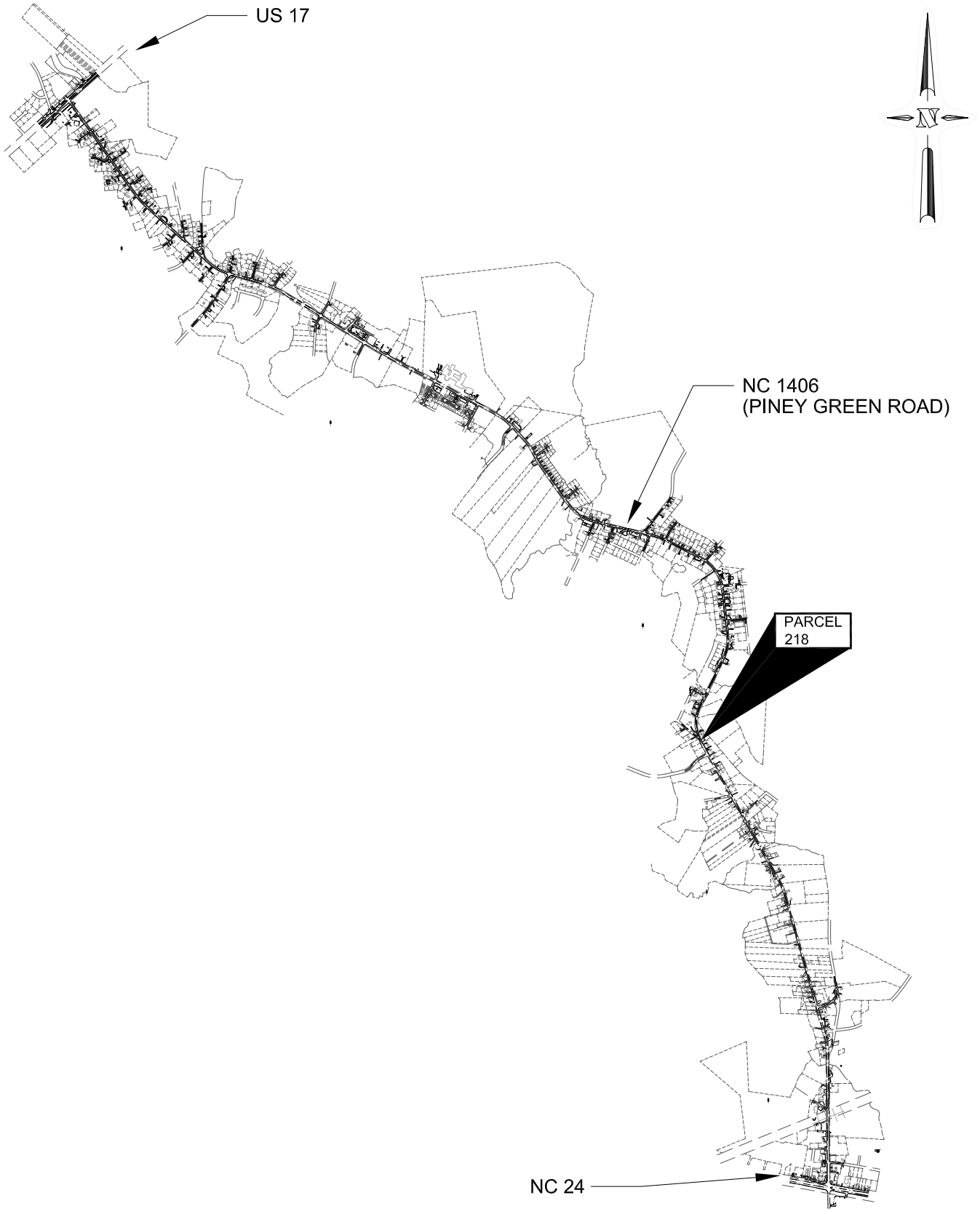
Post Office Box 14262
Research Triangle Park, NC 27709
P 919–544–1100
F 919–406-1807
www.gel.com

PROJECT: ncdt00110		
PRELIMINARY SITE ASSESSMENT REPORT PARCEL NO. 218, ROBERT & DEBRA CROM 1965 PINEY GREEN ROAD JACKSONVILLE, NORTH CAROLINA STATE PROJECT U-3810, WBS #35801.1.1	SITE SKETCH SHOWING SOIL BORING LOCATIONS	FIGURE 2
DATE: May 3, 2010	DRAWN BY: TJP APPRV. BY: ADE	



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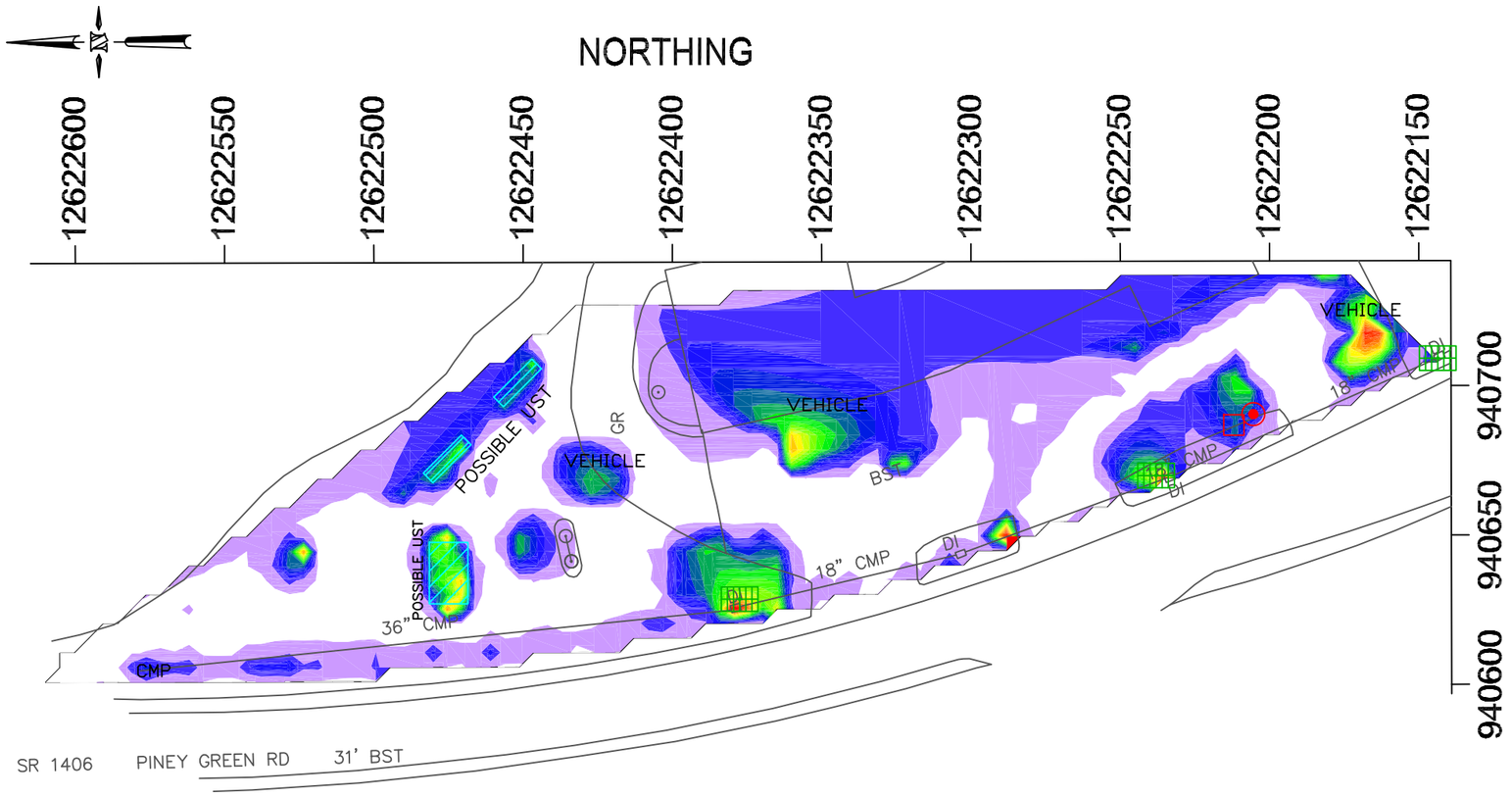
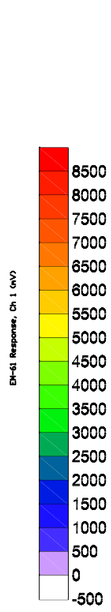
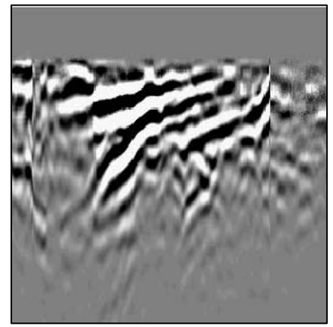
	PRELIMINARY SITE ASSESSMENT REPORT PARCEL 218 JACKSONVILLE, NORTH CAROLINA STATE PROJECT U-3810, WBS# 35801.1.1	KEY MAP SHOWING PARCEL LOCATION		FIGURE 3
	DATE: April 6, 2010	DRAWN BY: TJP	APPRV. BY: ADE	



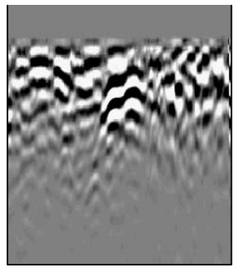
NOTES

1) UNDERGROUND FEATURES WERE LOCATED USING VISUAL EVIDENCE, GROUND PENETRATING RADAR (GPR), AND TIME DOMAIN ELECTROMAGNETIC (TDEM) METHODS. OTHER BURIED UTILITIES AND STRUCTURES MAY EXIST BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE GEOPHYSICAL METHODS, SITE ACCESS, AND/OR HIGH TARGET CONGESTION. THEREFORE, DUE CAUTION SHOULD BE USED WHEN PERFORMING SUBSURFACE EXCAVATION ACTIVITIES WHERE POTENTIAL CONFLICTS EXIST. GEL ENGINEERING OF NC INC. IS NOT RESPONSIBLE FOR DAMAGES THAT MAY OCCUR. IDENTIFYING THE LOCATION OF SOME UTILITIES AND/OR STRUCTURES MAY ONLY BE POSSIBLE WITH VACUUM OR OTHER EXCAVATION METHODS.
2) DATA FROM GEONICS, LTD. EM-61 MKII AND MALA GEOSCIENCE GROUND PENETRATING RADAR.
3) COORDINATES IN US STATE PLANE NAD 1983 DATUM.
4) PROJECT MICROSTATION BASEMAPS PROVIDED BY NCDOT.
5) **NO UNKNOWN UNDERGROUND STORAGE TANKS FOUND UNLESS NOTED IN DRAWING**





GPR IMAGE OF POSSIBLE UST
WEST SIDE OF SITE



GPR IMAGE OF POSSIBLE UST
EAST SIDE OF SITE

GRAPHIC SCALE

0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGEND

- STORMWATER DRAINAGE GRATE
- UNKNOWNUTILITY
- UTILITY POLE
- POSSIBLE UST

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RTP, NC 27709
P: 919.544.1100
F: 919.406.1807
www.gel.com

PROJECT: NCDT00110		
Preliminary Site Assessment SR 1406 (Piney Green Rd) From NC 24 to US 17 Onslow County, North Carolina State Project U-3810, WBS# 35801.1.1	Site Map Showing Results Of Geophysical Survey Investigation Parcel 218	FIGURE 4
March 11, 2010	DRAWN BY: DEA / APPRV. BY: CMS	

APPENDIX I

SOIL BORING LITHOLOGIC LOGS

SOIL BORING LOG

Boring/Well No.: SB-1
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	1.0	Dk. Brn Silty Sand, Organics, Damp Orange, Tan Gray Silty Clay, Moist	
10:50 * 2	4-8	-	1.3	Orange-Tan/Gray Mottled Sandy Clay, Moist	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Notes:

1) 4-foot continuous cores using DPT..

34° 44. 703 N

77° 19. 784 W

SOIL BORING LOG

Boring/Well No.: SB-2
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	--	1.2	Tan Silty Sand, damp Org, Tan-Gray Mottled Sandy Clay, Moist	
2 (11:10)	4-8	~	1.2	Gray Brn, Tan Orange Mottled, Silty Clay, Moist	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Notes:

1) 4-foot continuous cores using DPT..

34° 44.704 N
77° 19.778 W

SOIL BORING LOG

Boring/Well No.: SB-3
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	1.0	ROC- DK Brn, Brn Silty Sand, Damp DK Brn, Sandy Clay Moist-Wet Sticky	Clay
2	4-8	-	0.7	" Brown Sandy Clay Wet,	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

11:20 *

Notes:

1) 4-foot continuous cores using DPT..

34044.719 N
77° 19.786 W

SOIL BORING LOG

Boring/Well No.: SB-4
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	0.5	DK Brn Silty Sand, Damp Brn Sandy Clay, Moist	
2	4-8	-		Brn, Tan Sandy Clay, Moist Brn clayey sand, Fine Grained, Wet	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

12:00 hr

Notes:

1) 4-foot continuous cores using DPT..

34° 44.724 N

77° 19.795 W

SOIL BORING LOG

Boring/Well No.: SB-5
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	0.5	DK. Brn - Tan Silty Sand, Damp Orange Brn Clayey Sand, Moist	
2 *	4-8	-	0.8	Orange Brn Sandy Clay Moist. Wet DK. Brn Silty Sand, Sat → Tight Mottled Silty Clay - Moist	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

1245

Notes:

1) 4-foot continuous cores using DPT..

34° 44. 711 N
77° 19. 789 W

SOIL BORING LOG

Boring/Well No.: SB-6
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	0.6	Grass Roots, ROC Brn-Lt.Brn, Tan Fine Sand Moist to wet at depth (4')	
2	4-8	-	1.1	Orange Tan Gray silty Clay (4'-8') Moist	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Notes:

1) 4-foot continuous cores using DPT..

34°44.731 N

77°19.800 W

SOIL BORING LOG

Boring/Well No.: SB-7
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	0.3	Tan, Lt. Gray Fine Sand, Moist → DK. Brn Organics, silty sand, Moist → Gray Brn Sandy Clay, Moist	
2	4-8	-	0.5	Mottled Sandy Clay, Moist	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

12:45 ★

Notes:

1) 4-foot continuous cores using DPT..

34°44.740 N
77°19.791 W

SOIL BORING LOG

Boring/Well No.: SB-8
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-	0.4	Tan Fine Sands, Moist Brn-DK Brn Clayey Silty Sand, Moist	
2	4-8	-	0.0	Orange Tan Gray Mottled Sandy Clay - Moist	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

1300 PG

Notes:

1) 4-foot continuous cores using DPT..

34°44.727 N
77° 19.794 W

SOIL BORING LOG

Boring/Well No.: SB-9
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
* 1	0-4	-	0.2	DK Brn, Organics, Brn Silty Fine Sand, Moist Mottled Sandy Clay	
2	4-8	-	0.0	" Orange Tan/Gray Fine Sandy Wet	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Notes:

1) 4-foot continuous cores using DPT..

34°44.749 N

77° 19.791 W

SOIL BORING LOG

Boring/Well No.: SB-10
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0-4	-		Organics, Dk Brown Silty Fine Sands, Moist	
2	4-8	-		" Tan Fine Sand, Moist-Wet " Tan, Orange Silty Sand, Wet	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

13:25 ★

Notes:

1) 4-foot continuous cores using DPT..

34°44.759 N
077° 19.800 W

SOIL BORING LOG

Boring/Well No.: SB-11
Date Started: 3/10/10
Date Completed: 3/10/10

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1340 * 1	0-4	–	0.0	Grass mat/Organics, DK Brn, Tan Silty Sand Mottled Sandy Clay, Moist - Wet	
2	4-8	–	0.0	" Orange Tan Fine Sand, Wet	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Notes:

1) 4-foot continuous cores using DPT..

747
340 44.~~703~~ N

77° 19.~~744~~ W
803

APPENDIX II

CERTIFICATES OF ANALYSIS AND CHAIN OF CUSTODY RECORD FOR SOIL SAMPLES

SGS

Andrew Eyer
GEL Engineering of NC, Inc.
PO Box 14262
RTP, NC 27709

Report Number: G341-616

Client Project: U-3810/NCDOT 001100

Dear Andrew Eyer,

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 Lori Lockamy 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.

23March2010
Date

Project Manager
Lori Lockamy

Case Narrative
GEL
SGS Project: **G341-616**
Project Name: **U-3810/NCDT001100**

SGS North America Inc.

March 22nd, 2010

- Seventy four soil samples were accepted into the laboratory on March 11th, 2010 at 1515 for analyses as indicated on the chain of custody. The samples were received in good condition, with a temperature range of 2.0-2.1°C.
- All extractions and analyses were completed within holding time limits, with the following quality control exceptions.

8260 Analyses

- The ICAL dated 9032110 has a reported linear r^2 value for Acetone that is below 0.990. Only samples **S8-2-8, S8-6-8, S8-8-4, S7-1-4, S7-2-4** and **S7-3-4** were affected and these samples had no Acetone detected.
- Samples **S8-4-4** and **S8-7-8** have reported recoveries for 1,2-Dichloroethane-d4 that are above the QC limit. These recoveries were confirmed by duplicate analysis.

Craig R Tronzo
Data Validation

Date 3/23/10

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.

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-1-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-57A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 10:50
Date Received: 3/11/2010
Matrix: Soil
Solids 71.15

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.31	mg/Kg	1	03/17/10 21:31

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	83.7	83.7		70-130

Comments:

Batch Information

Analytical Batch: VP031710
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 5.77 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-1-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-57J
Lab Project ID: G341-616

Date Collected: 3/10/2011 10:50
Date Received: 3/11/2010
Matrix: Soil
Solids 71.15
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	8.24	mg/Kg	1	03/18/10 04:31

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.2	75.5

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16215
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 34.12 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-1-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-57E
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 10:50
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.03 g
%Solids: 71.2

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	58.2	1	3/18/2010
Benzene	BQL	5.82	1	3/18/2010
Bromobenzene	BQL	5.82	1	3/18/2010
Bromochloromethane	BQL	5.82	1	3/18/2010
Bromodichloromethane	BQL	5.82	1	3/18/2010
Bromoform	BQL	5.82	1	3/18/2010
Bromomethane	BQL	5.82	1	3/18/2010
2-Butanone	BQL	29.1	1	3/18/2010
n-Butylbenzene	BQL	5.82	1	3/18/2010
sec-Butylbenzene	BQL	5.82	1	3/18/2010
tert-Butylbenzene	BQL	5.82	1	3/18/2010
Carbon disulfide	BQL	5.82	1	3/18/2010
Carbon tetrachloride	BQL	5.82	1	3/18/2010
Chlorobenzene	BQL	5.82	1	3/18/2010
Chloroethane	BQL	5.82	1	3/18/2010
Chloroform	BQL	5.82	1	3/18/2010
Chloromethane	BQL	5.82	1	3/18/2010
2-Chlorotoluene	BQL	5.82	1	3/18/2010
4-Chlorotoluene	BQL	5.82	1	3/18/2010
Dibromochloromethane	BQL	5.82	1	3/18/2010
1,2-Dibromo-3-chloropropane	BQL	29.1	1	3/18/2010
Dibromomethane	BQL	5.82	1	3/18/2010
1,2-Dibromoethane (EDB)	BQL	5.82	1	3/18/2010
1,2-Dichlorobenzene	BQL	5.82	1	3/18/2010
1,3-Dichlorobenzene	BQL	5.82	1	3/18/2010
1,4-Dichlorobenzene	BQL	5.82	1	3/18/2010
trans-1,4-Dichloro-2-butene	BQL	29.1	1	3/18/2010
1,1-Dichloroethane	BQL	5.82	1	3/18/2010
1,1-Dichloroethene	BQL	5.82	1	3/18/2010
1,2-Dichloroethane	BQL	5.82	1	3/18/2010
cis-1,2-Dichloroethene	BQL	5.82	1	3/18/2010
trans-1,2-dichloroethene	BQL	5.82	1	3/18/2010
1,2-Dichloropropane	BQL	5.82	1	3/18/2010
1,3-Dichloropropane	BQL	5.82	1	3/18/2010
2,2-Dichloropropane	BQL	5.82	1	3/18/2010
1,1-Dichloropropene	BQL	5.82	1	3/18/2010
cis-1,3-Dichloropropene	BQL	5.82	1	3/18/2010
trans-1,3-Dichloropropene	BQL	5.82	1	3/18/2010
Dichlorodifluoromethane	BQL	5.82	1	3/18/2010
Diisopropyl ether (DIPE)	BQL	5.82	1	3/18/2010
Ethylbenzene	BQL	5.82	1	3/18/2010
Hexachlorobutadiene	BQL	5.82	1	3/18/2010
2-Hexanone	BQL	14.5	1	3/18/2010
Iodomethane	BQL	5.82	1	3/18/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-1-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-57E
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 10:50
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.03 g
%Solids: 71.2

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.82	1	3/18/2010
4-Isopropyltoluene	BQL	5.82	1	3/18/2010
Methylene chloride	BQL	23.3	1	3/18/2010
4-Methyl-2-pentanone	BQL	14.5	1	3/18/2010
Methyl-tert-butyl ether (MTBE)	BQL	5.82	1	3/18/2010
Naphthalene	BQL	5.82	1	3/18/2010
n-Propyl benzene	BQL	5.82	1	3/18/2010
Styrene	BQL	5.82	1	3/18/2010
1,1,1,2-Tetrachloroethane	BQL	5.82	1	3/18/2010
1,1,2,2-Tetrachloroethane	BQL	5.82	1	3/18/2010
Tetrachloroethene	BQL	5.82	1	3/18/2010
Toluene	BQL	5.82	1	3/18/2010
1,2,3-Trichlorobenzene	BQL	5.82	1	3/18/2010
1,2,4-Trichlorobenzene	BQL	5.82	1	3/18/2010
Trichloroethene	BQL	5.82	1	3/18/2010
1,1,1-Trichloroethane	BQL	5.82	1	3/18/2010
1,1,2-Trichloroethane	BQL	5.82	1	3/18/2010
Trichlorofluoromethane	BQL	5.82	1	3/18/2010
1,2,3-Trichloropropane	BQL	5.82	1	3/18/2010
1,2,4-Trimethylbenzene	BQL	5.82	1	3/18/2010
1,3,5-Trimethylbenzene	BQL	5.82	1	3/18/2010
Vinyl chloride	BQL	5.82	1	3/18/2010
m-,p-Xylene	BQL	11.6	1	3/18/2010
o-Xylene	BQL	5.82	1	3/18/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	82.6	165
Toluene-d8	50	53.2	106
4-Bromofluorobenzene	50	51.2	102

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: CJ

Reviewed By: DSA

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-1-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-57I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 33.72 g

Analyzed By: DCS
Date Collected: 3/10/2011 10:50
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 71.15

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	417	1	3/19/2010
Acenaphthylene	BQL	417	1	3/19/2010
Anthracene	BQL	417	1	3/19/2010
Benzo[a]anthracene	BQL	417	1	3/19/2010
Benzo[a]pyrene	BQL	417	1	3/19/2010
Benzo[b]fluoranthene	BQL	417	1	3/19/2010
Benzo[g,h,i]perylene	BQL	417	1	3/19/2010
Benzo[k]fluoranthene	BQL	417	1	3/19/2010
Benzoic Acid	BQL	2080	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	417	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	417	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	417	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	417	1	3/19/2010
4-bromophenyl phenyl ether	BQL	417	1	3/19/2010
Butylbenzylphthalate	BQL	417	1	3/19/2010
2-Chloronaphthalene	BQL	417	1	3/19/2010
2-Chlorophenol	BQL	417	1	3/19/2010
4-Chloro-3-methylphenol	BQL	417	1	3/19/2010
4-Chloroaniline	BQL	2080	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	417	1	3/19/2010
Chrysene	BQL	417	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	417	1	3/19/2010
Dibenzofuran	BQL	417	1	3/19/2010
Di-n-Butylphthalate	BQL	417	1	3/19/2010
1,2-Dichlorobenzene	BQL	417	1	3/19/2010
1,3-Dichlorobenzene	BQL	417	1	3/19/2010
1,4-Dichlorobenzene	BQL	417	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	834	1	3/19/2010
2,4-Dichlorophenol	BQL	417	1	3/19/2010
Diethylphthalate	BQL	417	1	3/19/2010
Dimethylphthalate	BQL	417	1	3/19/2010
2,4-Dimethylphenol	BQL	417	1	3/19/2010
Di-n-octylphthalate	BQL	417	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	2080	1	3/19/2010
2,4-Dinitrophenol	BQL	2080	1	3/19/2010
2,4-Dinitrotoluene	BQL	417	1	3/19/2010
2,6-Dinitrotoluene	BQL	417	1	3/19/2010
Diphenylamine *	BQL	417	1	3/19/2010
Fluoranthene	BQL	417	1	3/19/2010
Fluorene	BQL	417	1	3/19/2010
Hexachlorobenzene	BQL	417	1	3/19/2010
Hexachlorobutadiene	BQL	417	1	3/19/2010
Hexachlorocyclopentadiene	BQL	834	1	3/19/2010
Hexachloroethane	BQL	417	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	417	1	3/19/2010
Isophorone	BQL	417	1	3/19/2010
2-Methylnaphthalene	BQL	417	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-1-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-57I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 33.72 g

Analyzed By: DCS
Date Collected: 3/10/2011 10:50
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 71.15

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	417	1	3/19/2010
3- & 4-Methylphenol	BQL	417	1	3/19/2010
Naphthalene	BQL	417	1	3/19/2010
2-Nitroaniline	BQL	417	1	3/19/2010
3-Nitroaniline	BQL	2080	1	3/19/2010
4-Nitroaniline	BQL	2080	1	3/19/2010
Nitrobenzene	BQL	417	1	3/19/2010
2-Nitrophenol	BQL	417	1	3/19/2010
4-Nitrophenol	BQL	2080	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	417	1	3/19/2010
Pentachlorophenol	BQL	2080	1	3/19/2010
Phenanthrene	BQL	417	1	3/19/2010
Phenol	BQL	417	1	3/19/2010
Pyrene	BQL	417	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	417	1	3/19/2010
2,4,5-Trichlorophenol	BQL	417	1	3/19/2010
2,4,6-Trichlorophenol	BQL	417	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.1	81
2-Fluorophenol	10	9.6	96
Nitrobenzene-d5	10	9.1	91
Phenol-d6	10	9.5	95
2,4,6-Tribromophenol	10	8.4	84
4-Terphenyl-d14	10	10.6	106

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-2-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-58A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 11:10
Date Received: 3/11/2010
Matrix: Soil
Solids 71.88

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.20	mg/Kg	1	03/17/10 21:58

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	83.2	83.2		70-130

Comments:

Batch Information

Analytical Batch: VP031710
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 5.8 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By: _____
GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-2-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-58J
Lab Project ID: G341-616

Date Collected: 3/10/2011 11:10
Date Received: 3/11/2010
Matrix: Soil
Solids 71.88
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	8.09	mg/Kg	1	03/18/10 04:59

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	35.5	88.7

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16215
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 34.4 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By:

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-2-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-58E
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 11:10
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 5.5 g
%Solids: 71.9

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	63.2	1	3/22/2010
Benzene	BQL	6.32	1	3/22/2010
Bromobenzene	BQL	6.32	1	3/22/2010
Bromochloromethane	BQL	6.32	1	3/22/2010
Bromodichloromethane	BQL	6.32	1	3/22/2010
Bromoform	BQL	6.32	1	3/22/2010
Bromomethane	BQL	6.32	1	3/22/2010
2-Butanone	BQL	31.6	1	3/22/2010
n-Butylbenzene	BQL	6.32	1	3/22/2010
sec-Butylbenzene	BQL	6.32	1	3/22/2010
tert-Butylbenzene	BQL	6.32	1	3/22/2010
Carbon disulfide	BQL	6.32	1	3/22/2010
Carbon tetrachloride	BQL	6.32	1	3/22/2010
Chlorobenzene	BQL	6.32	1	3/22/2010
Chloroethane	BQL	6.32	1	3/22/2010
Chloroform	BQL	6.32	1	3/22/2010
Chloromethane	BQL	6.32	1	3/22/2010
2-Chlorotoluene	BQL	6.32	1	3/22/2010
4-Chlorotoluene	BQL	6.32	1	3/22/2010
Dibromochloromethane	BQL	6.32	1	3/22/2010
1,2-Dibromo-3-chloropropane	BQL	31.6	1	3/22/2010
Dibromomethane	BQL	6.32	1	3/22/2010
1,2-Dibromoethane (EDB)	BQL	6.32	1	3/22/2010
1,2-Dichlorobenzene	BQL	6.32	1	3/22/2010
1,3-Dichlorobenzene	BQL	6.32	1	3/22/2010
1,4-Dichlorobenzene	BQL	6.32	1	3/22/2010
trans-1,4-Dichloro-2-butene	BQL	31.6	1	3/22/2010
1,1-Dichloroethane	BQL	6.32	1	3/22/2010
1,1-Dichloroethene	BQL	6.32	1	3/22/2010
1,2-Dichloroethane	BQL	6.32	1	3/22/2010
cis-1,2-Dichloroethene	BQL	6.32	1	3/22/2010
trans-1,2-dichloroethene	BQL	6.32	1	3/22/2010
1,2-Dichloropropane	BQL	6.32	1	3/22/2010
1,3-Dichloropropane	BQL	6.32	1	3/22/2010
2,2-Dichloropropane	BQL	6.32	1	3/22/2010
1,1-Dichloropropene	BQL	6.32	1	3/22/2010
cis-1,3-Dichloropropene	BQL	6.32	1	3/22/2010
trans-1,3-Dichloropropene	BQL	6.32	1	3/22/2010
Dichlorodifluoromethane	BQL	6.32	1	3/22/2010
Diisopropyl ether (DIPE)	BQL	6.32	1	3/22/2010
Ethylbenzene	BQL	6.32	1	3/22/2010
Hexachlorobutadiene	BQL	6.32	1	3/22/2010
2-Hexanone	BQL	15.8	1	3/22/2010
Iodomethane	BQL	6.32	1	3/22/2010

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-2-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-58E
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 11:10
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 5.5 g
%Solids: 71.9

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	6.32	1	3/22/2010
4-Isopropyltoluene	BQL	6.32	1	3/22/2010
Methylene chloride	BQL	25.3	1	3/22/2010
4-Methyl-2-pentanone	BQL	15.8	1	3/22/2010
Methyl-tert-butyl ether (MTBE)	BQL	6.32	1	3/22/2010
Naphthalene	BQL	6.32	1	3/22/2010
n-Propyl benzene	BQL	6.32	1	3/22/2010
Styrene	BQL	6.32	1	3/22/2010
1,1,1,2-Tetrachloroethane	BQL	6.32	1	3/22/2010
1,1,2,2-Tetrachloroethane	BQL	6.32	1	3/22/2010
Tetrachloroethene	BQL	6.32	1	3/22/2010
Toluene	BQL	6.32	1	3/22/2010
1,2,3-Trichlorobenzene	BQL	6.32	1	3/22/2010
1,2,4-Trichlorobenzene	BQL	6.32	1	3/22/2010
Trichloroethene	BQL	6.32	1	3/22/2010
1,1,1-Trichloroethane	BQL	6.32	1	3/22/2010
1,1,2-Trichloroethane	BQL	6.32	1	3/22/2010
Trichlorofluoromethane	BQL	6.32	1	3/22/2010
1,2,3-Trichloropropane	BQL	6.32	1	3/22/2010
1,2,4-Trimethylbenzene	BQL	6.32	1	3/22/2010
1,3,5-Trimethylbenzene	BQL	6.32	1	3/22/2010
Vinyl chloride	BQL	6.32	1	3/22/2010
m-,p-Xylene	BQL	12.6	1	3/22/2010
o-Xylene	BQL	6.32	1	3/22/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	66.9	134
Toluene-d8	50	50.4	101
4-Bromofluorobenzene	50	48.6	97

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-2-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-58I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.64 g

Analyzed By: DCS
Date Collected: 3/10/2011 11:10
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 71.88

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	426	1	3/19/2010
Acenaphthylene	BQL	426	1	3/19/2010
Anthracene	BQL	426	1	3/19/2010
Benzo[a]anthracene	BQL	426	1	3/19/2010
Benzo[a]pyrene	BQL	426	1	3/19/2010
Benzo[b]fluoranthene	BQL	426	1	3/19/2010
Benzo[g,h,i]perylene	BQL	426	1	3/19/2010
Benzo[k]fluoranthene	BQL	426	1	3/19/2010
Benzoic Acid	BQL	2130	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	426	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	426	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	426	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	426	1	3/19/2010
4-bromophenyl phenyl ether	BQL	426	1	3/19/2010
Butylbenzylphthalate	BQL	426	1	3/19/2010
2-Chloronaphthalene	BQL	426	1	3/19/2010
2-Chlorophenol	BQL	426	1	3/19/2010
4-Chloro-3-methylphenol	BQL	426	1	3/19/2010
4-Chloroaniline	BQL	2130	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	426	1	3/19/2010
Chrysene	BQL	426	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	426	1	3/19/2010
Dibenzofuran	BQL	426	1	3/19/2010
Di-n-Butylphthalate	BQL	426	1	3/19/2010
1,2-Dichlorobenzene	BQL	426	1	3/19/2010
1,3-Dichlorobenzene	BQL	426	1	3/19/2010
1,4-Dichlorobenzene	BQL	426	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	852	1	3/19/2010
2,4-Dichlorophenol	BQL	426	1	3/19/2010
Diethylphthalate	BQL	426	1	3/19/2010
Dimethylphthalate	BQL	426	1	3/19/2010
2,4-Dimethylphenol	BQL	426	1	3/19/2010
Di-n-octylphthalate	BQL	426	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	2130	1	3/19/2010
2,4-Dinitrophenol	BQL	2130	1	3/19/2010
2,4-Dinitrotoluene	BQL	426	1	3/19/2010
2,6-Dinitrotoluene	BQL	426	1	3/19/2010
Diphenylamine *	BQL	426	1	3/19/2010
Fluoranthene	BQL	426	1	3/19/2010
Fluorene	BQL	426	1	3/19/2010
Hexachlorobenzene	BQL	426	1	3/19/2010
Hexachlorobutadiene	BQL	426	1	3/19/2010
Hexachlorocyclopentadiene	BQL	852	1	3/19/2010
Hexachloroethane	BQL	426	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	426	1	3/19/2010
Isophorone	BQL	426	1	3/19/2010
2-Methylnaphthalene	BQL	426	1	3/19/2010

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-2-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-58I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.64 g

Analyzed By: DCS
Date Collected: 3/10/2011 11:10
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 71.88

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	426	1	3/19/2010
3- & 4-Methylphenol	BQL	426	1	3/19/2010
Naphthalene	BQL	426	1	3/19/2010
2-Nitroaniline	BQL	426	1	3/19/2010
3-Nitroaniline	BQL	2130	1	3/19/2010
4-Nitroaniline	BQL	2130	1	3/19/2010
Nitrobenzene	BQL	426	1	3/19/2010
2-Nitrophenol	BQL	426	1	3/19/2010
4-Nitrophenol	BQL	2130	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	426	1	3/19/2010
Pentachlorophenol	BQL	2130	1	3/19/2010
Phenanthrene	BQL	426	1	3/19/2010
Phenol	BQL	426	1	3/19/2010
Pyrene	BQL	426	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	426	1	3/19/2010
2,4,5-Trichlorophenol	BQL	426	1	3/19/2010
2,4,6-Trichlorophenol	BQL	426	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.4	64
2-Fluorophenol	10	8.9	89
Nitrobenzene-d5	10	8.1	81
Phenol-d6	10	8.9	89
2,4,6-Tribromophenol	10	7	70
4-Terphenyl-d14	10	9.9	99

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	S8-3-4	Analyzed By:	BAO
Client Project ID:	U-3810/NCDOT 001100	Date Collected:	3/10/2011 11:20
Lab Sample ID:	G341-616-59A	Date Received:	3/11/2010
Lab Project ID:	G341-616	Matrix:	Soil
Report Basis:	Dry Weight	Solids	78.84

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.50	mg/Kg	1	03/17/10 22:25

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	84.5	84.5		70-130

Comments:

Batch Information

Analytical Batch:	VP031710	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	5.85 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	BAO		

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-3-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-59J
Lab Project ID: G341-616

Date Collected: 3/10/2011 11:20
Date Received: 3/11/2010
Matrix: Soil
Solids 78.84
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.53	mg/Kg	1	03/18/10 05:27

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.3	80.7

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16215
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 33.7 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-3-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-59D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 11:20
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.11 g
%Solids: 78.8

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	51.8	1	3/18/2010
Benzene	BQL	5.18	1	3/18/2010
Bromobenzene	BQL	5.18	1	3/18/2010
Bromochloromethane	BQL	5.18	1	3/18/2010
Bromodichloromethane	BQL	5.18	1	3/18/2010
Bromoform	BQL	5.18	1	3/18/2010
Bromomethane	BQL	5.18	1	3/18/2010
2-Butanone	BQL	25.9	1	3/18/2010
n-Butylbenzene	BQL	5.18	1	3/18/2010
sec-Butylbenzene	BQL	5.18	1	3/18/2010
tert-Butylbenzene	BQL	5.18	1	3/18/2010
Carbon disulfide	BQL	5.18	1	3/18/2010
Carbon tetrachloride	BQL	5.18	1	3/18/2010
Chlorobenzene	BQL	5.18	1	3/18/2010
Chloroethane	BQL	5.18	1	3/18/2010
Chloroform	BQL	5.18	1	3/18/2010
Chloromethane	BQL	5.18	1	3/18/2010
2-Chlorotoluene	BQL	5.18	1	3/18/2010
4-Chlorotoluene	BQL	5.18	1	3/18/2010
Dibromochloromethane	BQL	5.18	1	3/18/2010
1,2-Dibromo-3-chloropropane	BQL	25.9	1	3/18/2010
Dibromomethane	BQL	5.18	1	3/18/2010
1,2-Dibromoethane (EDB)	BQL	5.18	1	3/18/2010
1,2-Dichlorobenzene	BQL	5.18	1	3/18/2010
1,3-Dichlorobenzene	BQL	5.18	1	3/18/2010
1,4-Dichlorobenzene	BQL	5.18	1	3/18/2010
trans-1,4-Dichloro-2-butene	BQL	25.9	1	3/18/2010
1,1-Dichloroethane	BQL	5.18	1	3/18/2010
1,1-Dichloroethene	BQL	5.18	1	3/18/2010
1,2-Dichloroethane	BQL	5.18	1	3/18/2010
cis-1,2-Dichloroethene	BQL	5.18	1	3/18/2010
trans-1,2-dichloroethene	BQL	5.18	1	3/18/2010
1,2-Dichloropropane	BQL	5.18	1	3/18/2010
1,3-Dichloropropane	BQL	5.18	1	3/18/2010
2,2-Dichloropropane	BQL	5.18	1	3/18/2010
1,1-Dichloropropene	BQL	5.18	1	3/18/2010
cis-1,3-Dichloropropene	BQL	5.18	1	3/18/2010
trans-1,3-Dichloropropene	BQL	5.18	1	3/18/2010
Dichlorodifluoromethane	BQL	5.18	1	3/18/2010
Diisopropyl ether (DIPE)	BQL	5.18	1	3/18/2010
Ethylbenzene	BQL	5.18	1	3/18/2010
Hexachlorobutadiene	BQL	5.18	1	3/18/2010
2-Hexanone	BQL	13.0	1	3/18/2010
Iodomethane	BQL	5.18	1	3/18/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-3-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-59D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 11:20
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.11 g
%Solids: 78.8

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.18	1	3/18/2010
4-Isopropyltoluene	BQL	5.18	1	3/18/2010
Methylene chloride	BQL	20.7	1	3/18/2010
4-Methyl-2-pentanone	BQL	13.0	1	3/18/2010
Methyl-tert-butyl ether (MTBE)	BQL	5.18	1	3/18/2010
Naphthalene	BQL	5.18	1	3/18/2010
n-Propyl benzene	BQL	5.18	1	3/18/2010
Styrene	BQL	5.18	1	3/18/2010
1,1,1,2-Tetrachloroethane	BQL	5.18	1	3/18/2010
1,1,2,2-Tetrachloroethane	BQL	5.18	1	3/18/2010
Tetrachloroethene	BQL	5.18	1	3/18/2010
Toluene	BQL	5.18	1	3/18/2010
1,2,3-Trichlorobenzene	BQL	5.18	1	3/18/2010
1,2,4-Trichlorobenzene	BQL	5.18	1	3/18/2010
Trichloroethene	BQL	5.18	1	3/18/2010
1,1,1-Trichloroethane	BQL	5.18	1	3/18/2010
1,1,2-Trichloroethane	BQL	5.18	1	3/18/2010
Trichlorofluoromethane	BQL	5.18	1	3/18/2010
1,2,3-Trichloropropane	BQL	5.18	1	3/18/2010
1,2,4-Trimethylbenzene	BQL	5.18	1	3/18/2010
1,3,5-Trimethylbenzene	BQL	5.18	1	3/18/2010
Vinyl chloride	BQL	5.18	1	3/18/2010
m-,p-Xylene	BQL	10.4	1	3/18/2010
o-Xylene	BQL	5.18	1	3/18/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	86	172
Toluene-d8	50	53.9	108
4-Bromofluorobenzene	50	51	102

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: CL

Reviewed By: [signature]

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-3-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-59I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.5 g

Analyzed By: DCS
Date Collected: 3/10/2011 11:20
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 78.84

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	390	1	3/19/2010
Acenaphthylene	BQL	390	1	3/19/2010
Anthracene	BQL	390	1	3/19/2010
Benzo[a]anthracene	BQL	390	1	3/19/2010
Benzo[a]pyrene	BQL	390	1	3/19/2010
Benzo[b]fluoranthene	BQL	390	1	3/19/2010
Benzo[g,h,i]perylene	BQL	390	1	3/19/2010
Benzo[k]fluoranthene	BQL	390	1	3/19/2010
Benzoic Acid	BQL	1950	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	390	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	390	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	390	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	390	1	3/19/2010
4-bromophenyl phenyl ether	BQL	390	1	3/19/2010
Butylbenzylphthalate	BQL	390	1	3/19/2010
2-Chloronaphthalene	BQL	390	1	3/19/2010
2-Chlorophenol	BQL	390	1	3/19/2010
4-Chloro-3-methylphenol	BQL	390	1	3/19/2010
4-Chloroaniline	BQL	1950	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	390	1	3/19/2010
Chrysene	BQL	390	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	390	1	3/19/2010
Dibenzofuran	BQL	390	1	3/19/2010
Di-n-Butylphthalate	BQL	390	1	3/19/2010
1,2-Dichlorobenzene	BQL	390	1	3/19/2010
1,3-Dichlorobenzene	BQL	390	1	3/19/2010
1,4-Dichlorobenzene	BQL	390	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	781	1	3/19/2010
2,4-Dichlorophenol	BQL	390	1	3/19/2010
Diethylphthalate	BQL	390	1	3/19/2010
Dimethylphthalate	BQL	390	1	3/19/2010
2,4-Dimethylphenol	BQL	390	1	3/19/2010
Di-n-octylphthalate	BQL	390	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	1950	1	3/19/2010
2,4-Dinitrophenol	BQL	1950	1	3/19/2010
2,4-Dinitrotoluene	BQL	390	1	3/19/2010
2,6-Dinitrotoluene	BQL	390	1	3/19/2010
Diphenylamine *	BQL	390	1	3/19/2010
Fluoranthene	BQL	390	1	3/19/2010
Fluorene	BQL	390	1	3/19/2010
Hexachlorobenzene	BQL	390	1	3/19/2010
Hexachlorobutadiene	BQL	390	1	3/19/2010
Hexachlorocyclopentadiene	BQL	781	1	3/19/2010
Hexachloroethane	BQL	390	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	390	1	3/19/2010
Isophorone	BQL	390	1	3/19/2010
2-Methylnaphthalene	BQL	390	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-3-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-59l
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.5 g

Analyzed By: DCS
Date Collected: 3/10/2011 11:20
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 78.84

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	390	1	3/19/2010
3- & 4-Methylphenol	BQL	390	1	3/19/2010
Naphthalene	BQL	390	1	3/19/2010
2-Nitroaniline	BQL	390	1	3/19/2010
3-Nitroaniline	BQL	1950	1	3/19/2010
4-Nitroaniline	BQL	1950	1	3/19/2010
Nitrobenzene	BQL	390	1	3/19/2010
2-Nitrophenol	BQL	390	1	3/19/2010
4-Nitrophenol	BQL	1950	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	390	1	3/19/2010
Pentachlorophenol	BQL	1950	1	3/19/2010
Phenanthrene	BQL	390	1	3/19/2010
Phenol	BQL	390	1	3/19/2010
Pyrene	BQL	390	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	390	1	3/19/2010
2,4,5-Trichlorophenol	BQL	390	1	3/19/2010
2,4,6-Trichlorophenol	BQL	390	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.3	83
2-Fluorophenol	10	9.6	96
Nitrobenzene-d5	10	9	90
Phenol-d6	10	9.6	96
2,4,6-Tribromophenol	10	8.3	83
4-Terphenyl-d14	10	10.5	105

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: DSD

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-4-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-60A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 12:00
Date Received: 3/11/2010
Matrix: Soil
Solids 80.57

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.19	mg/Kg	1	03/17/10 22:52

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	82.6	82.6		70-130

Comments:

Batch Information

Analytical Batch: VP031710
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.02 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-4-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-60J
Lab Project ID: G341-616

Date Collected: 3/10/2011 12:00
Date Received: 3/11/2010
Matrix: Soil
Solids 80.57
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.62	mg/Kg	1	03/18/10 05:55

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	41.2	103

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16215
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 32.58 G
Prep Final Vol: 10 mL

Analyst: FA

NC Certification #481

Reviewed By:

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-4-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-60D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:00
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.53 g
%Solids: 80.6

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	47.5	1	3/18/2010
Benzene	BQL	4.75	1	3/18/2010
Bromobenzene	BQL	4.75	1	3/18/2010
Bromochloromethane	BQL	4.75	1	3/18/2010
Bromodichloromethane	BQL	4.75	1	3/18/2010
Bromoform	BQL	4.75	1	3/18/2010
Bromomethane	BQL	4.75	1	3/18/2010
2-Butanone	BQL	23.8	1	3/18/2010
n-Butylbenzene	BQL	4.75	1	3/18/2010
sec-Butylbenzene	BQL	4.75	1	3/18/2010
tert-Butylbenzene	BQL	4.75	1	3/18/2010
Carbon disulfide	BQL	4.75	1	3/18/2010
Carbon tetrachloride	BQL	4.75	1	3/18/2010
Chlorobenzene	BQL	4.75	1	3/18/2010
Chloroethane	BQL	4.75	1	3/18/2010
Chloroform	BQL	4.75	1	3/18/2010
Chloromethane	BQL	4.75	1	3/18/2010
2-Chlorotoluene	BQL	4.75	1	3/18/2010
4-Chlorotoluene	BQL	4.75	1	3/18/2010
Dibromochloromethane	BQL	4.75	1	3/18/2010
1,2-Dibromo-3-chloropropane	BQL	23.8	1	3/18/2010
Dibromomethane	BQL	4.75	1	3/18/2010
1,2-Dibromoethane (EDB)	BQL	4.75	1	3/18/2010
1,2-Dichlorobenzene	BQL	4.75	1	3/18/2010
1,3-Dichlorobenzene	BQL	4.75	1	3/18/2010
1,4-Dichlorobenzene	BQL	4.75	1	3/18/2010
trans-1,4-Dichloro-2-butene	BQL	23.8	1	3/18/2010
1,1-Dichloroethane	BQL	4.75	1	3/18/2010
1,1-Dichloroethene	BQL	4.75	1	3/18/2010
1,2-Dichloroethane	BQL	4.75	1	3/18/2010
cis-1,2-Dichloroethene	BQL	4.75	1	3/18/2010
trans-1,2-dichloroethene	BQL	4.75	1	3/18/2010
1,2-Dichloropropane	BQL	4.75	1	3/18/2010
1,3-Dichloropropane	BQL	4.75	1	3/18/2010
2,2-Dichloropropane	BQL	4.75	1	3/18/2010
1,1-Dichloropropene	BQL	4.75	1	3/18/2010
cis-1,3-Dichloropropene	BQL	4.75	1	3/18/2010
trans-1,3-Dichloropropene	BQL	4.75	1	3/18/2010
Dichlorodifluoromethane	BQL	4.75	1	3/18/2010
Diisopropyl ether (DIPE)	BQL	4.75	1	3/18/2010
Ethylbenzene	BQL	4.75	1	3/18/2010
Hexachlorobutadiene	BQL	4.75	1	3/18/2010
2-Hexanone	BQL	11.9	1	3/18/2010
Iodomethane	BQL	4.75	1	3/18/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-4-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-60D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:00
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.53 g
%Solids: 80.6

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	4.75	1	3/18/2010
4-Isopropyltoluene	BQL	4.75	1	3/18/2010
Methylene chloride	BQL	19.0	1	3/18/2010
4-Methyl-2-pentanone	BQL	11.9	1	3/18/2010
Methyl-tert-butyl ether (MTBE)	BQL	4.75	1	3/18/2010
Naphthalene	BQL	4.75	1	3/18/2010
n-Propyl benzene	BQL	4.75	1	3/18/2010
Styrene	BQL	4.75	1	3/18/2010
1,1,1,2-Tetrachloroethane	BQL	4.75	1	3/18/2010
1,1,2,2-Tetrachloroethane	BQL	4.75	1	3/18/2010
Tetrachloroethene	BQL	4.75	1	3/18/2010
Toluene	BQL	4.75	1	3/18/2010
1,2,3-Trichlorobenzene	BQL	4.75	1	3/18/2010
1,2,4-Trichlorobenzene	BQL	4.75	1	3/18/2010
Trichloroethene	BQL	4.75	1	3/18/2010
1,1,1-Trichloroethane	BQL	4.75	1	3/18/2010
1,1,2-Trichloroethane	BQL	4.75	1	3/18/2010
Trichlorofluoromethane	BQL	4.75	1	3/18/2010
1,2,3-Trichloropropane	BQL	4.75	1	3/18/2010
1,2,4-Trimethylbenzene	BQL	4.75	1	3/18/2010
1,3,5-Trimethylbenzene	BQL	4.75	1	3/18/2010
Vinyl chloride	BQL	4.75	1	3/18/2010
m-,p-Xylene	BQL	9.50	1	3/18/2010
o-Xylene	BQL	4.75	1	3/18/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	87.1	174 #
Toluene-d8	50	53.2	106
4-Bromofluorobenzene	50	50.2	100

Comments:
Surrogate recoveries were confirmed by duplicate analysis.

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-4-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-60l
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.45 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:00
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 80.57

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	382	1	3/19/2010
Acenaphthylene	BQL	382	1	3/19/2010
Anthracene	BQL	382	1	3/19/2010
Benzo[a]anthracene	BQL	382	1	3/19/2010
Benzo[a]pyrene	BQL	382	1	3/19/2010
Benzo[b]fluoranthene	BQL	382	1	3/19/2010
Benzo[g,h,i]perylene	BQL	382	1	3/19/2010
Benzo[k]fluoranthene	BQL	382	1	3/19/2010
Benzoic Acid	BQL	1910	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	382	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	382	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	382	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	382	1	3/19/2010
4-bromophenyl phenyl ether	BQL	382	1	3/19/2010
Butylbenzylphthalate	BQL	382	1	3/19/2010
2-Chloronaphthalene	BQL	382	1	3/19/2010
2-Chlorophenol	BQL	382	1	3/19/2010
4-Chloro-3-methylphenol	BQL	382	1	3/19/2010
4-Chloroaniline	BQL	1910	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	382	1	3/19/2010
Chrysene	BQL	382	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	382	1	3/19/2010
Dibenzofuran	BQL	382	1	3/19/2010
Di-n-Butylphthalate	BQL	382	1	3/19/2010
1,2-Dichlorobenzene	BQL	382	1	3/19/2010
1,3-Dichlorobenzene	BQL	382	1	3/19/2010
1,4-Dichlorobenzene	BQL	382	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	765	1	3/19/2010
2,4-Dichlorophenol	BQL	382	1	3/19/2010
Diethylphthalate	BQL	382	1	3/19/2010
Dimethylphthalate	BQL	382	1	3/19/2010
2,4-Dimethylphenol	BQL	382	1	3/19/2010
Di-n-octylphthalate	BQL	382	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	1910	1	3/19/2010
2,4-Dinitrophenol	BQL	1910	1	3/19/2010
2,4-Dinitrotoluene	BQL	382	1	3/19/2010
2,6-Dinitrotoluene	BQL	382	1	3/19/2010
Diphenylamine *	BQL	382	1	3/19/2010
Fluoranthene	BQL	382	1	3/19/2010
Fluorene	BQL	382	1	3/19/2010
Hexachlorobenzene	BQL	382	1	3/19/2010
Hexachlorobutadiene	BQL	382	1	3/19/2010
Hexachlorocyclopentadiene	BQL	765	1	3/19/2010
Hexachloroethane	BQL	382	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	382	1	3/19/2010
Isophorone	BQL	382	1	3/19/2010
2-Methylnaphthalene	BQL	382	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-4-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-60l
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.45 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:00
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 80.57

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	382	1	3/19/2010
3- & 4-Methylphenol	BQL	382	1	3/19/2010
Naphthalene	BQL	382	1	3/19/2010
2-Nitroaniline	BQL	382	1	3/19/2010
3-Nitroaniline	BQL	1910	1	3/19/2010
4-Nitroaniline	BQL	1910	1	3/19/2010
Nitrobenzene	BQL	382	1	3/19/2010
2-Nitrophenol	BQL	382	1	3/19/2010
4-Nitrophenol	BQL	1910	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	382	1	3/19/2010
Pentachlorophenol	BQL	1910	1	3/19/2010
Phenanthrene	BQL	382	1	3/19/2010
Phenol	BQL	382	1	3/19/2010
Pyrene	BQL	382	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	382	1	3/19/2010
2,4,5-Trichlorophenol	BQL	382	1	3/19/2010
2,4,6-Trichlorophenol	BQL	382	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.3	73
2-Fluorophenol	10	8.8	88
Nitrobenzene-d5	10	8.1	81
Phenol-d6	10	8.6	86
2,4,6-Tribromophenol	10	7.1	71
4-Terphenyl-d14	10	9.1	91

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	S8-5-8	Analyzed By:	BAO
Client Project ID:	U-3810/NCDOT 001100	Date Collected:	3/10/2011 12:15
Lab Sample ID:	G341-616-61A	Date Received:	3/11/2010
Lab Project ID:	G341-616	Matrix:	Soil
Report Basis:	Dry Weight	Solids	75.46

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.00	mg/Kg	1	03/17/10 23:18

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	84.9	84.9		70-130

Comments:

Batch Information

Analytical Batch:	VP031710	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.63 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	BAO		

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-5-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-61J
Lab Project ID: G341-616

Date Collected: 3/10/2011 12:15
Date Received: 3/11/2010
Matrix: Soil
Solids 75.46
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	8.32	mg/Kg	1	03/18/10 09:35

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	38.8	97.1

Comments:

Batch Information

Analytical Batch: EP031810
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16216
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 31.86 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-5-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-61D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:15
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 5.71 g
%Solids: 75.5

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	58.0	1	3/18/2010
Benzene	BQL	5.80	1	3/18/2010
Bromobenzene	BQL	5.80	1	3/18/2010
Bromochloromethane	BQL	5.80	1	3/18/2010
Bromodichloromethane	BQL	5.80	1	3/18/2010
Bromoform	BQL	5.80	1	3/18/2010
Bromomethane	BQL	5.80	1	3/18/2010
2-Butanone	BQL	29.0	1	3/18/2010
n-Butylbenzene	BQL	5.80	1	3/18/2010
sec-Butylbenzene	BQL	5.80	1	3/18/2010
tert-Butylbenzene	BQL	5.80	1	3/18/2010
Carbon disulfide	BQL	5.80	1	3/18/2010
Carbon tetrachloride	BQL	5.80	1	3/18/2010
Chlorobenzene	BQL	5.80	1	3/18/2010
Chloroethane	BQL	5.80	1	3/18/2010
Chloroform	BQL	5.80	1	3/18/2010
Chloromethane	BQL	5.80	1	3/18/2010
2-Chlorotoluene	BQL	5.80	1	3/18/2010
4-Chlorotoluene	BQL	5.80	1	3/18/2010
Dibromochloromethane	BQL	5.80	1	3/18/2010
1,2-Dibromo-3-chloropropane	BQL	29.0	1	3/18/2010
Dibromomethane	BQL	5.80	1	3/18/2010
1,2-Dibromoethane (EDB)	BQL	5.80	1	3/18/2010
1,2-Dichlorobenzene	BQL	5.80	1	3/18/2010
1,3-Dichlorobenzene	BQL	5.80	1	3/18/2010
1,4-Dichlorobenzene	BQL	5.80	1	3/18/2010
trans-1,4-Dichloro-2-butene	BQL	29.0	1	3/18/2010
1,1-Dichloroethane	BQL	5.80	1	3/18/2010
1,1-Dichloroethene	BQL	5.80	1	3/18/2010
1,2-Dichloroethane	BQL	5.80	1	3/18/2010
cis-1,2-Dichloroethene	BQL	5.80	1	3/18/2010
trans-1,2-dichloroethene	BQL	5.80	1	3/18/2010
1,2-Dichloropropane	BQL	5.80	1	3/18/2010
1,3-Dichloropropane	BQL	5.80	1	3/18/2010
2,2-Dichloropropane	BQL	5.80	1	3/18/2010
1,1-Dichloropropene	BQL	5.80	1	3/18/2010
cis-1,3-Dichloropropene	BQL	5.80	1	3/18/2010
trans-1,3-Dichloropropene	BQL	5.80	1	3/18/2010
Dichlorodifluoromethane	BQL	5.80	1	3/18/2010
Diisopropyl ether (DIPE)	BQL	5.80	1	3/18/2010
Ethylbenzene	BQL	5.80	1	3/18/2010
Hexachlorobutadiene	BQL	5.80	1	3/18/2010
2-Hexanone	BQL	14.5	1	3/18/2010
Iodomethane	BQL	5.80	1	3/18/2010

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-5-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-61D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:15
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 5.71 g
%Solids: 75.5

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.80	1	3/18/2010
4-Isopropyltoluene	BQL	5.80	1	3/18/2010
Methylene chloride	BQL	23.2	1	3/18/2010
4-Methyl-2-pentanone	BQL	14.5	1	3/18/2010
Methyl-tert-butyl ether (MTBE)	BQL	5.80	1	3/18/2010
Naphthalene	BQL	5.80	1	3/18/2010
n-Propyl benzene	BQL	5.80	1	3/18/2010
Styrene	BQL	5.80	1	3/18/2010
1,1,1,2-Tetrachloroethane	BQL	5.80	1	3/18/2010
1,1,2,2-Tetrachloroethane	BQL	5.80	1	3/18/2010
Tetrachloroethene	BQL	5.80	1	3/18/2010
Toluene	BQL	5.80	1	3/18/2010
1,2,3-Trichlorobenzene	BQL	5.80	1	3/18/2010
1,2,4-Trichlorobenzene	BQL	5.80	1	3/18/2010
Trichloroethene	BQL	5.80	1	3/18/2010
1,1,1-Trichloroethane	BQL	5.80	1	3/18/2010
1,1,2-Trichloroethane	BQL	5.80	1	3/18/2010
Trichlorofluoromethane	BQL	5.80	1	3/18/2010
1,2,3-Trichloropropane	BQL	5.80	1	3/18/2010
1,2,4-Trimethylbenzene	BQL	5.80	1	3/18/2010
1,3,5-Trimethylbenzene	BQL	5.80	1	3/18/2010
Vinyl chloride	BQL	5.80	1	3/18/2010
m-,p-Xylene	BQL	11.6	1	3/18/2010
o-Xylene	BQL	5.80	1	3/18/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	85.7	171
Toluene-d8	50	54.1	108
4-Bromofluorobenzene	50	51.3	103

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-5-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-61I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.79 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:15
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 75.46

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	404	1	3/19/2010
Acenaphthylene	BQL	404	1	3/19/2010
Anthracene	BQL	404	1	3/19/2010
Benzo[a]anthracene	BQL	404	1	3/19/2010
Benzo[a]pyrene	BQL	404	1	3/19/2010
Benzo[b]fluoranthene	BQL	404	1	3/19/2010
Benzo[g,h,i]perylene	BQL	404	1	3/19/2010
Benzo[k]fluoranthene	BQL	404	1	3/19/2010
Benzoic Acid	BQL	2020	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	404	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	404	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	404	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	404	1	3/19/2010
4-bromophenyl phenyl ether	BQL	404	1	3/19/2010
Butylbenzylphthalate	BQL	404	1	3/19/2010
2-Chloronaphthalene	BQL	404	1	3/19/2010
2-Chlorophenol	BQL	404	1	3/19/2010
4-Chloro-3-methylphenol	BQL	404	1	3/19/2010
4-Chloroaniline	BQL	2020	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	404	1	3/19/2010
Chrysene	BQL	404	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	404	1	3/19/2010
Dibenzofuran	BQL	404	1	3/19/2010
Di-n-Butylphthalate	BQL	404	1	3/19/2010
1,2-Dichlorobenzene	BQL	404	1	3/19/2010
1,3-Dichlorobenzene	BQL	404	1	3/19/2010
1,4-Dichlorobenzene	BQL	404	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	808	1	3/19/2010
2,4-Dichlorophenol	BQL	404	1	3/19/2010
Diethylphthalate	BQL	404	1	3/19/2010
Dimethylphthalate	BQL	404	1	3/19/2010
2,4-Dimethylphenol	BQL	404	1	3/19/2010
Di-n-octylphthalate	BQL	404	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	2020	1	3/19/2010
2,4-Dinitrophenol	BQL	2020	1	3/19/2010
2,4-Dinitrotoluene	BQL	404	1	3/19/2010
2,6-Dinitrotoluene	BQL	404	1	3/19/2010
Diphenylamine *	BQL	404	1	3/19/2010
Fluoranthene	BQL	404	1	3/19/2010
Fluorene	BQL	404	1	3/19/2010
Hexachlorobenzene	BQL	404	1	3/19/2010
Hexachlorobutadiene	BQL	404	1	3/19/2010
Hexachlorocyclopentadiene	BQL	808	1	3/19/2010
Hexachloroethane	BQL	404	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	404	1	3/19/2010
Isophorone	BQL	404	1	3/19/2010
2-Methylnaphthalene	BQL	404	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-5-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-61I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.79 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:15
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 75.46

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	404	1	3/19/2010
3- & 4-Methylphenol	BQL	404	1	3/19/2010
Naphthalene	BQL	404	1	3/19/2010
2-Nitroaniline	BQL	404	1	3/19/2010
3-Nitroaniline	BQL	2020	1	3/19/2010
4-Nitroaniline	BQL	2020	1	3/19/2010
Nitrobenzene	BQL	404	1	3/19/2010
2-Nitrophenol	BQL	404	1	3/19/2010
4-Nitrophenol	BQL	2020	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	404	1	3/19/2010
Pentachlorophenol	BQL	2020	1	3/19/2010
Phenanthrene	BQL	404	1	3/19/2010
Phenol	BQL	404	1	3/19/2010
Pyrene	BQL	404	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	404	1	3/19/2010
2,4,5-Trichlorophenol	BQL	404	1	3/19/2010
2,4,6-Trichlorophenol	BQL	404	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	5.6	56
2-Fluorophenol	10	8.8	88
Nitrobenzene-d5	10	8.1	81
Phenol-d6	10	9	90
2,4,6-Tribromophenol	10	6.6	66
4-Terphenyl-d14	10	8.7	87

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	S8-6-8	Analyzed By:	BAO
Client Project ID:	U-3810/NCDOT 001100	Date Collected:	3/10/2011 12:30
Lab Sample ID:	G341-616-62A	Date Received:	3/11/2010
Lab Project ID:	G341-616	Matrix:	Soil
Report Basis:	Dry Weight	Solids	68.05

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.94	mg/Kg	1	03/18/10 11:17

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	84.3	84.3		70-130

Comments:

Batch Information

Analytical Batch:	VP031810	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.35 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	BAO		

Analyst: BAO

NC Certification #481

Reviewed By: _____
GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-6-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-62J
Lab Project ID: G341-616

Date Collected: 3/10/2011 12:30
Date Received: 3/11/2010
Matrix: Soil
Solids 68.05
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	9.05	mg/Kg	1	03/18/10 10:03

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	36.3	90.6

Comments:

Batch Information

Analytical Batch: EP031810
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16216
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 32.46 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-6-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-62F
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:30
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.40 g
%Solids: 68.1

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	57.4	1	3/22/2010
Benzene	BQL	5.74	1	3/22/2010
Bromobenzene	BQL	5.74	1	3/22/2010
Bromochloromethane	BQL	5.74	1	3/22/2010
Bromodichloromethane	BQL	5.74	1	3/22/2010
Bromoform	BQL	5.74	1	3/22/2010
Bromomethane	BQL	5.74	1	3/22/2010
2-Butanone	BQL	28.7	1	3/22/2010
n-Butylbenzene	BQL	5.74	1	3/22/2010
sec-Butylbenzene	BQL	5.74	1	3/22/2010
tert-Butylbenzene	BQL	5.74	1	3/22/2010
Carbon disulfide	BQL	5.74	1	3/22/2010
Carbon tetrachloride	BQL	5.74	1	3/22/2010
Chlorobenzene	BQL	5.74	1	3/22/2010
Chloroethane	BQL	5.74	1	3/22/2010
Chloroform	BQL	5.74	1	3/22/2010
Chloromethane	BQL	5.74	1	3/22/2010
2-Chlorotoluene	BQL	5.74	1	3/22/2010
4-Chlorotoluene	BQL	5.74	1	3/22/2010
Dibromochloromethane	BQL	5.74	1	3/22/2010
1,2-Dibromo-3-chloropropane	BQL	28.7	1	3/22/2010
Dibromomethane	BQL	5.74	1	3/22/2010
1,2-Dibromoethane (EDB)	BQL	5.74	1	3/22/2010
1,2-Dichlorobenzene	BQL	5.74	1	3/22/2010
1,3-Dichlorobenzene	BQL	5.74	1	3/22/2010
1,4-Dichlorobenzene	BQL	5.74	1	3/22/2010
trans-1,4-Dichloro-2-butene	BQL	28.7	1	3/22/2010
1,1-Dichloroethane	BQL	5.74	1	3/22/2010
1,1-Dichloroethene	BQL	5.74	1	3/22/2010
1,2-Dichloroethane	BQL	5.74	1	3/22/2010
cis-1,2-Dichloroethene	BQL	5.74	1	3/22/2010
trans-1,2-dichloroethene	BQL	5.74	1	3/22/2010
1,2-Dichloropropane	BQL	5.74	1	3/22/2010
1,3-Dichloropropane	BQL	5.74	1	3/22/2010
2,2-Dichloropropane	BQL	5.74	1	3/22/2010
1,1-Dichloropropene	BQL	5.74	1	3/22/2010
cis-1,3-Dichloropropene	BQL	5.74	1	3/22/2010
trans-1,3-Dichloropropene	BQL	5.74	1	3/22/2010
Dichlorodifluoromethane	BQL	5.74	1	3/22/2010
Diisopropyl ether (DIPE)	BQL	5.74	1	3/22/2010
Ethylbenzene	BQL	5.74	1	3/22/2010
Hexachlorobutadiene	BQL	5.74	1	3/22/2010
2-Hexanone	BQL	14.4	1	3/22/2010
Iodomethane	BQL	5.74	1	3/22/2010

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-6-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-62F
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:30
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.40 g
%Solids: 68.1

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.74	1	3/22/2010
4-Isopropyltoluene	BQL	5.74	1	3/22/2010
Methylene chloride	BQL	23.0	1	3/22/2010
4-Methyl-2-pentanone	BQL	14.4	1	3/22/2010
Methyl-tert-butyl ether (MTBE)	BQL	5.74	1	3/22/2010
Naphthalene	BQL	5.74	1	3/22/2010
n-Propyl benzene	BQL	5.74	1	3/22/2010
Styrene	BQL	5.74	1	3/22/2010
1,1,1,2-Tetrachloroethane	BQL	5.74	1	3/22/2010
1,1,2,2-Tetrachloroethane	BQL	5.74	1	3/22/2010
Tetrachloroethene	BQL	5.74	1	3/22/2010
Toluene	BQL	5.74	1	3/22/2010
1,2,3-Trichlorobenzene	BQL	5.74	1	3/22/2010
1,2,4-Trichlorobenzene	BQL	5.74	1	3/22/2010
Trichloroethene	BQL	5.74	1	3/22/2010
1,1,1-Trichloroethane	BQL	5.74	1	3/22/2010
1,1,2-Trichloroethane	BQL	5.74	1	3/22/2010
Trichlorofluoromethane	BQL	5.74	1	3/22/2010
1,2,3-Trichloropropane	BQL	5.74	1	3/22/2010
1,2,4-Trimethylbenzene	BQL	5.74	1	3/22/2010
1,3,5-Trimethylbenzene	BQL	5.74	1	3/22/2010
Vinyl chloride	BQL	5.74	1	3/22/2010
m-,p-Xylene	BQL	11.5	1	3/22/2010
o-Xylene	BQL	5.74	1	3/22/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	69.3	139
Toluene-d8	50	50.6	101
4-Bromofluorobenzene	50	48	96

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: cl

Reviewed By: [illegible]

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-6-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-62I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 34.05 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:30
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 68.05

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	432	1	3/19/2010
Acenaphthylene	BQL	432	1	3/19/2010
Anthracene	BQL	432	1	3/19/2010
Benzo[a]anthracene	BQL	432	1	3/19/2010
Benzo[a]pyrene	BQL	432	1	3/19/2010
Benzo[b]fluoranthene	BQL	432	1	3/19/2010
Benzo[g,h,i]perylene	BQL	432	1	3/19/2010
Benzo[k]fluoranthene	BQL	432	1	3/19/2010
Benzoic Acid	BQL	2160	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	432	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	432	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	432	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	432	1	3/19/2010
4-bromophenyl phenyl ether	BQL	432	1	3/19/2010
Butylbenzylphthalate	BQL	432	1	3/19/2010
2-Chloronaphthalene	BQL	432	1	3/19/2010
2-Chlorophenol	BQL	432	1	3/19/2010
4-Chloro-3-methylphenol	BQL	432	1	3/19/2010
4-Chloroaniline	BQL	2160	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	432	1	3/19/2010
Chrysene	BQL	432	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	432	1	3/19/2010
Dibenzofuran	BQL	432	1	3/19/2010
Di-n-Butylphthalate	BQL	432	1	3/19/2010
1,2-Dichlorobenzene	BQL	432	1	3/19/2010
1,3-Dichlorobenzene	BQL	432	1	3/19/2010
1,4-Dichlorobenzene	BQL	432	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	863	1	3/19/2010
2,4-Dichlorophenol	BQL	432	1	3/19/2010
Diethylphthalate	BQL	432	1	3/19/2010
Dimethylphthalate	BQL	432	1	3/19/2010
2,4-Dimethylphenol	BQL	432	1	3/19/2010
Di-n-octylphthalate	BQL	432	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	2160	1	3/19/2010
2,4-Dinitrophenol	BQL	2160	1	3/19/2010
2,4-Dinitrotoluene	BQL	432	1	3/19/2010
2,6-Dinitrotoluene	BQL	432	1	3/19/2010
Diphenylamine *	BQL	432	1	3/19/2010
Fluoranthene	BQL	432	1	3/19/2010
Fluorene	BQL	432	1	3/19/2010
Hexachlorobenzene	BQL	432	1	3/19/2010
Hexachlorobutadiene	BQL	432	1	3/19/2010
Hexachlorocyclopentadiene	BQL	863	1	3/19/2010
Hexachloroethane	BQL	432	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	432	1	3/19/2010
Isophorone	BQL	432	1	3/19/2010
2-Methylnaphthalene	BQL	432	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-6-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-62I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 34.05 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:30
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 68.05

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	432	1	3/19/2010
3- & 4-Methylphenol	BQL	432	1	3/19/2010
Naphthalene	BQL	432	1	3/19/2010
2-Nitroaniline	BQL	432	1	3/19/2010
3-Nitroaniline	BQL	2160	1	3/19/2010
4-Nitroaniline	BQL	2160	1	3/19/2010
Nitrobenzene	BQL	432	1	3/19/2010
2-Nitrophenol	BQL	432	1	3/19/2010
4-Nitrophenol	BQL	2160	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	432	1	3/19/2010
Pentachlorophenol	BQL	2160	1	3/19/2010
Phenanthrene	BQL	432	1	3/19/2010
Phenol	BQL	432	1	3/19/2010
Pyrene	BQL	432	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	432	1	3/19/2010
2,4,5-Trichlorophenol	BQL	432	1	3/19/2010
2,4,6-Trichlorophenol	BQL	432	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.4	74
2-Fluorophenol	10	9.6	96
Nitrobenzene-d5	10	8.7	87
Phenol-d6	10	9.5	95
2,4,6-Tribromophenol	10	8.5	85
4-Terphenyl-d14	10	10.5	105

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-7-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-63A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 12:45
Date Received: 3/11/2010
Matrix: Soil
Solids 76.36

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.86	mg/Kg	1	03/18/10 11:44

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	82.3	82.3		70-130

Comments:

Batch Information

Analytical Batch: VP031810
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.7 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By:

GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-7-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-63J
Lab Project ID: G341-616

Date Collected: 3/10/2011 12:45
Date Received: 3/11/2010
Matrix: Soil
Solids 76.36
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.94	mg/Kg	1	03/18/10 10:31

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	36.6	91.4

Comments:

Batch Information

Analytical Batch: EP031810
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16216
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 32.98 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By:

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-7-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-63D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:45
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.48 g
%Solids: 76.4

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	50.4	1	3/18/2010
Benzene	BQL	5.04	1	3/18/2010
Bromobenzene	BQL	5.04	1	3/18/2010
Bromochloromethane	BQL	5.04	1	3/18/2010
Bromodichloromethane	BQL	5.04	1	3/18/2010
Bromoform	BQL	5.04	1	3/18/2010
Bromomethane	BQL	5.04	1	3/18/2010
2-Butanone	BQL	25.2	1	3/18/2010
n-Butylbenzene	BQL	5.04	1	3/18/2010
sec-Butylbenzene	BQL	5.04	1	3/18/2010
tert-Butylbenzene	BQL	5.04	1	3/18/2010
Carbon disulfide	BQL	5.04	1	3/18/2010
Carbon tetrachloride	BQL	5.04	1	3/18/2010
Chlorobenzene	BQL	5.04	1	3/18/2010
Chloroethane	BQL	5.04	1	3/18/2010
Chloroform	BQL	5.04	1	3/18/2010
Chloromethane	BQL	5.04	1	3/18/2010
2-Chlorotoluene	BQL	5.04	1	3/18/2010
4-Chlorotoluene	BQL	5.04	1	3/18/2010
Dibromochloromethane	BQL	5.04	1	3/18/2010
1,2-Dibromo-3-chloropropane	BQL	25.2	1	3/18/2010
Dibromomethane	BQL	5.04	1	3/18/2010
1,2-Dibromoethane (EDB)	BQL	5.04	1	3/18/2010
1,2-Dichlorobenzene	BQL	5.04	1	3/18/2010
1,3-Dichlorobenzene	BQL	5.04	1	3/18/2010
1,4-Dichlorobenzene	BQL	5.04	1	3/18/2010
trans-1,4-Dichloro-2-butene	BQL	25.2	1	3/18/2010
1,1-Dichloroethane	BQL	5.04	1	3/18/2010
1,1-Dichloroethene	BQL	5.04	1	3/18/2010
1,2-Dichloroethane	BQL	5.04	1	3/18/2010
cis-1,2-Dichloroethene	BQL	5.04	1	3/18/2010
trans-1,2-dichloroethene	BQL	5.04	1	3/18/2010
1,2-Dichloropropane	BQL	5.04	1	3/18/2010
1,3-Dichloropropane	BQL	5.04	1	3/18/2010
2,2-Dichloropropane	BQL	5.04	1	3/18/2010
1,1-Dichloropropene	BQL	5.04	1	3/18/2010
cis-1,3-Dichloropropene	BQL	5.04	1	3/18/2010
trans-1,3-Dichloropropene	BQL	5.04	1	3/18/2010
Dichlorodifluoromethane	BQL	5.04	1	3/18/2010
Diisopropyl ether (DIPE)	BQL	5.04	1	3/18/2010
Ethylbenzene	BQL	5.04	1	3/18/2010
Hexachlorobutadiene	BQL	5.04	1	3/18/2010
2-Hexanone	BQL	12.6	1	3/18/2010
Iodomethane	BQL	5.04	1	3/18/2010

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-7-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-63D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 12:45
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.48 g
%Solids: 76.4

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.04	1	3/18/2010
4-Isopropyltoluene	BQL	5.04	1	3/18/2010
Methylene chloride	BQL	20.2	1	3/18/2010
4-Methyl-2-pentanone	BQL	12.6	1	3/18/2010
Methyl-tert-butyl ether (MTBE)	BQL	5.04	1	3/18/2010
Naphthalene	BQL	5.04	1	3/18/2010
n-Propyl benzene	BQL	5.04	1	3/18/2010
Styrene	BQL	5.04	1	3/18/2010
1,1,1,2-Tetrachloroethane	BQL	5.04	1	3/18/2010
1,1,2,2-Tetrachloroethane	BQL	5.04	1	3/18/2010
Tetrachloroethene	BQL	5.04	1	3/18/2010
Toluene	BQL	5.04	1	3/18/2010
1,2,3-Trichlorobenzene	BQL	5.04	1	3/18/2010
1,2,4-Trichlorobenzene	BQL	5.04	1	3/18/2010
Trichloroethene	BQL	5.04	1	3/18/2010
1,1,1-Trichloroethane	BQL	5.04	1	3/18/2010
1,1,2-Trichloroethane	BQL	5.04	1	3/18/2010
Trichlorofluoromethane	BQL	5.04	1	3/18/2010
1,2,3-Trichloropropane	BQL	5.04	1	3/18/2010
1,2,4-Trimethylbenzene	BQL	5.04	1	3/18/2010
1,3,5-Trimethylbenzene	BQL	5.04	1	3/18/2010
Vinyl chloride	BQL	5.04	1	3/18/2010
m-,p-Xylene	BQL	10.1	1	3/18/2010
o-Xylene	BQL	5.04	1	3/18/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	119	238 #
Toluene-d8	50	53.5	107
4-Bromofluorobenzene	50	46.8	94

Comments:
Surrogate recoveries were confirmed by duplicate analysis.

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-7-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-63I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 31.96 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:45
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 76.36

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	410	1	3/19/2010
Acenaphthylene	BQL	410	1	3/19/2010
Anthracene	BQL	410	1	3/19/2010
Benzo[a]anthracene	BQL	410	1	3/19/2010
Benzo[a]pyrene	BQL	410	1	3/19/2010
Benzo[b]fluoranthene	BQL	410	1	3/19/2010
Benzo[g,h,i]perylene	BQL	410	1	3/19/2010
Benzo[k]fluoranthene	BQL	410	1	3/19/2010
Benzoic Acid	BQL	2050	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	410	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	410	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	410	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	410	1	3/19/2010
4-bromophenyl phenyl ether	BQL	410	1	3/19/2010
Butylbenzylphthalate	BQL	410	1	3/19/2010
2-Chloronaphthalene	BQL	410	1	3/19/2010
2-Chlorophenol	BQL	410	1	3/19/2010
4-Chloro-3-methylphenol	BQL	410	1	3/19/2010
4-Chloroaniline	BQL	2050	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	410	1	3/19/2010
Chrysene	BQL	410	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	410	1	3/19/2010
Dibenzofuran	BQL	410	1	3/19/2010
Di-n-Butylphthalate	BQL	410	1	3/19/2010
1,2-Dichlorobenzene	BQL	410	1	3/19/2010
1,3-Dichlorobenzene	BQL	410	1	3/19/2010
1,4-Dichlorobenzene	BQL	410	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	820	1	3/19/2010
2,4-Dichlorophenol	BQL	410	1	3/19/2010
Diethylphthalate	BQL	410	1	3/19/2010
Dimethylphthalate	BQL	410	1	3/19/2010
2,4-Dimethylphenol	BQL	410	1	3/19/2010
Di-n-octylphthalate	BQL	410	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	2050	1	3/19/2010
2,4-Dinitrophenol	BQL	2050	1	3/19/2010
2,4-Dinitrotoluene	BQL	410	1	3/19/2010
2,6-Dinitrotoluene	BQL	410	1	3/19/2010
Diphenylamine *	BQL	410	1	3/19/2010
Fluoranthene	BQL	410	1	3/19/2010
Fluorene	BQL	410	1	3/19/2010
Hexachlorobenzene	BQL	410	1	3/19/2010
Hexachlorobutadiene	BQL	410	1	3/19/2010
Hexachlorocyclopentadiene	BQL	820	1	3/19/2010
Hexachloroethane	BQL	410	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	410	1	3/19/2010
Isophorone	BQL	410	1	3/19/2010
2-Methylnaphthalene	BQL	410	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-7-8
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-63I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 31.96 g

Analyzed By: DCS
Date Collected: 3/10/2011 12:45
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 76.36

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	410	1	3/19/2010
3- & 4-Methylphenol	BQL	410	1	3/19/2010
Naphthalene	BQL	410	1	3/19/2010
2-Nitroaniline	BQL	410	1	3/19/2010
3-Nitroaniline	BQL	2050	1	3/19/2010
4-Nitroaniline	BQL	2050	1	3/19/2010
Nitrobenzene	BQL	410	1	3/19/2010
2-Nitrophenol	BQL	410	1	3/19/2010
4-Nitrophenol	BQL	2050	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	410	1	3/19/2010
Pentachlorophenol	BQL	2050	1	3/19/2010
Phenanthrene	BQL	410	1	3/19/2010
Phenol	BQL	410	1	3/19/2010
Pyrene	BQL	410	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	410	1	3/19/2010
2,4,5-Trichlorophenol	BQL	410	1	3/19/2010
2,4,6-Trichlorophenol	BQL	410	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.3	73
2-Fluorophenol	10	9.4	94
Nitrobenzene-d5	10	8.7	87
Phenol-d6	10	9.5	95
2,4,6-Tribromophenol	10	7.8	78
4-Terphenyl-d14	10	10.3	103

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: MBO

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-8-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-64A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 13:00
Date Received: 3/11/2010
Matrix: Soil
Solids 83.35

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.75	mg/Kg	1	03/18/10 12:11

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	83.1	83.1		70-130

Comments:

Batch Information

Analytical Batch: VP031810
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.26 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-8-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-64J
Lab Project ID: G341-616

Date Collected: 3/10/2011 13:00
Date Received: 3/11/2010
Matrix: Soil
Solids 83.35
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.37	mg/Kg	1	03/18/10 10:59

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	37.8	94.6

Comments:

Batch Information

Analytical Batch: EP031810
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16216
Prep Method: 3541
Prep Date: 03/16/10
Initial Prep Wt/Vol: 32.57 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

Reviewed By:

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-8-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-64F
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:00
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.36 g
%Solids: 83.4

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	47.1	1	3/22/2010
Benzene	BQL	4.71	1	3/22/2010
Bromobenzene	BQL	4.71	1	3/22/2010
Bromochloromethane	BQL	4.71	1	3/22/2010
Bromodichloromethane	BQL	4.71	1	3/22/2010
Bromoform	BQL	4.71	1	3/22/2010
Bromomethane	BQL	4.71	1	3/22/2010
2-Butanone	BQL	23.5	1	3/22/2010
n-Butylbenzene	BQL	4.71	1	3/22/2010
sec-Butylbenzene	BQL	4.71	1	3/22/2010
tert-Butylbenzene	BQL	4.71	1	3/22/2010
Carbon disulfide	BQL	4.71	1	3/22/2010
Carbon tetrachloride	BQL	4.71	1	3/22/2010
Chlorobenzene	BQL	4.71	1	3/22/2010
Chloroethane	BQL	4.71	1	3/22/2010
Chloroform	BQL	4.71	1	3/22/2010
Chloromethane	BQL	4.71	1	3/22/2010
2-Chlorotoluene	BQL	4.71	1	3/22/2010
4-Chlorotoluene	BQL	4.71	1	3/22/2010
Dibromochloromethane	BQL	4.71	1	3/22/2010
1,2-Dibromo-3-chloropropane	BQL	23.5	1	3/22/2010
Dibromomethane	BQL	4.71	1	3/22/2010
1,2-Dibromoethane (EDB)	BQL	4.71	1	3/22/2010
1,2-Dichlorobenzene	BQL	4.71	1	3/22/2010
1,3-Dichlorobenzene	BQL	4.71	1	3/22/2010
1,4-Dichlorobenzene	BQL	4.71	1	3/22/2010
trans-1,4-Dichloro-2-butene	BQL	23.5	1	3/22/2010
1,1-Dichloroethane	BQL	4.71	1	3/22/2010
1,1-Dichloroethene	BQL	4.71	1	3/22/2010
1,2-Dichloroethane	BQL	4.71	1	3/22/2010
cis-1,2-Dichloroethene	BQL	4.71	1	3/22/2010
trans-1,2-dichloroethene	BQL	4.71	1	3/22/2010
1,2-Dichloropropane	BQL	4.71	1	3/22/2010
1,3-Dichloropropane	BQL	4.71	1	3/22/2010
2,2-Dichloropropane	BQL	4.71	1	3/22/2010
1,1-Dichloropropene	BQL	4.71	1	3/22/2010
cis-1,3-Dichloropropene	BQL	4.71	1	3/22/2010
trans-1,3-Dichloropropene	BQL	4.71	1	3/22/2010
Dichlorodifluoromethane	BQL	4.71	1	3/22/2010
Diisopropyl ether (DIPE)	BQL	4.71	1	3/22/2010
Ethylbenzene	BQL	4.71	1	3/22/2010
Hexachlorobutadiene	BQL	4.71	1	3/22/2010
2-Hexanone	BQL	11.8	1	3/22/2010
Iodomethane	BQL	4.71	1	3/22/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-8-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-64F
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:00
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.36 g
%Solids: 83.4

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	4.71	1	3/22/2010
4-Isopropyltoluene	BQL	4.71	1	3/22/2010
Methylene chloride	BQL	18.8	1	3/22/2010
4-Methyl-2-pentanone	BQL	11.8	1	3/22/2010
Methyl-tert-butyl ether (MTBE)	BQL	4.71	1	3/22/2010
Naphthalene	BQL	4.71	1	3/22/2010
n-Propyl benzene	BQL	4.71	1	3/22/2010
Styrene	BQL	4.71	1	3/22/2010
1,1,1,2-Tetrachloroethane	BQL	4.71	1	3/22/2010
1,1,2,2-Tetrachloroethane	BQL	4.71	1	3/22/2010
Tetrachloroethene	BQL	4.71	1	3/22/2010
Toluene	BQL	4.71	1	3/22/2010
1,2,3-Trichlorobenzene	BQL	4.71	1	3/22/2010
1,2,4-Trichlorobenzene	BQL	4.71	1	3/22/2010
Trichloroethene	BQL	4.71	1	3/22/2010
1,1,1-Trichloroethane	BQL	4.71	1	3/22/2010
1,1,2-Trichloroethane	BQL	4.71	1	3/22/2010
Trichlorofluoromethane	BQL	4.71	1	3/22/2010
1,2,3-Trichloropropane	BQL	4.71	1	3/22/2010
1,2,4-Trimethylbenzene	BQL	4.71	1	3/22/2010
1,3,5-Trimethylbenzene	BQL	4.71	1	3/22/2010
Vinyl chloride	BQL	4.71	1	3/22/2010
m-,p-Xylene	BQL	9.42	1	3/22/2010
o-Xylene	BQL	4.71	1	3/22/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	69.1	138
Toluene-d8	50	50.4	101
4-Bromofluorobenzene	50	46.7	93

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-8-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-64I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 31.97 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:00
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 83.35

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	375	1	3/19/2010
Acenaphthylene	BQL	375	1	3/19/2010
Anthracene	BQL	375	1	3/19/2010
Benzo[a]anthracene	BQL	375	1	3/19/2010
Benzo[a]pyrene	BQL	375	1	3/19/2010
Benzo[b]fluoranthene	BQL	375	1	3/19/2010
Benzo[g,h,i]perylene	BQL	375	1	3/19/2010
Benzo[k]fluoranthene	BQL	375	1	3/19/2010
Benzoic Acid	BQL	1880	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	375	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	375	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	375	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	375	1	3/19/2010
4-bromophenyl phenyl ether	BQL	375	1	3/19/2010
Butylbenzylphthalate	BQL	375	1	3/19/2010
2-Chloronaphthalene	BQL	375	1	3/19/2010
2-Chlorophenol	BQL	375	1	3/19/2010
4-Chloro-3-methylphenol	BQL	375	1	3/19/2010
4-Chloroaniline	BQL	1880	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	375	1	3/19/2010
Chrysene	BQL	375	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	375	1	3/19/2010
Dibenzofuran	BQL	375	1	3/19/2010
Di-n-Butylphthalate	BQL	375	1	3/19/2010
1,2-Dichlorobenzene	BQL	375	1	3/19/2010
1,3-Dichlorobenzene	BQL	375	1	3/19/2010
1,4-Dichlorobenzene	BQL	375	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	751	1	3/19/2010
2,4-Dichlorophenol	BQL	375	1	3/19/2010
Diethylphthalate	BQL	375	1	3/19/2010
Dimethylphthalate	BQL	375	1	3/19/2010
2,4-Dimethylphenol	BQL	375	1	3/19/2010
Di-n-octylphthalate	BQL	375	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	1880	1	3/19/2010
2,4-Dinitrophenol	BQL	1880	1	3/19/2010
2,4-Dinitrotoluene	BQL	375	1	3/19/2010
2,6-Dinitrotoluene	BQL	375	1	3/19/2010
Diphenylamine *	BQL	375	1	3/19/2010
Fluoranthene	BQL	375	1	3/19/2010
Fluorene	BQL	375	1	3/19/2010
Hexachlorobenzene	BQL	375	1	3/19/2010
Hexachlorobutadiene	BQL	375	1	3/19/2010
Hexachlorocyclopentadiene	BQL	751	1	3/19/2010
Hexachloroethane	BQL	375	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	375	1	3/19/2010
Isophorone	BQL	375	1	3/19/2010
2-Methylnaphthalene	BQL	375	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-8-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-64I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 31.97 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:00
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 83.35

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	375	1	3/19/2010
3- & 4-Methylphenol	BQL	375	1	3/19/2010
Naphthalene	BQL	375	1	3/19/2010
2-Nitroaniline	BQL	375	1	3/19/2010
3-Nitroaniline	BQL	1880	1	3/19/2010
4-Nitroaniline	BQL	1880	1	3/19/2010
Nitrobenzene	BQL	375	1	3/19/2010
2-Nitrophenol	BQL	375	1	3/19/2010
4-Nitrophenol	BQL	1880	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	375	1	3/19/2010
Pentachlorophenol	BQL	1880	1	3/19/2010
Phenanthrene	BQL	375	1	3/19/2010
Phenol	BQL	375	1	3/19/2010
Pyrene	BQL	375	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	375	1	3/19/2010
2,4,5-Trichlorophenol	BQL	375	1	3/19/2010
2,4,6-Trichlorophenol	BQL	375	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.3	93
2-Fluorophenol	10	10	100
Nitrobenzene-d5	10	9.7	97
Phenol-d6	10	10	100
2,4,6-Tribromophenol	10	9.8	98
4-Terphenyl-d14	10	11.3	113

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-9-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-31A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 13:10
Date Received: 3/11/2010
Matrix: Soil
Solids 84.10

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.13	mg/Kg	1	03/17/10 17:27

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	83.1	83.1		70-130

Comments:

Batch Information

Analytical Batch: VP031710
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.96 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-9-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-31J
Lab Project ID: G341-616

Date Collected: 3/10/2011 13:10
Date Received: 3/11/2010
Matrix: Soil
Solids 84.10
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.23	mg/Kg	1	03/17/10 13:35

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	38.9	97.2

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16211
Prep Method: 3541
Prep Date: 03/15/10
Initial Prep Wt/Vol: 32.91 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-9-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-31D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:10
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 7.51 g
%Solids: 84.1

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	39.5	1	3/15/2010
Benzene	BQL	3.95	1	3/15/2010
Bromobenzene	BQL	3.95	1	3/15/2010
Bromochloromethane	BQL	3.95	1	3/15/2010
Bromodichloromethane	BQL	3.95	1	3/15/2010
Bromoform	BQL	3.95	1	3/15/2010
Bromomethane	BQL	3.95	1	3/15/2010
2-Butanone	BQL	19.8	1	3/15/2010
n-Butylbenzene	BQL	3.95	1	3/15/2010
sec-Butylbenzene	BQL	3.95	1	3/15/2010
tert-Butylbenzene	BQL	3.95	1	3/15/2010
Carbon disulfide	BQL	3.95	1	3/15/2010
Carbon tetrachloride	BQL	3.95	1	3/15/2010
Chlorobenzene	BQL	3.95	1	3/15/2010
Chloroethane	BQL	3.95	1	3/15/2010
Chloroform	BQL	3.95	1	3/15/2010
Chloromethane	BQL	3.95	1	3/15/2010
2-Chlorotoluene	BQL	3.95	1	3/15/2010
4-Chlorotoluene	BQL	3.95	1	3/15/2010
Dibromochloromethane	BQL	3.95	1	3/15/2010
1,2-Dibromo-3-chloropropane	BQL	19.8	1	3/15/2010
Dibromomethane	BQL	3.95	1	3/15/2010
1,2-Dibromoethane (EDB)	BQL	3.95	1	3/15/2010
1,2-Dichlorobenzene	BQL	3.95	1	3/15/2010
1,3-Dichlorobenzene	BQL	3.95	1	3/15/2010
1,4-Dichlorobenzene	BQL	3.95	1	3/15/2010
trans-1,4-Dichloro-2-butene	BQL	19.8	1	3/15/2010
1,1-Dichloroethane	BQL	3.95	1	3/15/2010
1,1-Dichloroethene	BQL	3.95	1	3/15/2010
1,2-Dichloroethane	BQL	3.95	1	3/15/2010
cis-1,2-Dichloroethene	BQL	3.95	1	3/15/2010
trans-1,2-dichloroethene	BQL	3.95	1	3/15/2010
1,2-Dichloropropane	BQL	3.95	1	3/15/2010
1,3-Dichloropropane	BQL	3.95	1	3/15/2010
2,2-Dichloropropane	BQL	3.95	1	3/15/2010
1,1-Dichloropropene	BQL	3.95	1	3/15/2010
cis-1,3-Dichloropropene	BQL	3.95	1	3/15/2010
trans-1,3-Dichloropropene	BQL	3.95	1	3/15/2010
Dichlorodifluoromethane	BQL	3.95	1	3/15/2010
Diisopropyl ether (DIPE)	BQL	3.95	1	3/15/2010
Ethylbenzene	BQL	3.95	1	3/15/2010
Hexachlorobutadiene	BQL	3.95	1	3/15/2010
2-Hexanone	BQL	9.88	1	3/15/2010
Iodomethane	BQL	3.95	1	3/15/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-9-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-31D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:10
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 7.51 g
%Solids: 84.1

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	3.95	1	3/15/2010
4-Isopropyltoluene	BQL	3.95	1	3/15/2010
Methylene chloride	BQL	15.8	1	3/15/2010
4-Methyl-2-pentanone	BQL	9.88	1	3/15/2010
Methyl-tert-butyl ether (MTBE)	BQL	3.95	1	3/15/2010
Naphthalene	BQL	3.95	1	3/15/2010
n-Propyl benzene	BQL	3.95	1	3/15/2010
Styrene	BQL	3.95	1	3/15/2010
1,1,1,2-Tetrachloroethane	BQL	3.95	1	3/15/2010
1,1,2,2-Tetrachloroethane	BQL	3.95	1	3/15/2010
Tetrachloroethene	BQL	3.95	1	3/15/2010
Toluene	BQL	3.95	1	3/15/2010
1,2,3-Trichlorobenzene	BQL	3.95	1	3/15/2010
1,2,4-Trichlorobenzene	BQL	3.95	1	3/15/2010
Trichloroethene	BQL	3.95	1	3/15/2010
1,1,1-Trichloroethane	BQL	3.95	1	3/15/2010
1,1,2-Trichloroethane	BQL	3.95	1	3/15/2010
Trichlorofluoromethane	BQL	3.95	1	3/15/2010
1,2,3-Trichloropropane	BQL	3.95	1	3/15/2010
1,2,4-Trimethylbenzene	BQL	3.95	1	3/15/2010
1,3,5-Trimethylbenzene	BQL	3.95	1	3/15/2010
Vinyl chloride	BQL	3.95	1	3/15/2010
m-,p-Xylene	BQL	7.91	1	3/15/2010
o-Xylene	BQL	3.95	1	3/15/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	62.6	125
Toluene-d8	50	54.6	109
4-Bromofluorobenzene	50	46.8	94

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-9-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-31I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 33.74 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:10
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 84.1

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	352	1	3/19/2010
Acenaphthylene	BQL	352	1	3/19/2010
Anthracene	BQL	352	1	3/19/2010
Benzo[a]anthracene	BQL	352	1	3/19/2010
Benzo[a]pyrene	BQL	352	1	3/19/2010
Benzo[b]fluoranthene	BQL	352	1	3/19/2010
Benzo[g,h,i]perylene	BQL	352	1	3/19/2010
Benzo[k]fluoranthene	BQL	352	1	3/19/2010
Benzoic Acid	BQL	1760	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	352	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	352	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	352	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	352	1	3/19/2010
4-bromophenyl phenyl ether	BQL	352	1	3/19/2010
Butylbenzylphthalate	BQL	352	1	3/19/2010
2-Chloronaphthalene	BQL	352	1	3/19/2010
2-Chlorophenol	BQL	352	1	3/19/2010
4-Chloro-3-methylphenol	BQL	352	1	3/19/2010
4-Chloroaniline	BQL	1760	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	352	1	3/19/2010
Chrysene	BQL	352	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	352	1	3/19/2010
Dibenzofuran	BQL	352	1	3/19/2010
Di-n-Butylphthalate	BQL	352	1	3/19/2010
1,2-Dichlorobenzene	BQL	352	1	3/19/2010
1,3-Dichlorobenzene	BQL	352	1	3/19/2010
1,4-Dichlorobenzene	BQL	352	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	705	1	3/19/2010
2,4-Dichlorophenol	BQL	352	1	3/19/2010
Diethylphthalate	BQL	352	1	3/19/2010
Dimethylphthalate	BQL	352	1	3/19/2010
2,4-Dimethylphenol	BQL	352	1	3/19/2010
Di-n-octylphthalate	BQL	352	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	1760	1	3/19/2010
2,4-Dinitrophenol	BQL	1760	1	3/19/2010
2,4-Dinitrotoluene	BQL	352	1	3/19/2010
2,6-Dinitrotoluene	BQL	352	1	3/19/2010
Diphenylamine *	BQL	352	1	3/19/2010
Fluoranthene	BQL	352	1	3/19/2010
Fluorene	BQL	352	1	3/19/2010
Hexachlorobenzene	BQL	352	1	3/19/2010
Hexachlorobutadiene	BQL	352	1	3/19/2010
Hexachlorocyclopentadiene	BQL	705	1	3/19/2010
Hexachloroethane	BQL	352	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	352	1	3/19/2010
Isophorone	BQL	352	1	3/19/2010
2-Methylnaphthalene	BQL	352	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-9-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-31I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 33.74 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:10
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 84.1

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	352	1	3/19/2010
3- & 4-Methylphenol	BQL	352	1	3/19/2010
Naphthalene	BQL	352	1	3/19/2010
2-Nitroaniline	BQL	352	1	3/19/2010
3-Nitroaniline	BQL	1760	1	3/19/2010
4-Nitroaniline	BQL	1760	1	3/19/2010
Nitrobenzene	BQL	352	1	3/19/2010
2-Nitrophenol	BQL	352	1	3/19/2010
4-Nitrophenol	BQL	1760	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	352	1	3/19/2010
Pentachlorophenol	BQL	1760	1	3/19/2010
Phenanthrene	BQL	352	1	3/19/2010
Phenol	BQL	352	1	3/19/2010
Pyrene	BQL	352	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	352	1	3/19/2010
2,4,5-Trichlorophenol	BQL	352	1	3/19/2010
2,4,6-Trichlorophenol	BQL	352	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.2	82
2-Fluorophenol	10	10.2	102
Nitrobenzene-d5	10	9.9	99
Phenol-d6	10	10.2	102
2,4,6-Tribromophenol	10	8.9	88
4-Terphenyl-d14	10	11.3	113

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	S8-10-4	Analyzed By:	BAO
Client Project ID:	U-3810/NCDOT 001100	Date Collected:	3/10/2011 13:25
Lab Sample ID:	G341-616-32A	Date Received:	3/11/2010
Lab Project ID:	G341-616	Matrix:	Soil
Report Basis:	Dry Weight	Solids	84.42

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.92	mg/Kg	1	03/17/10 17:54

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	83.1	83.1		70-130

Comments:

Batch Information

Analytical Batch:	VP031710	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	BAO		

Analyst: BAO

NC Certification #481

Reviewed By: _____
GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-10-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-32J
Lab Project ID: G341-616

Date Collected: 3/10/2011 13:25
Date Received: 3/11/2010
Matrix: Soil
Solids 84.42
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.20	mg/Kg	1	03/17/10 14:02

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	40.7	102

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16211
Prep Method: 3541
Prep Date: 03/15/10
Initial Prep Wt/Vol: 32.91 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-10-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-32D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:25
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.5 g
%Solids: 84.4

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	45.6	1	3/15/2010
Benzene	BQL	4.56	1	3/15/2010
Bromobenzene	BQL	4.56	1	3/15/2010
Bromochloromethane	BQL	4.56	1	3/15/2010
Bromodichloromethane	BQL	4.56	1	3/15/2010
Bromoform	BQL	4.56	1	3/15/2010
Bromomethane	BQL	4.56	1	3/15/2010
2-Butanone	BQL	22.8	1	3/15/2010
n-Butylbenzene	BQL	4.56	1	3/15/2010
sec-Butylbenzene	BQL	4.56	1	3/15/2010
tert-Butylbenzene	BQL	4.56	1	3/15/2010
Carbon disulfide	BQL	4.56	1	3/15/2010
Carbon tetrachloride	BQL	4.56	1	3/15/2010
Chlorobenzene	BQL	4.56	1	3/15/2010
Chloroethane	BQL	4.56	1	3/15/2010
Chloroform	BQL	4.56	1	3/15/2010
Chloromethane	BQL	4.56	1	3/15/2010
2-Chlorotoluene	BQL	4.56	1	3/15/2010
4-Chlorotoluene	BQL	4.56	1	3/15/2010
Dibromochloromethane	BQL	4.56	1	3/15/2010
1,2-Dibromo-3-chloropropane	BQL	22.8	1	3/15/2010
Dibromomethane	BQL	4.56	1	3/15/2010
1,2-Dibromoethane (EDB)	BQL	4.56	1	3/15/2010
1,2-Dichlorobenzene	BQL	4.56	1	3/15/2010
1,3-Dichlorobenzene	BQL	4.56	1	3/15/2010
1,4-Dichlorobenzene	BQL	4.56	1	3/15/2010
trans-1,4-Dichloro-2-butene	BQL	22.8	1	3/15/2010
1,1-Dichloroethane	BQL	4.56	1	3/15/2010
1,1-Dichloroethene	BQL	4.56	1	3/15/2010
1,2-Dichloroethane	BQL	4.56	1	3/15/2010
cis-1,2-Dichloroethene	BQL	4.56	1	3/15/2010
trans-1,2-dichloroethene	BQL	4.56	1	3/15/2010
1,2-Dichloropropane	BQL	4.56	1	3/15/2010
1,3-Dichloropropane	BQL	4.56	1	3/15/2010
2,2-Dichloropropane	BQL	4.56	1	3/15/2010
1,1-Dichloropropene	BQL	4.56	1	3/15/2010
cis-1,3-Dichloropropene	BQL	4.56	1	3/15/2010
trans-1,3-Dichloropropene	BQL	4.56	1	3/15/2010
Dichlorodifluoromethane	BQL	4.56	1	3/15/2010
Diisopropyl ether (DIPE)	BQL	4.56	1	3/15/2010
Ethylbenzene	BQL	4.56	1	3/15/2010
Hexachlorobutadiene	BQL	4.56	1	3/15/2010
2-Hexanone	BQL	11.4	1	3/15/2010
Iodomethane	BQL	4.56	1	3/15/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-10-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-32D
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:25
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.5 g
%Solids: 84.4

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	4.56	1	3/15/2010
4-Isopropyltoluene	BQL	4.56	1	3/15/2010
Methylene chloride	BQL	18.2	1	3/15/2010
4-Methyl-2-pentanone	BQL	11.4	1	3/15/2010
Methyl-tert-butyl ether (MTBE)	BQL	4.56	1	3/15/2010
Naphthalene	BQL	4.56	1	3/15/2010
n-Propyl benzene	BQL	4.56	1	3/15/2010
Styrene	BQL	4.56	1	3/15/2010
1,1,1,2-Tetrachloroethane	BQL	4.56	1	3/15/2010
1,1,2,2-Tetrachloroethane	BQL	4.56	1	3/15/2010
Tetrachloroethene	BQL	4.56	1	3/15/2010
Toluene	BQL	4.56	1	3/15/2010
1,2,3-Trichlorobenzene	BQL	4.56	1	3/15/2010
1,2,4-Trichlorobenzene	BQL	4.56	1	3/15/2010
Trichloroethene	BQL	4.56	1	3/15/2010
1,1,1-Trichloroethane	BQL	4.56	1	3/15/2010
1,1,2-Trichloroethane	BQL	4.56	1	3/15/2010
Trichlorofluoromethane	BQL	4.56	1	3/15/2010
1,2,3-Trichloropropane	BQL	4.56	1	3/15/2010
1,2,4-Trimethylbenzene	BQL	4.56	1	3/15/2010
1,3,5-Trimethylbenzene	BQL	4.56	1	3/15/2010
Vinyl chloride	BQL	4.56	1	3/15/2010
m-,p-Xylene	BQL	9.11	1	3/15/2010
o-Xylene	BQL	4.56	1	3/15/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	63	126
Toluene-d8	50	54.5	109
4-Bromofluorobenzene	50	46.2	92

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-10-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-32I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.89 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:25
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 84.42

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	360	1	3/19/2010
Acenaphthylene	BQL	360	1	3/19/2010
Anthracene	BQL	360	1	3/19/2010
Benzo[a]anthracene	BQL	360	1	3/19/2010
Benzo[a]pyrene	BQL	360	1	3/19/2010
Benzo[b]fluoranthene	BQL	360	1	3/19/2010
Benzo[g,h,i]perylene	BQL	360	1	3/19/2010
Benzo[k]fluoranthene	BQL	360	1	3/19/2010
Benzoic Acid	BQL	1800	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	360	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	360	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	360	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	360	1	3/19/2010
4-bromophenyl phenyl ether	BQL	360	1	3/19/2010
Butylbenzylphthalate	BQL	360	1	3/19/2010
2-Chloronaphthalene	BQL	360	1	3/19/2010
2-Chlorophenol	BQL	360	1	3/19/2010
4-Chloro-3-methylphenol	BQL	360	1	3/19/2010
4-Chloroaniline	BQL	1800	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	360	1	3/19/2010
Chrysene	BQL	360	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	360	1	3/19/2010
Dibenzofuran	BQL	360	1	3/19/2010
Di-n-Butylphthalate	BQL	360	1	3/19/2010
1,2-Dichlorobenzene	BQL	360	1	3/19/2010
1,3-Dichlorobenzene	BQL	360	1	3/19/2010
1,4-Dichlorobenzene	BQL	360	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	720	1	3/19/2010
2,4-Dichlorophenol	BQL	360	1	3/19/2010
Diethylphthalate	BQL	360	1	3/19/2010
Dimethylphthalate	BQL	360	1	3/19/2010
2,4-Dimethylphenol	BQL	360	1	3/19/2010
Di-n-octylphthalate	BQL	360	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	1800	1	3/19/2010
2,4-Dinitrophenol	BQL	1800	1	3/19/2010
2,4-Dinitrotoluene	BQL	360	1	3/19/2010
2,6-Dinitrotoluene	BQL	360	1	3/19/2010
Diphenylamine *	BQL	360	1	3/19/2010
Fluoranthene	BQL	360	1	3/19/2010
Fluorene	BQL	360	1	3/19/2010
Hexachlorobenzene	BQL	360	1	3/19/2010
Hexachlorobutadiene	BQL	360	1	3/19/2010
Hexachlorocyclopentadiene	BQL	720	1	3/19/2010
Hexachloroethane	BQL	360	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	360	1	3/19/2010
Isophorone	BQL	360	1	3/19/2010
2-Methylnaphthalene	BQL	360	1	3/19/2010

Results for Semivolatiles
by GCMS 8270

Client Sample ID: S8-10-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-32I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.89 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:25
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 84.42

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	360	1	3/19/2010
3- & 4-Methylphenol	BQL	360	1	3/19/2010
Naphthalene	BQL	360	1	3/19/2010
2-Nitroaniline	BQL	360	1	3/19/2010
3-Nitroaniline	BQL	1800	1	3/19/2010
4-Nitroaniline	BQL	1800	1	3/19/2010
Nitrobenzene	BQL	360	1	3/19/2010
2-Nitrophenol	BQL	360	1	3/19/2010
4-Nitrophenol	BQL	1800	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	360	1	3/19/2010
Pentachlorophenol	BQL	1800	1	3/19/2010
Phenanthrene	BQL	360	1	3/19/2010
Phenol	BQL	360	1	3/19/2010
Pyrene	BQL	360	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	360	1	3/19/2010
2,4,5-Trichlorophenol	BQL	360	1	3/19/2010
2,4,6-Trichlorophenol	BQL	360	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.9	88
2-Fluorophenol	10	9.8	98
Nitrobenzene-d5	10	9.6	96
Phenol-d6	10	9.8	98
2,4,6-Tribromophenol	10	9.1	91
4-Terphenyl-d14	10	10.6	106

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: S8-11-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-33A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 3/10/2011 13:40
Date Received: 3/11/2010
Matrix: Soil
Solids 83.31

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.48	mg/Kg	1	03/17/10 18:22

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	81.4	81.4		70-130

Comments:

Batch Information

Analytical Batch: VP031710
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.57 g
Final Volume: 5 mL

Analyst: BAO

NC Certification #481

Reviewed By: GRO.XLS

SGS North America, Inc.

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: S8-11-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-33J
Lab Project ID: G341-616

Date Collected: 3/10/2011 13:40
Date Received: 3/11/2010
Matrix: Soil
Solids 83.31
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.41	mg/Kg	1	03/17/10 14:30

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	38.8	97

Comments:

Batch Information

Analytical Batch: EP031710
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16211
Prep Method: 3541
Prep Date: 03/15/10
Initial Prep Wt/Vol: 32.38 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-11-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-33A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:40
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.57 g
%Solids: 83.3

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	45.7	1	3/15/2010
Benzene	BQL	4.57	1	3/15/2010
Bromobenzene	BQL	4.57	1	3/15/2010
Bromochloromethane	BQL	4.57	1	3/15/2010
Bromodichloromethane	BQL	4.57	1	3/15/2010
Bromoform	BQL	4.57	1	3/15/2010
Bromomethane	BQL	4.57	1	3/15/2010
2-Butanone	BQL	22.8	1	3/15/2010
n-Butylbenzene	BQL	4.57	1	3/15/2010
sec-Butylbenzene	BQL	4.57	1	3/15/2010
tert-Butylbenzene	BQL	4.57	1	3/15/2010
Carbon disulfide	BQL	4.57	1	3/15/2010
Carbon tetrachloride	BQL	4.57	1	3/15/2010
Chlorobenzene	BQL	4.57	1	3/15/2010
Chloroethane	BQL	4.57	1	3/15/2010
Chloroform	BQL	4.57	1	3/15/2010
Chloromethane	BQL	4.57	1	3/15/2010
2-Chlorotoluene	BQL	4.57	1	3/15/2010
4-Chlorotoluene	BQL	4.57	1	3/15/2010
Dibromochloromethane	BQL	4.57	1	3/15/2010
1,2-Dibromo-3-chloropropane	BQL	22.8	1	3/15/2010
Dibromomethane	BQL	4.57	1	3/15/2010
1,2-Dibromoethane (EDB)	BQL	4.57	1	3/15/2010
1,2-Dichlorobenzene	BQL	4.57	1	3/15/2010
1,3-Dichlorobenzene	BQL	4.57	1	3/15/2010
1,4-Dichlorobenzene	BQL	4.57	1	3/15/2010
trans-1,4-Dichloro-2-butene	BQL	22.8	1	3/15/2010
1,1-Dichloroethane	BQL	4.57	1	3/15/2010
1,1-Dichloroethene	BQL	4.57	1	3/15/2010
1,2-Dichloroethane	BQL	4.57	1	3/15/2010
cis-1,2-Dichloroethene	BQL	4.57	1	3/15/2010
trans-1,2-dichloroethene	BQL	4.57	1	3/15/2010
1,2-Dichloropropane	BQL	4.57	1	3/15/2010
1,3-Dichloropropane	BQL	4.57	1	3/15/2010
2,2-Dichloropropane	BQL	4.57	1	3/15/2010
1,1-Dichloropropene	BQL	4.57	1	3/15/2010
cis-1,3-Dichloropropene	BQL	4.57	1	3/15/2010
trans-1,3-Dichloropropene	BQL	4.57	1	3/15/2010
Dichlorodifluoromethane	BQL	4.57	1	3/15/2010
Diisopropyl ether (DIPE)	BQL	4.57	1	3/15/2010
Ethylbenzene	BQL	4.57	1	3/15/2010
Hexachlorobutadiene	BQL	4.57	1	3/15/2010
2-Hexanone	BQL	11.4	1	3/15/2010
Iodomethane	BQL	4.57	1	3/15/2010

SGS North America, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: S8-11-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID G341-616-33A
Lab Project ID: G341-616
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-10-2011 13:40
Date Received: 3/11/2010
Matrix: Soil
Sample Amount: 6.57 g
%Solids: 83.3

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	4.57	1	3/15/2010
4-Isopropyltoluene	BQL	4.57	1	3/15/2010
Methylene chloride	BQL	18.3	1	3/15/2010
4-Methyl-2-pentanone	BQL	11.4	1	3/15/2010
Methyl-tert-butyl ether (MTBE)	BQL	4.57	1	3/15/2010
Naphthalene	BQL	4.57	1	3/15/2010
n-Propyl benzene	BQL	4.57	1	3/15/2010
Styrene	BQL	4.57	1	3/15/2010
1,1,1,2-Tetrachloroethane	BQL	4.57	1	3/15/2010
1,1,2,2-Tetrachloroethane	BQL	4.57	1	3/15/2010
Tetrachloroethene	BQL	4.57	1	3/15/2010
Toluene	BQL	4.57	1	3/15/2010
1,2,3-Trichlorobenzene	BQL	4.57	1	3/15/2010
1,2,4-Trichlorobenzene	BQL	4.57	1	3/15/2010
Trichloroethene	BQL	4.57	1	3/15/2010
1,1,1-Trichloroethane	BQL	4.57	1	3/15/2010
1,1,2-Trichloroethane	BQL	4.57	1	3/15/2010
Trichlorofluoromethane	BQL	4.57	1	3/15/2010
1,2,3-Trichloropropane	BQL	4.57	1	3/15/2010
1,2,4-Trimethylbenzene	BQL	4.57	1	3/15/2010
1,3,5-Trimethylbenzene	BQL	4.57	1	3/15/2010
Vinyl chloride	BQL	4.57	1	3/15/2010
m-,p-Xylene	BQL	9.13	1	3/15/2010
o-Xylene	BQL	4.57	1	3/15/2010

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	59.4	119
Toluene-d8	50	53.9	108
4-Bromofluorobenzene	50	45.3	91

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-11-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-33I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.35 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:40
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 83.31

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	371	1	3/19/2010
Acenaphthylene	BQL	371	1	3/19/2010
Anthracene	BQL	371	1	3/19/2010
Benzo[a]anthracene	BQL	371	1	3/19/2010
Benzo[a]pyrene	BQL	371	1	3/19/2010
Benzo[b]fluoranthene	BQL	371	1	3/19/2010
Benzo[g,h,i]perylene	BQL	371	1	3/19/2010
Benzo[k]fluoranthene	BQL	371	1	3/19/2010
Benzoic Acid	BQL	1860	1	3/19/2010
Bis(2-chloroethoxy)methane	BQL	371	1	3/19/2010
Bis(2-chloroethyl)ether	BQL	371	1	3/19/2010
Bis(2-chloroisopropyl)ether	BQL	371	1	3/19/2010
Bis(2-ethylhexyl)phthalate	BQL	371	1	3/19/2010
4-bromophenyl phenyl ether	BQL	371	1	3/19/2010
Butylbenzylphthalate	BQL	371	1	3/19/2010
2-Chloronaphthalene	BQL	371	1	3/19/2010
2-Chlorophenol	BQL	371	1	3/19/2010
4-Chloro-3-methylphenol	BQL	371	1	3/19/2010
4-Chloroaniline	BQL	1860	1	3/19/2010
4-Chlorophenyl phenyl ether	BQL	371	1	3/19/2010
Chrysene	BQL	371	1	3/19/2010
Dibenzo[a,h]anthracene	BQL	371	1	3/19/2010
Dibenzofuran	BQL	371	1	3/19/2010
Di-n-Butylphthalate	BQL	371	1	3/19/2010
1,2-Dichlorobenzene	BQL	371	1	3/19/2010
1,3-Dichlorobenzene	BQL	371	1	3/19/2010
1,4-Dichlorobenzene	BQL	371	1	3/19/2010
3,3'-Dichlorobenzidine	BQL	742	1	3/19/2010
2,4-Dichlorophenol	BQL	371	1	3/19/2010
Diethylphthalate	BQL	371	1	3/19/2010
Dimethylphthalate	BQL	371	1	3/19/2010
2,4-Dimethylphenol	BQL	371	1	3/19/2010
Di-n-octylphthalate	BQL	371	1	3/19/2010
4,6-Dinitro-2-methylphenol	BQL	1860	1	3/19/2010
2,4-Dinitrophenol	BQL	1860	1	3/19/2010
2,4-Dinitrotoluene	BQL	371	1	3/19/2010
2,6-Dinitrotoluene	BQL	371	1	3/19/2010
Diphenylamine *	BQL	371	1	3/19/2010
Fluoranthene	BQL	371	1	3/19/2010
Fluorene	BQL	371	1	3/19/2010
Hexachlorobenzene	BQL	371	1	3/19/2010
Hexachlorobutadiene	BQL	371	1	3/19/2010
Hexachlorocyclopentadiene	BQL	742	1	3/19/2010
Hexachloroethane	BQL	371	1	3/19/2010
Indeno(1,2,3-c,d)pyrene	BQL	371	1	3/19/2010
Isophorone	BQL	371	1	3/19/2010
2-Methylnaphthalene	BQL	371	1	3/19/2010

Results for Semivolatiles by GCMS 8270

Client Sample ID: S8-11-4
Client Project ID: U-3810/NCDOT 001100
Lab Sample ID: G341-616-33I
Lab Project ID: G341-616
Report Basis: Dry weight
Initial Weight: 32.35 g

Analyzed By: DCS
Date Collected: 3/10/2011 13:40
Date Received: 3/11/2010
Date Extracted: 3/12/2010
Matrix: Soil
% Solids: 83.31

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
2-Methylphenol	BQL	371	1	3/19/2010
3- & 4-Methylphenol	BQL	371	1	3/19/2010
Naphthalene	BQL	371	1	3/19/2010
2-Nitroaniline	BQL	371	1	3/19/2010
3-Nitroaniline	BQL	1860	1	3/19/2010
4-Nitroaniline	BQL	1860	1	3/19/2010
Nitrobenzene	BQL	371	1	3/19/2010
2-Nitrophenol	BQL	371	1	3/19/2010
4-Nitrophenol	BQL	1860	1	3/19/2010
N-Nitrosodi-n-propylamine	BQL	371	1	3/19/2010
Pentachlorophenol	BQL	1860	1	3/19/2010
Phenanthrene	BQL	371	1	3/19/2010
Phenol	BQL	371	1	3/19/2010
Pyrene	BQL	371	1	3/19/2010
1,2,4-Trichlorobenzene	BQL	371	1	3/19/2010
2,4,5-Trichlorophenol	BQL	371	1	3/19/2010
2,4,6-Trichlorophenol	BQL	371	1	3/19/2010

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.6	66
2-Fluorophenol	10	9.4	94
Nitrobenzene-d5	10	8.5	85
Phenol-d6	10	9.2	92
2,4,6-Tribromophenol	10	7.3	73
4-Terphenyl-d14	10	9.9	99

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: _____

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio
- West Virginia

www.us.sgs.com

(1) CLIENT: GEL ENG. OF NC, INC.
CONTACT: ANDREW EYER PHONE NO: 919-323-8828
PROJECT: U-3910/NCDOT00110 SITE/PWSID#: ONSLOW Co.
REPORTS TO: ANDREW EYER EMAIL: ade@gel.com
INVOICE TO: NCDOT QUOTE #:
WBS # 35901.1.1 P.O. #:

SGS Reference #: G341-616

page _____ of _____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C=COMP G=GRAB MI=Multi Incremental Samples	Preservatives Used		Method									REMARKS/ LOC ID
							Analysis Required (3)											
							DRO	GRO	VOCs - 8260	SVOCs - 8270								
55	57-4-2	3/10/10	10:00	SO	8	G	1	2	4	1								
56	57-5-2		10:10	SO	8	G	1	2	4	1								
57	58-1-8		10:50	SO	8	G	1	2	4	1								
58	58-2-8		11:10	SO	8	G	1	2	4	1								
59	58-3-4		11:20	SO	8	G	1	2	4	1								
60	58-4-4		12:00	SO	8	G	1	2	4	1								
61	58-5-8		12:15	SO	8	G	1	2	4	1								
62	58-6-8		12:30	SO	8	G	1	2	4	1								
63	58-7-8		12:45	SO	8	G	1	2	4	1								
64	58-8-4		13:00	SO	8	G	1	2	4	1								

(5)

	Date	Time	
Collected/Relinquished By:(1) Kelt Dlun	3/11/10	15:15	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)
DOD Project? YES NO
Cooler ID _____
Special Deliverable Requirements:
Requested Turnaround Time and-or Special Instructions:

Samples Received Cold? (YES) NO
Temperature °C: Cooler 2.0, 2.1, TB 2.0°C
Chain of Custody Seal: (Circle) INTACT BROKEN (ABSENT)

SGS North America, Inc.

NC Certification #481

Page 238 of 239

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
• Alaska • Maryland
• New Jersey • New York
• North Carolina • Ohio
• West Virginia
www.us.sgs.com

(1) CLIENT: GEL ENG. OF NC, INC
CONTACT: ANDREW EYER PHONE NO: 919-323-8828
PROJECT: U-3810/NCDOT 10110 SITE/PWSID#: ONSLOW Co.
REPORTS TO: ANDREW EYER EMAIL: ade@gel.com
INVOICE TO: NCDOT QUOTE #:
WBS # 35801.1.1 P.O. #:

SGS Reference #: G341-616 page ____ of ____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used		Methanol								REMARKS/ LOC ID
							(3) Analysis Required		DRO	GRO	VOCs - 8260	SVOCs - 8270					
31	S8-9-4	3/10/10	1310	SO	8	G	1	2	4	1							
32	S8-10-4		1325	SO	8	G	1	2	4	1							
33	S8-11-4		1340	SO	8	G	1	2	4	1							
34	S9-1-8		~~1600~~ 1600	SO	3	G	1	2									
35	S9-2-8		1610	SO	3	G	1	2									
36	S9-3-8		1620	SO	3	G	1	2									
37	S9-4-8	↓	1630	SO	3	G	1	2									
38	S11-1-4	3/11/10	0915	SO	3	G	1	2									
39	S11-2-8		09:25	SO	3	G	1	2									
40	S11-3-4	↓	09:35	SO	3	G	1	2									

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Robert Oliver	3/11/10	15:15	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)
DOD Project? YES NO
Cooler ID ____
Special Deliverable Requirements:
Requested Turnaround Time and-or Special Instructions:
Samples Received Cold? (YES) NO
Cooler TB
Temperature °C: 2.0, 2.1, 2.0
Chain of Custody Seal: (Circle)
INTACT BROKEN (ABSENT)

NC Certification #181

SGS North America, Inc.

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

White - Retained by Lab
Pink - Retained by Client

APPENDIX III

PHOTOGRAPHS SHOWING SOIL BORING LOCATIONS


PINEY GREEN ROAD
S8-10
S8-9
S8-11
S8-7
Crom's Auto Shop
1965 Piney Green Road
Parcel No. 218
S8-6
S8-8
S8-4
S8-3
S8-5
S8-2
S8-1
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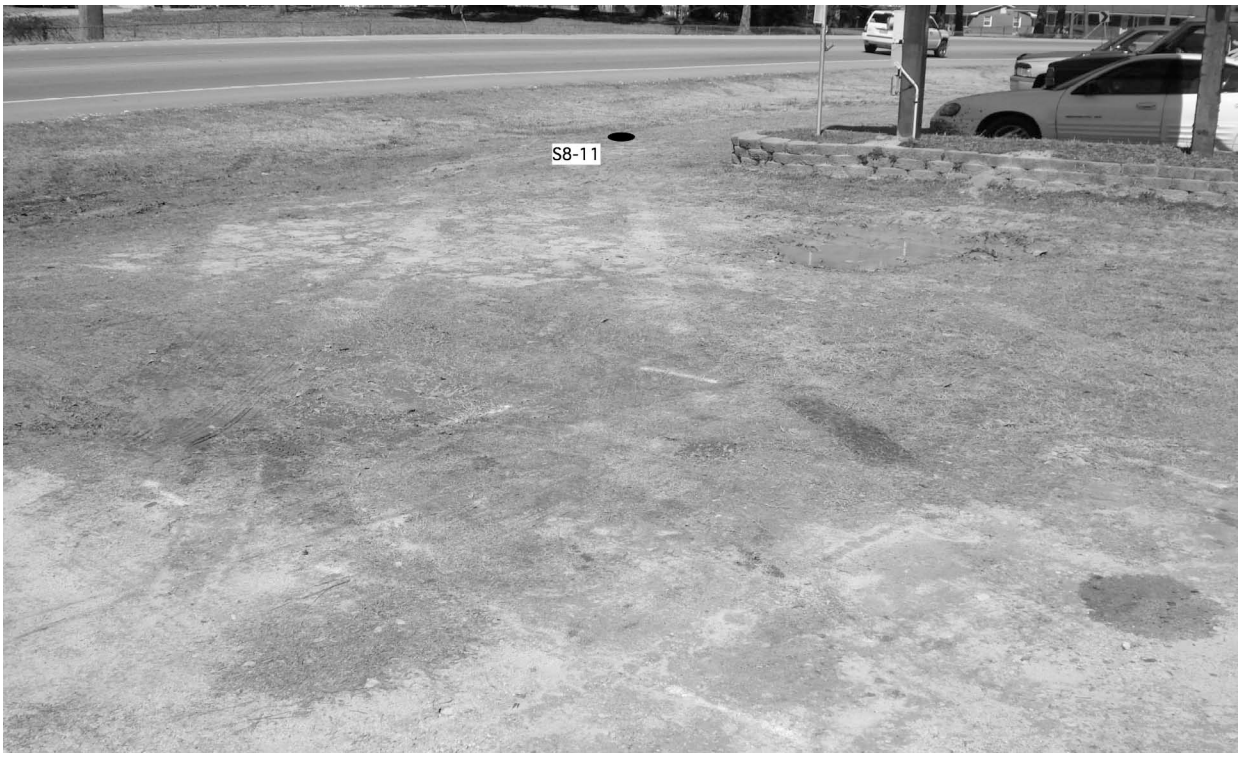
CROM'S AUTOMOTIVE
TRANSMISSION SERVICE $89.95
M-F OPEN 8-5
353-1258
S8-5
S8-3
S8-2
S8-1


CROM'S AUTOMOTIVE
TRANSMISSIONS
ULTRA Service Center
TIRES
CROM'S TRANSMISSION
AUTOMOTIVE SPECIALIST
S8-07
S8-09
S8-10


S8-11