November 5, 2012

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

Attention: Mr. Gordon Box, L.G.

Reference: **Preliminary Site Assessment Report**
NCDOT No. U-2519CB, WBS Element: 34817.1.2
Fayetteville Outer Loop from South of SR 1400 to East of SR 1415
Parcel 021 Bell, Robert A & Bell, James R.
Fayetteville, Cumberland County, North Carolina
S&ME Project No. 1054-12-341

Dear Mr. Box,

S&ME, Inc. (S&ME) is submitting this Preliminary Site Assessment (PSA) Report to the North Carolina Department of Transportation (NCDOT). This report presents the background information, field activities, findings, conclusions, and recommendations. These services were performed in general accordance with S&ME Proposal No. P156-12V, dated September 7, 2012, and Contract Number 7000012210 dated June 2, 2012, between NCDOT and S&ME. S&ME also performed a PSA for an additional parcel along the corridor (Parcel #006). As requested by NCDOT, S&ME prepared a separate report for Parcel #006.

1.0 INTRODUCTION

1.1 Background Information

Based on the NCDOT's October 17, 2011, *Request for Technical and Cost Proposal*, and additional information subsequently provided by Mr. Gordon Box of the NCDOT via email, the PSA was conducted within the NCDOT right-of-way (ROW) and/or up to the permanent utility easement at the following property:

> Parcel #021 – Robert and James Bell Property– (herein after referred to as the subject property)

Additional information provided from the NCDOT's file transfer site and additional e-mails, included:

- CADD and PDF files which were used as a base map for preparation of this PSA.

The PSA included a preliminary geophysical site assessment, subsequent limited soil sampling (up to 20 feet (ft.) below ground surface (bgs)), and the installation of one temporary groundwater monitor well in the designated ROW/Easement assessment area. At location B-4, a temporary groundwater monitor well was installed to a total depth of 45 feet below ground surface (ft. bgs); however, groundwater was not encountered and a groundwater sample was not collected. The site and vicinity are shown on **Figure 1**. A site map with boring locations is provided in **Figure 2** with site details in **Figure 2A**, and the soil sampling results are shown in **Figure 3**. A photographic log is provided in **Appendix I**.

1.2 Project Information

A site specific Health and Safety Plan was prepared prior to field activities. Underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator, Bateman Civil Survey of Raleigh, North Carolina, was also used to mark on site buried utilities and the potential locations of underground storage tanks (USTs) and associated utilities.

Parcel #021, Robert Bell Property, is currently an undeveloped parcel of land (**Figure 2 and 2A**). Several cars were parked on the property, and it appears that the site is used for temporary parking. Although the site reportedly operated as a gas station in the past, there were no records associated with the operation. S&ME searched the North Carolina Department of Environment and Natural Resources Underground Storage Tank (NCDENR UST) Section Registry and Incident Databases for database records associated with the site. The site did not appear in the databases searched. S&ME was requested to investigate the existing NCDOT right-of-way (ROW) and/or up to the permanent utility easement in preparation for construction of the Fayetteville Loop Extension.

2.0 GEOPHYSICAL SITE ASSESSMENT

2.1 Methods and Field Testing

On September 19, 2012, S&ME personnel performed time domain electromagnetic (TDEM) and ground penetrating radar (GPR) surveys within the proposed right-of-way and/or easement of the accessible areas of Parcel #21. These technologies were used in conjunction with each another in order to detect the presence of potential USTs at the site. A brief description of each technology is presented in Section 2.2 and 2.3.

2.2 Time Domain Electromagnetic Methodology

TDEM methods measure the electrical conductivity of shallow subsurface materials. The conductivity is determined by transmitting a time-varying magnetic pulse into the ground and measuring the amplitude and phase shift of the secondary magnetic field. The secondary magnetic field is created as the conductive materials become an inductor as the primary magnetic field is passed through them.

The TDEM survey was performed with a Geonics EM-61 MKII system, which has a 1.0-meter by 0.5-meter coil system. The EM-61 TDEM system allows discrimination between moderately conductive subsurface materials and very conductive metallic targets as the secondary electromagnetic response from metallic targets are of longer duration than those created by moderately conductive subsurface materials. Accordingly, only the later EM arrivals are recorded so that only the very conductive metallic features are targeted. The survey was designed to locate metallic tanks within depths of about five feet, the assumed maximum depth at which we anticipated the top of a UST to be present. These data can be acquired with GPS support so the results can be used in Surfer Version 10.0 to geostatistically grid and plot the data. The test location plan is shown in **Figure 4**.

TDEM data were collected along a grid spaced at approximate 5-foot intervals. **Figure 5** provides the TDEM dataset collected at the subject Parcel.

2.3 Ground Penetrating Radar

GPR is an electromagnetic method that detects interfaces between subsurface materials with differing dielectric constants. The transmitter radiates electromagnetic waves into the earth from an antenna moving across the ground surface. Electromagnetic waves are reflected back to the receiver by interfaces between materials with differing dielectric constants. The intensity of the reflected signal is a function of the contrast in the dielectric constant at the interface, the conductivity of the material that the wave is traveling through, and the frequency of the signal.

GPR data were collected over and in the vicinity of each identified TDEM anomaly with a GSSI SIRS-3000 unit equipped with a 400 MHz shielded antenna. The depth of GPR wave penetration at the site is a function of the conductivity of the subsurface materials and signal frequency. The GPR survey settings provided a maximum depth of penetration of approximately eight feet below ground surface. **Figure 6** shows the GPR test locations. **Figures 7** and **8** present the GPR profiles of the anomalies.

3.0 SOIL ASSESSMENT

3.1 Soil Sampling

On September 25 and 26, 2012, S&ME advanced 10 soil borings on the subject property within the specified NCDOT ROW/Easement, with selected locations chosen to avoid utilities located along the right-of-way of Yadkin Road (**Figures 2 and 2A**). S&ME utilized a track mounted Geoprobe® rig to perform the borings and to collect soil samples. S&ME's drill crew advanced the Geoprobe® borings up to approximately 20 ft. bgs. Boring B-14 was advanced to 45 ft. bgs in an attempt to install a temporary monitor well (Temp Well 1). Groundwater was not encountered, and the temporary well was still dry after five days; therefore, no groundwater sample was collected. The temporary monitor well was properly abandoned on October 1, 2012.

A photographic log is included in **Appendix I**. Soil samples were continuously collected in five foot long disposable acetate-plastic sleeves that line the hollow stainless-steel sample probes. Soil recovered from the sleeves was classified on-site by S&ME

personnel and screened with a photo-ionization detector (PID) at approximately two foot intervals to measure relative headspace concentrations of volatile organic compounds (VOCs). VOC headspace readings were obtained from an aliquot of each soil sample that was placed in a re-sealable bag. Another portion of the sample was placed in a separate re-sealable bag and stored in an insulated container with ice for possible laboratory analyses. After waiting approximately 15 minutes to allow the sample to reach ambient temperature and headspace equilibrium, the PID probe was inserted into the bag to obtain a headspace reading. A summary of the PID readings is shown in **Table 1,** and logs of the soil borings are included in **Appendix II.**

The soil samples with the highest level of VOCs detected with the PID for each soil boring were selected for laboratory analysis. The soil samples were analyzed by SGS Laboratories, a North Carolina certified laboratory, for total petroleum hydrocarbons for gasoline range (TPH-GRO) EPA Method 8015B/5030B and diesel range (TPH-DRO) by EPA Method 8015B/3546. Note: The soil samples were also analyzed for VOCs by EPA Method 8260B; VOC detections were reported for samples where TPH was also detected. No VOCs were reported above action levels where TPH was not detected.

Boring holes were backfilled with unused portions of soil samples and bentonite pellets. Used gloves were bagged and disposed off-site.

3.2 Soil Sample Analytical Results

The approximate soil boring locations are shown in **Figures 2 and 2A.** The soil sampling laboratory results are summarized in **Table 2** and shown in **Figure 3**, and a copy of the laboratory analytical report is included as an **Appendix III**.

The laboratory analytical results of the soil samples collected on September 25 and 26, 2012 indicated that TPH-GRO and DRO were detected in concentrations exceeding their respective NCDENR UST Section Action Level of 10 milligrams per kilogram (mg/Kg) in soil samples B-1 through B-4, and B-8. Concentrations of TPH-DRO were detected exceeding the NCDENR UST Action Level in soil samples B-6 and B-10.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Geophysical Assessment

Five TDEM anomalies (Anomalies 1 through 5) not corresponding to site surface features were identified in the TDEM dataset (**Figure 5**); the anomalies were also marked in the field.

GPR data were then collected along perpendicular profiles over the five identified TDEM anomalies; a total of fourteen GPR profiles were collected at the site (**Figures 6**). Anomaly 1 consists of three parallel linear features approximately 3 feet below ground surface (bgs) and one approximately 5 feet in length and the other two approximately 12 feet in length. Anomalies 2, 3 and 4 are characterized by shallow high amplitude reflectors approximately 1, 3 and 1 feet bgs respectively and anomaly 5 consists of a high

amplitude linear feature approximately 30 feet in length and 4 feet bgs. Example GPR profiles are located in **Figures 7 and 8**.

Anomaly 1 exhibits both TDEM and GPR responses indicative of three USTs, suggesting characterization as "Probable USTs." The "Probable USTs" located were one five-foot long (approximately 560 gallons), and two other USTs each approximately 12 feet long (approximately 6,000 to 8,000 gallons each). See photo #6 in **Appendix I** for the location of fill ports indicating the presence

Anomalies 2 through 5 do not exhibit TDEM response and/or GPR reflections indicative of USTs. Anomalies 2, 3, and 4 are most likely associated with metallic buried debris and Anomaly 5 may be associated with an abandoned utility or storm drain pipe.

4.2 Soil Assessment

On September 25 and 26, 2012, S&ME advanced 10 soil borings (labeled as B-1 through B-10) to approximately 20 feet-bgs at the subject property at the designated locations illustrated on **Figure 2**. TPH-DRO and GRO were detected in concentrations exceeding their respective Action Levels in soil samples B-1 through B-4, and B-8. TPH-DRO was detected in concentrations exceeding the Action Level in soil sample B-6 and B-10. Soil analytical results are summarized in **Table 2** and shown in **Figure 3**.

The detection of TPH-GRO and DRO in soil samples B-1 through B-4, and TPH-DRO in samples B-6 and B-10 indicate that a petroleum release has occurred. The release may be related to the UST system identified in the geophysical survey. Based on PID field measurements and laboratory analytical results, it appears that the TPH-DRO contamination is at depths greater than 9 ft. bgs in the area of borings B-1 through B-4, and at depths greater than 15 ft. bgs in the area of borings B-8 and B-10.

4.3 Recommendations

It is possible that during construction, NCDOT may encounter three USTs (one 560 gallon and two 6,000 to 8,000 gallon) as well as soil impacted with petroleum in the vicinity of sample locations. The approximate area of impacted soil is shown on **Figure 2**. While the actual dimensions of the impacted soil area cannot be measured until the area is excavated and the extent of the release is known, S&ME estimates that up to1,800 cubic yards of petroleum impacted soil may be present in the ROW and easement area on Parcel #021. S&ME recommends closure by removal of the USTs and excavation of contaminated soil in and around the UST basin.

5.0 LIMITATIONS

The estimated volumes of petroleum impacted soil stated in Section 4.3 above are based on the limited data points and soil samples collected by S&ME for this preliminary investigation. The actual amount of petroleum impacted soil encountered during roadway expansion activities may vary depending on the actual grading plan for the project within the affected ROW/Easement.

The results of this preliminary investigation are limited to the boring locations presented

herein. Additional petroleum impacted soil may be present on the subject property itself as well as underneath Yadkin Road. The results of this Preliminary Site Assessment are not all inclusive and may not represent existing conditions across the entire property. These results only reflect the current conditions at the locations sampled on the date this Preliminary Site Assessment was performed.
This report has been prepared in accordance with generally accepted environmental engineering and geophysical practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.

The conclusions for the geophysical assessment submitted herein are based upon the data obtained from the non-invasive testing. As such, even within the surveyed area, the survey cannot be considered 100 percent accurate due to inherent method limitations, survey limitations, site features, and/or unforeseen site-specific conditions. Accordingly, the possibility exists that not all subsurface, man-made features have been located.

TDEM and GPR are commonly used to locate buried debris and subsurface targets, however certain limitations exist. Nearby, metallic objects such as vehicles, metal buildings/storage units, heating/air conditioning units, utilities, etc. will interfere with the TDEM survey. As for GPR, properties of the subsurface materials (e.g., clay content, moisture, etc.) can have a significant impact on the effective depth of penetration of the survey. Accordingly, non-metallic tanks, tanks at depths below about 5 feet, and tanks outside of the survey area may not have been detected using the GPR technique. In addition, due to interference, there may be areas within the proposed survey area where an interpretation of subsurface features was not feasible.

The location and/or determination of the lack thereof of USTs are based on our review of provided information and of the FDEM and GPR data. Under no circumstances does S&ME assume any responsibility for damages resulting from the presence of or damage to USTs that may exist but were not identified by our survey.

This Preliminary Site Assessment was performed solely for NCDOT regarding the above-referenced site and assessment area. This report is provided for the sole use of NCDOT. Use of this report by any other parties will be at such party's sole risk. S&ME disclaims liability for any such use or reliance by third parties. The observations presented in this report are indicative of conditions during the time of the assessment and of the specific areas referenced.

CLOSING

S&ME welcomes the opportunity to assist you with your environmental needs. Should you have any questions regarding this report, please call Tom Raymond at (919) 954-6229.

Sincerely,

S&ME, Inc.

Candy E. Elliott
Staff Scientist

Michael W. Pfeifer
Project Manager

Kevin Hon
Project Geophysicist

Tom Raymond, PE
Environmental Services Leader

NORTH CAROLINA PROFESSIONAL SEAL 18760 ENGINEER THOMAS P. RAYMOND
Nov. 5, 2012

Attachments:
Table 1 – Soil Field Screening Results
Table 2 – Soil Laboratory Analytical Results
Figure 1 – Site Vicinity Map
Figure 2 – Site Map with Boring Locations
Figure 2A – Site Map Detail
Figure 3 – Soil Sample Results Map
Figure 4 – TDEM Test Location Plan
Figure 5 – TDEM Data Plot
Figure 6 – GPR Test Location Plan
Figure 7 – GPR Profile Lines 030, 033 and 034
Figure 8 – GPR Profile Lines 031, 036, 039 and 044
Appendix I – Photographic Log
Appendix II – Boring Logs
Appendix III – Laboratory Analytical Report

TABLES

Table 1
PID Field Soil Screening Results
NCDOT Project U2519CB Fayetteville Outer Loop
Fayetteville, Cumberland County, North Carolina
S&ME Project No. 1054-12-341

Boring Number	Date Measured	Depth (feet bgs)	PID Reading (PPM)
B-1	9/25/2012	1.5-2.0	6.9
B-1	9/25/2012	4.5-5.0	7
B-1	9/25/2012	6.5-7.0	8.1
B-1	9/25/2012	9.5-10.0	12.3
B-1	9/25/2012	11.5-12.0	12.5
B-1	9/25/2012	14.5-15.0	12
B-1	9/25/2012	16.5-17.0	521
B-1	9/25/2012	19.5-20.0	892
B-2	9/25/2012	1.5-2.0	9.2
B-2	9/25/2012	4.5-5.0	7.7
B-2	9/25/2012	6.5-7.0	7.3
B-2	9/25/2012	9.5-10.0	1,489
B-2	9/25/2012	11.5-12.0	1,496
B-2	9/25/2012	14.5-15.0	624.7
B-2	9/25/2012	16.5-17.0	838
B-2	9/25/2012	19.5-20.0	1,004
B-3	9/25/2012	1.5-2.0	15.5
B-3	9/25/2012	4.5-5.0	18.5
B-3	9/25/2012	6.5-7.0	12.7
B-3	9/25/2012	9.5-10.0	13.9
B-3	9/25/2012	11.5-12.0	1,280
B-3	9/25/2012	14.5-15.0	280.2
B-3	9/25/2012	16.5-17.0	777.5
B-3	9/25/2012	19.5-20.0	308.1
B-4	9/25/2012	1.5-2.0	42.4
B-4	9/25/2012	4.5-5.0	11.8
B-4	9/25/2012	6.5-7.0	14.1
B-4	9/25/2012	9.5-10.0	211.9
B-4	9/25/2012	11.5-12.0	10.2
B-4	9/25/2012	14.5-15.0	113.4
B-4	9/25/2012	16.5-17.0	1526
B-4	9/25/2012	19.5-20.0	727
B-5	9/25/2012	1.5-2.0	8.4
B-5	9/25/2012	4.5-5.0	7.7
B-5	9/25/2012	6.5-7.0	6.5
B-5	9/25/2012	9.5-10.0	5
B-5	9/25/2012	11.5-12.0	5.7
B-5	9/25/2012	14.5-15.0	5.4
B-5	9/25/2012	16.5-17.0	7.7
B-5	9/25/2012	19.5-20.0	9

Note:
PID: Photoionization Detector
ppm: parts per million volume in air
bgs: below ground surface
Shaded cells indicate the sample interval selected for laboratory analysis

Table 1
PID Field Soil Screening Results
NCDOT Project U2519CB Fayetteville Outer Loop
Fayetteville, Cumberland County, North Carolina
S&ME Project No. 1054-12-341

Boring Number	Date Measured	Depth (feet bgs)	PID Reading (PPM)
B-6	9/25/2012	1.5-2.0	7
B-6	9/25/2012	4.5-5.0	9.4
B-6	9/25/2012	6.5-7.0	8.7
B-6	9/25/2012	9.5-10.0	10.3
B-6	9/25/2012	11.5-12.0	12.7
B-6	9/25/2012	14.5-15.0	7.3
B-6	9/25/2012	16.5-17.0	6.1
B-6	9/25/2012	19.5-20.0	NM
B-7	9/25/2012	1.5-2.0	7
B-7	9/25/2012	4.5-5.0	9.2
B-7	9/25/2012	6.5-7.0	12.5
B-7	9/25/2012	9.5-10.0	13.7
B-7	9/25/2012	11.5-12.0	11
B-7	9/25/2012	14.5-15.0	9.6
B-7	9/25/2012	16.5-17.0	2.7
B-7	9/25/2012	19.5-20.0	10.8
B-8	9/26/2012	1.5-2.0	1.8
B-8	9/26/2012	4.5-5.0	1.7
B-8	9/26/2012	6.5-7.0	1.9
B-8	9/26/2012	9.5-10.0	2.5
B-8	9/26/2012	11.5-12.0	2.5
B-8	9/26/2012	14.5-15.0	4.8
B-8	9/26/2012	16.5-17.0	286.9
B-8	9/26/2012	19.5-20.0	353.7
B-9	9/26/2012	1.5-2.0	1.5
B-9	9/26/2012	4.5-5.0	2
B-9	9/26/2012	6.5-7.0	3
B-9	9/26/2012	9.5-10.0	2.2
B-9	9/26/2012	11.5-12.0	2.4
B-9	9/26/2012	14.5-15.0	2
B-9	9/26/2012	16.5-17.0	2.1
B-9	9/26/2012	19.5-20.0	2.5
B-10	9/26/2012	1.5-2.0	1.3
B-10	9/26/2012	4.5-5.0	1
B-10	9/26/2012	6.5-7.0	2
B-10	9/26/2012	9.5-10.0	1.6
B-10	9/26/2012	11.5-12.0	1.1
B-10	9/26/2012	14.5-15.0	1.1
B-10	9/26/2012	16.5-17.0	2.1
B-10	9/26/2012	19.5-20.0	1.1

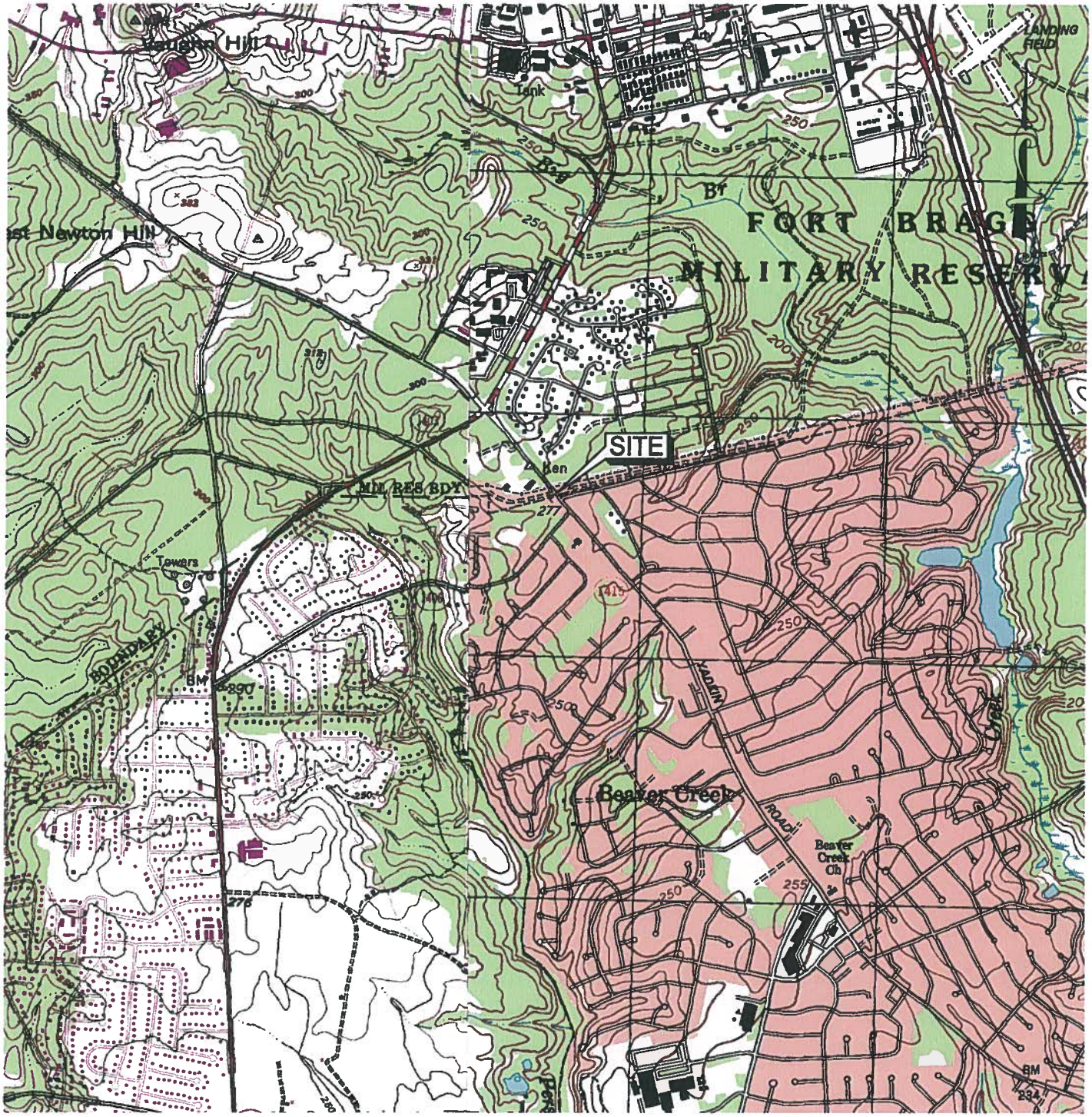
Note:
PID: Photoionization Detector
ppm: parts per million volume in air
bgs: below ground surface
NM: not measured
Shaded cells indicate the sample interval selected for laboratory analysis

Table 2
Soil Analytical Results
NCDOT Project U2519CB Fayetteville Outer Loop
Fayetteville, Cumberland County, North Carolina
S&ME Project No. 1054-12-341

			Total Petroleum Hydrocarbons by EPA Method 8015C	
Sample ID	**Date Collected**	**Sample Depth (ft. bgs.)**	**Gasoline Range Organics (mg/Kg)**	**Diesel Range Organics (mg/Kg)**
B-1	9/25/2012	19.5	**1,180**	**14,400**
B-2	9/25/2012	11.5	**420**	**10,900**
B-3	9/25/2012	11.5	**710**	**9,730**
B-4	9/25/2012	17	**763**	**3,920**
B-5	9/25/2012	19.5	BDL	BDL
B-6	9/25/2012	11.5	BDL	**90.3**
B-7	9/26/2012	9.5	BDL	BDL
B-8	9/26/2012	19.5	**62.2**	**1,230**
B-9	9/26/2012	7	BDL	BDL
B-10	9/26/2012	16.5	BDL	**12.2**
NCDWM-UST Action Limit			**10**	**10**

Notes:
1. All results are listed in milligrams per kilograms (mg/kg) = parts per million.
2. ft-bgs = feet below ground surface.
3. TPH: Total Petroleum Hydrocarbons
4. GRO: Gasoline Range Organics
5. DRO: Diesel Range Organics
6. NCDWM: North Carolina Division of Waste Management
7. UST: Underground Storage Tank
8. BDL: Below laboratory method detection limit.

FIGURES



GRAPHIC SCALE

1000 0 500 1000 2000

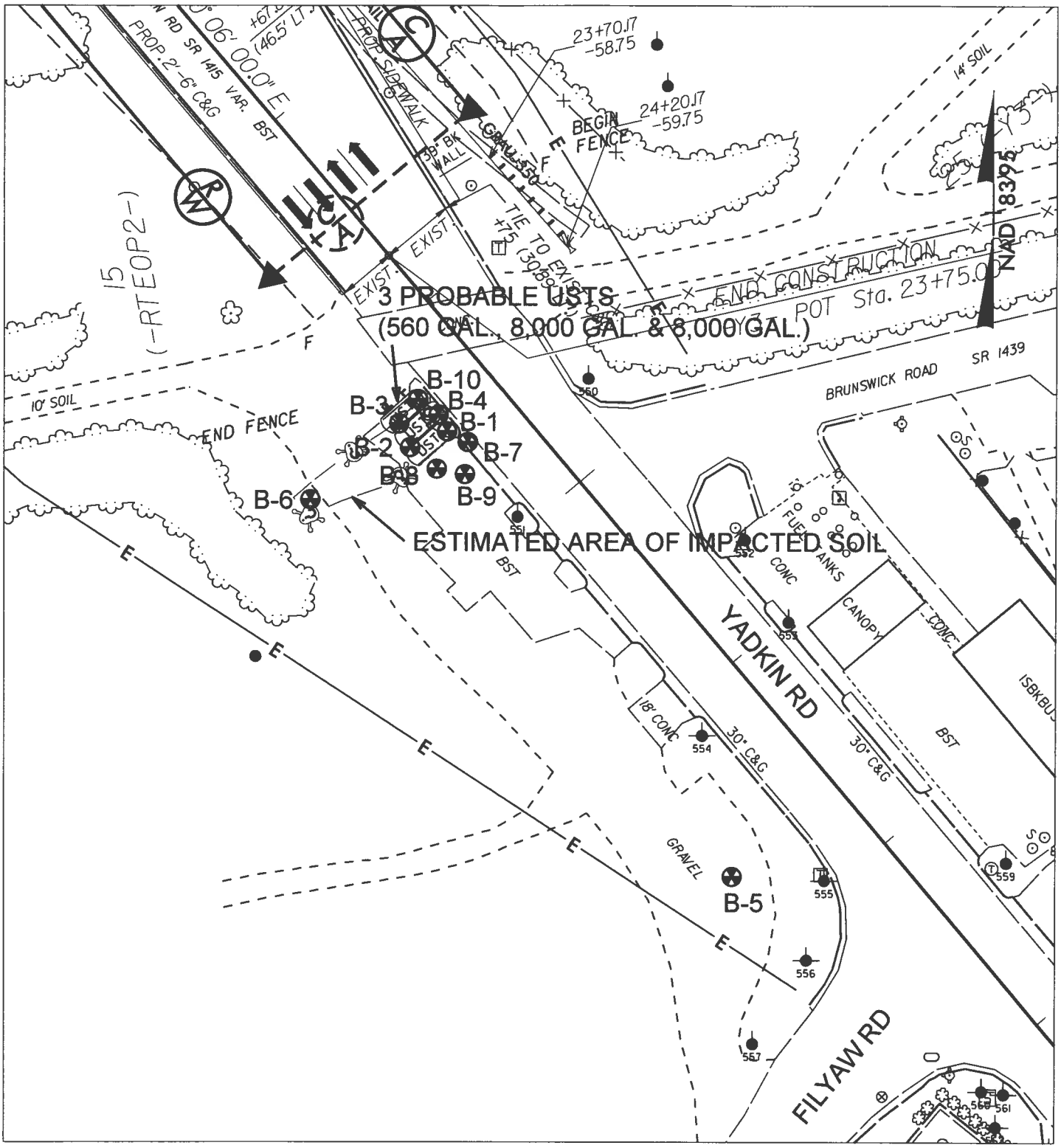
(IN FEET)

TOPO SOURCE: NCGS DRG
FAYETTEVILLE, DATED 1997
CLIFDALE, DATED 1948, PHOTOREVISED 1982
CONTOUR INTERVAL 10 FEET

A-10xx

SCALE: 1" = 2000'	S&ME WWW.SMEINC.COM NC ENGINEER LICENSE #F-0176 3201 SPRING FOREST RD, RALEIGH, NC 27616	VICINITY MAP NCDOT U-2519CB - FAYETTEVILLE OUTER LOOP FAYETTEVILLE, NORTH CAROLINA
DATE: OCT. 2012		FIGURE NO. 1
DRAWN BY: BTR		
PROJECT NO: 1054-12-341		

S:\PROJECTS\2012\12-341 NCDOT U2519CB Fayetteville PSAs\CAD\FIG1.DWG, FIG1, 10/23/2012 1:13:09 PM, 1:1



LEGEND

Geoenvironmental Boring

Potential Soil Contamination: Area or Site

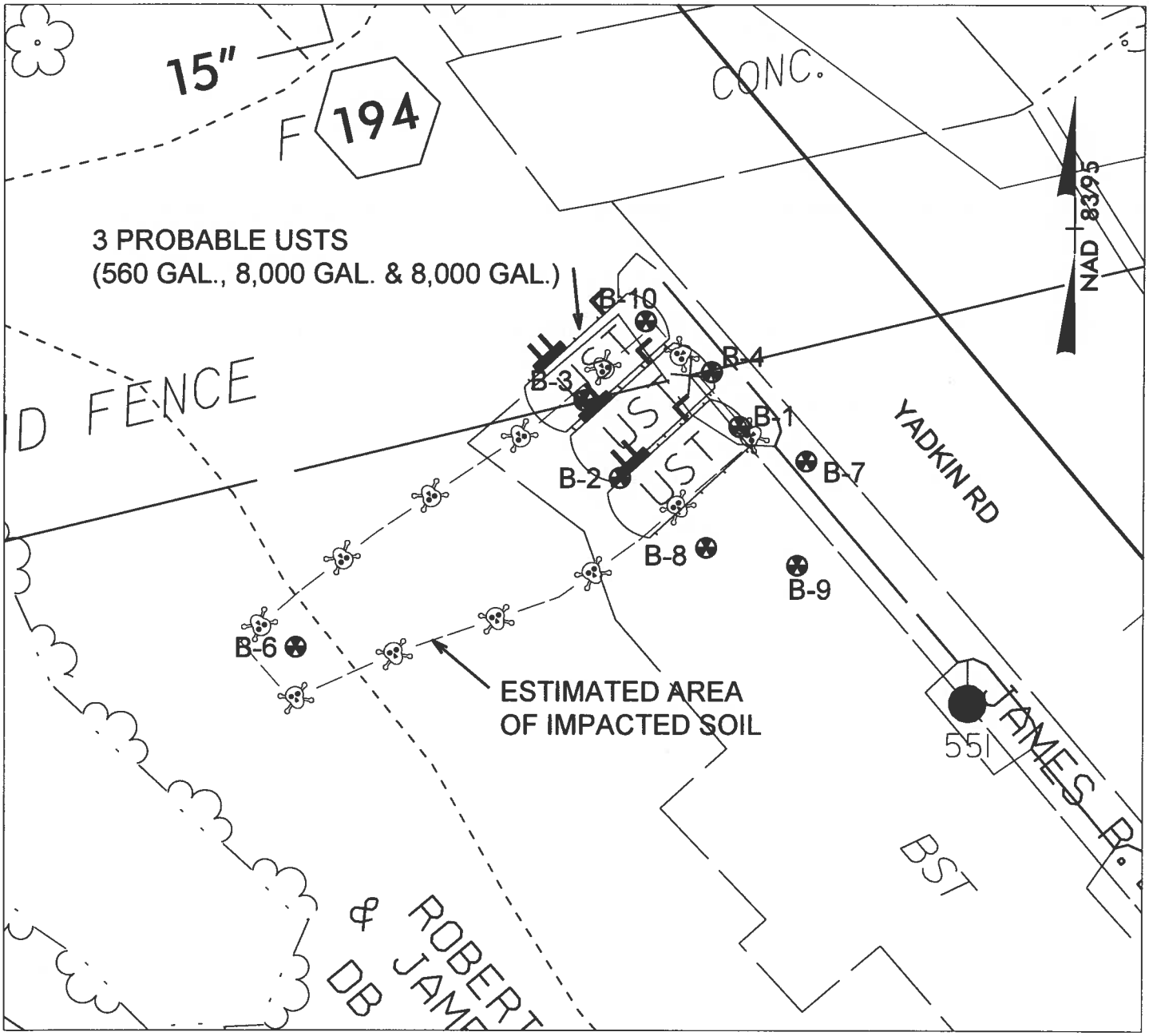
Underground Storage Tank (UST)

0 60 120

FEET

A-3379

SCALE: 1" = 60'	S&ME WWW.SMEINC.COM	SITE MAP	SHEET NO. 2
DATE: OCT. 2012	NC ENGINEER LICENSE #F-0176	NCDOT U-2519CB - FAYETTEVILLE UST REMOVAL	
DRAWN BY: BTR	3201 SPRING FOREST RD, RALEIGH, NC 27616	FAYETTEVILLE, NORTH CAROLINA	
PROJECT NO: 1054-12-341			



LEGEND

- Geoenvironmental Boring
- Existing Right of Way Line
- Existing Easement Line (EXIST R/W)
- Property Line
- Existing Fence Line
- Proposed Right of Way Line with Iron Pin and Cap Marker (RW)
- Known Soil Contamination: Area or Site
- Proposed Slope Stakes Cut (C)
- Proposed Slope Stakes Fill (F)
- Proposed Temporary Construction Easement (E)
- Proposed Permanent Drainage Easement (PDE)
- Proposed Permanent Utility Easement (PUE)
- Underground Storage Tank (UST)

0 20 40

FEET

A-3488

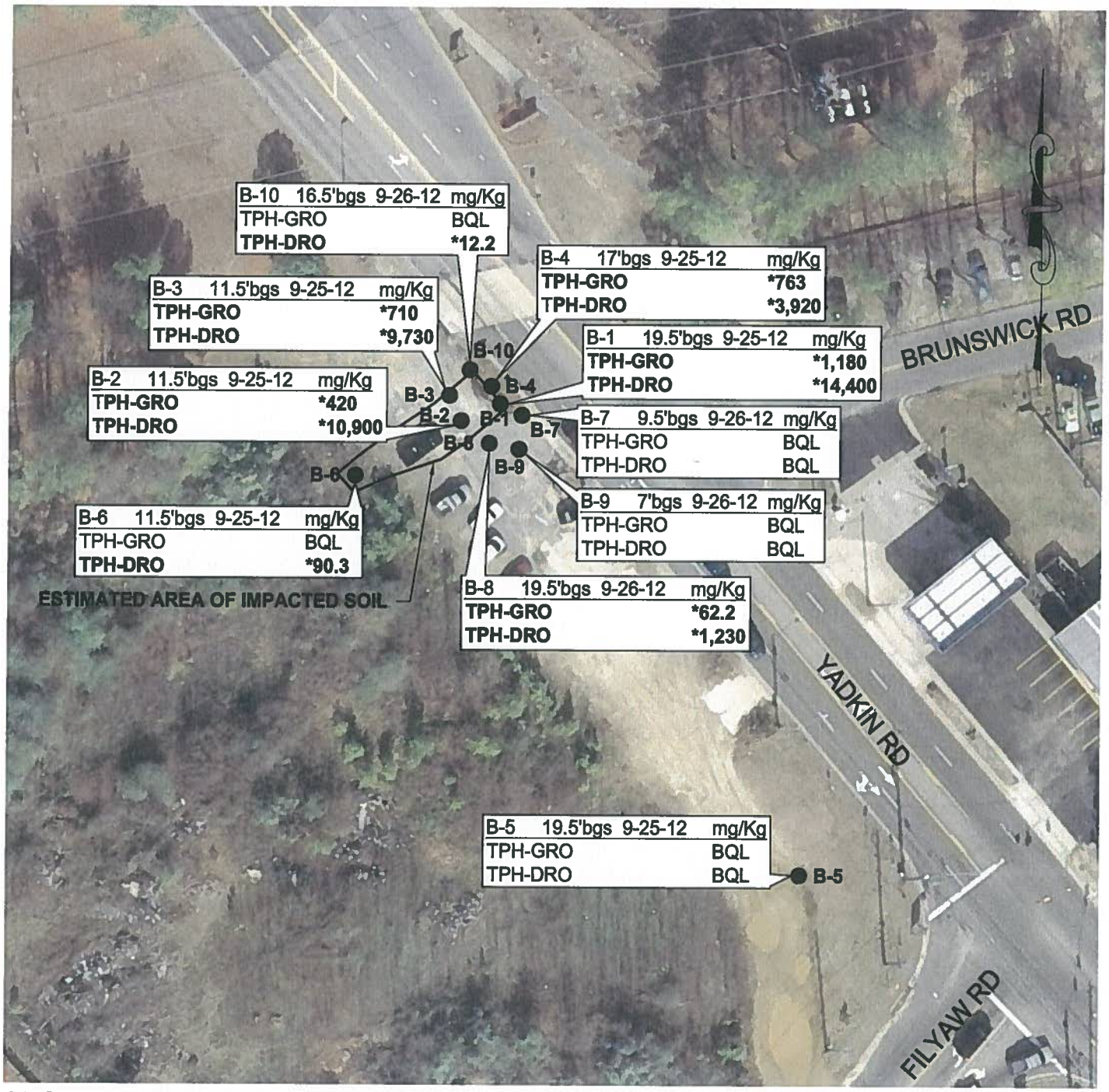
SCALE:	1" = 20'
DATE:	OCT. 2012
DRAWN BY:	BTR
PROJECT NO:	1054-12-341

S&ME
WWW.SMEINC.COM
NC ENGINEER LICENSE #F-0176
3201 SPRING FOREST RD, RALEIGH, NC 27616

SITE MAP DETAIL

NCDOT U-2519CB - FAYETTEVILLE UST REMOVAL
FAYETTEVILLE, NORTH CAROLINA

SHEET NO.
2A



LEGEND

- ● APPROXIMATE CONFIRMATORY SAMPLE LOCATION
- BQL - BELOW QUANTIFIABLE LIMIT
- mg/Kg - MILLIGRAMS PER KILOGRAM
- TPH - TOTAL PETROLEUM HYDROCARBONS
- GRO - GASOLINE RANGE ORGANICS
- DRO - DIESEL RANGE ORGANICS
- bgs - BELOW GROUND SURFACE (FEET)
- * INDICATES EXCEEDENCE OF STATE ACTION LEVEL OF 10 mg/Kg

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

IMAGE SOURCE: NC ONEMAP, DATED 2010

A-3380

SCALE:	1" = 60'
DATE:	OCT. 2012
DRAWN BY:	BTR
PROJECT NO:	1054-12-341

S&ME
WWW.SMEINC.COM
NC ENGINEER LICENSE #F-0176
3201 SPRING FOREST RD, RALEIGH, NC 27616

SOIL SAMPLE RESULTS MAP

NCDOT U-2519CB - FAYETTEVILLE OUTER LOOP
FAYETTEVILLE, NORTH CAROLINA

FIGURE NO. 3

NORTH

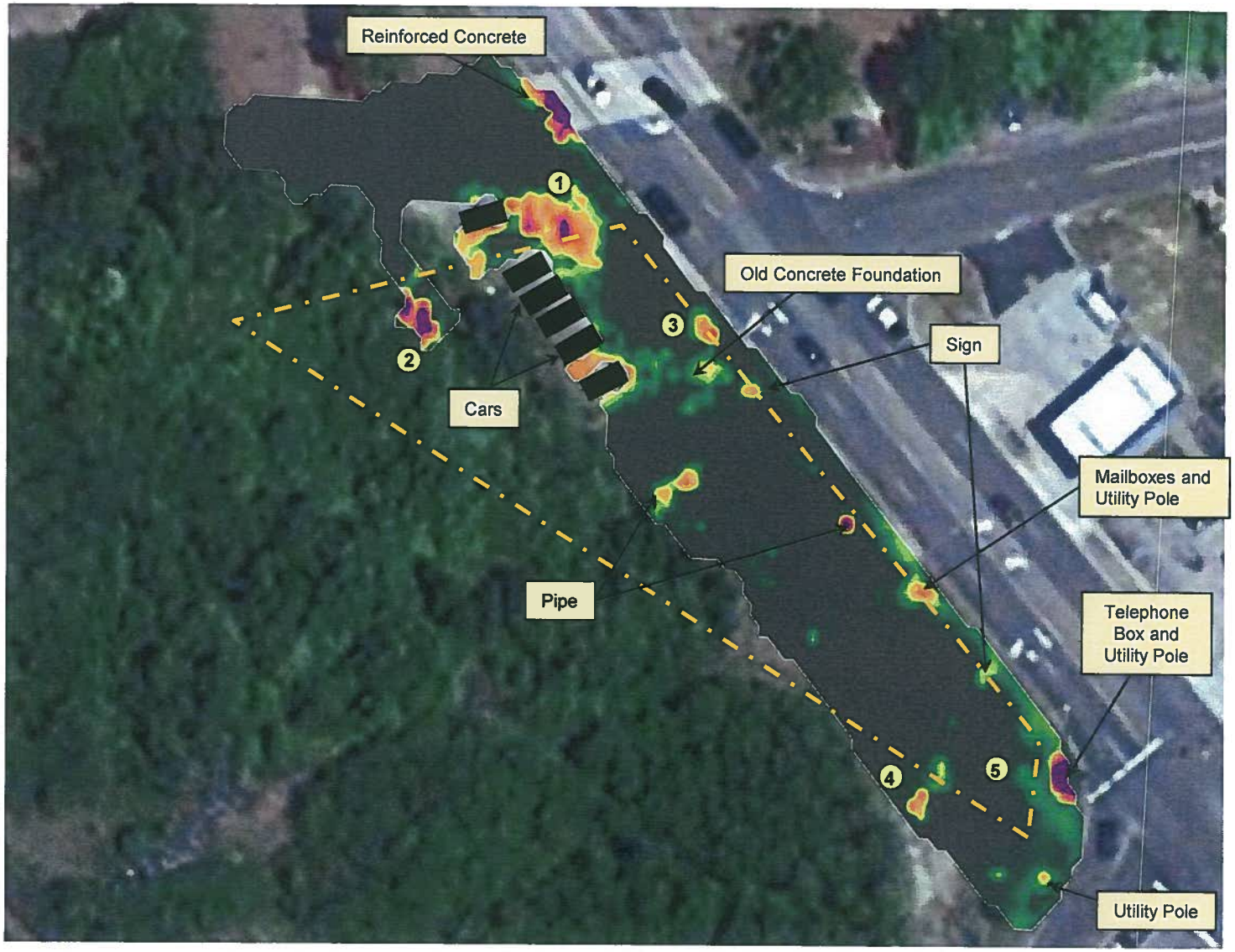
LEGEND

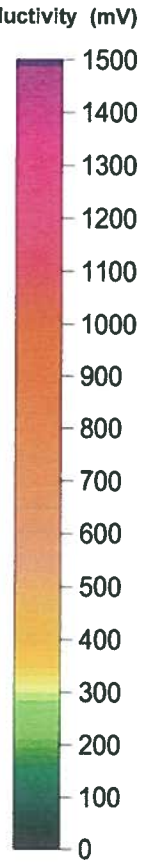
- Requested Study Area Limits
- TDEM Path

REFERENCE:

- Google Earth Aerial Photograph
- Dated April 11, 2010

SCALE: NTS	S&ME ENGINEERING • TESTING ENVIRONMENTAL SERVICES	**TDEM TEST LOCATION PLAN** **NCDOT U-2519 CB Fayetteville UST Parcel 21** Fayetteville, North Carolina	FIGURE NO. 4
DRAWN BY: JBC			
CHECKED BY: DDB			
DATE: 9-24-12		JOB NO.: 1054-12-341	





LEGEND

Requested Study Area Limits

REFERENCE:

- Google Earth Aerial Photograph
- Dated April 11, 2010

SCALE:	NTS
DRAWN BY:	JBC
CHECKED BY:	DDB
DATE:	9-24-12

S&ME
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES

TDEM DATA PLOT

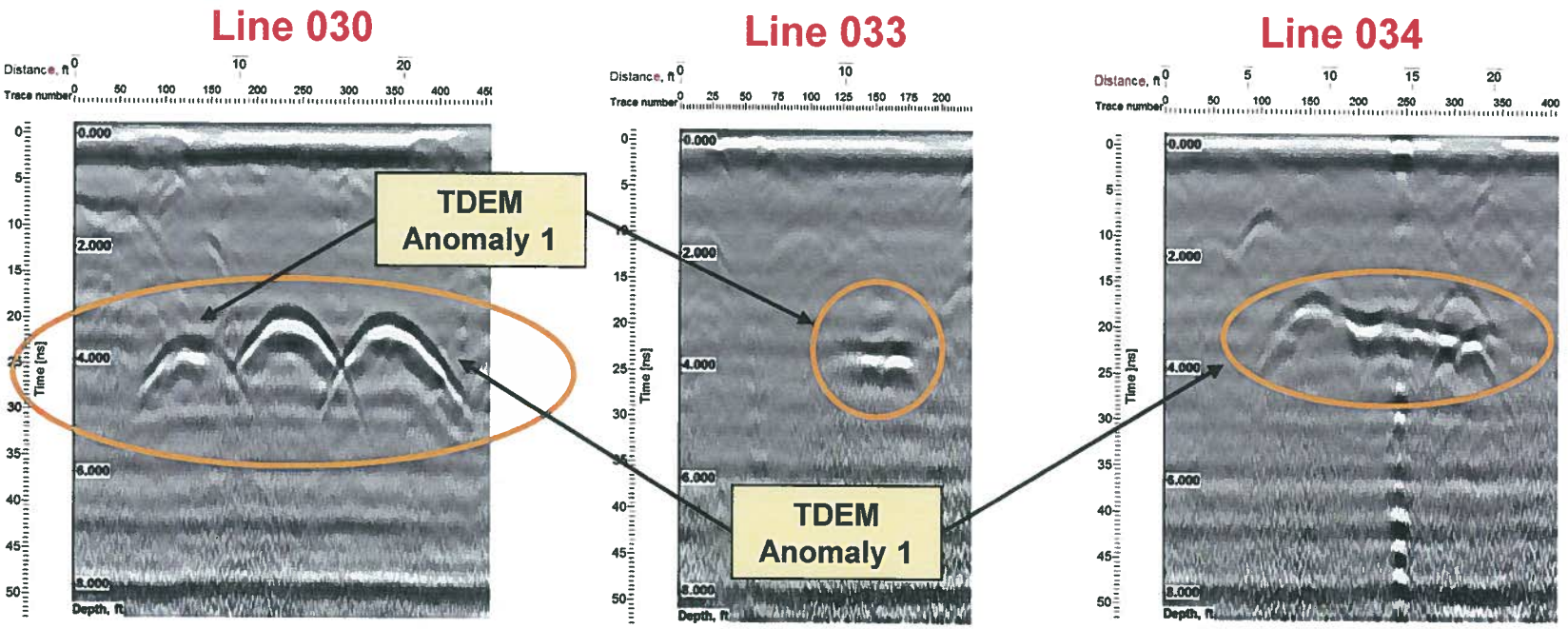
NCDOT U-2519 CB Fayetteville UST Parcel 21

Fayetteville, North Carolina

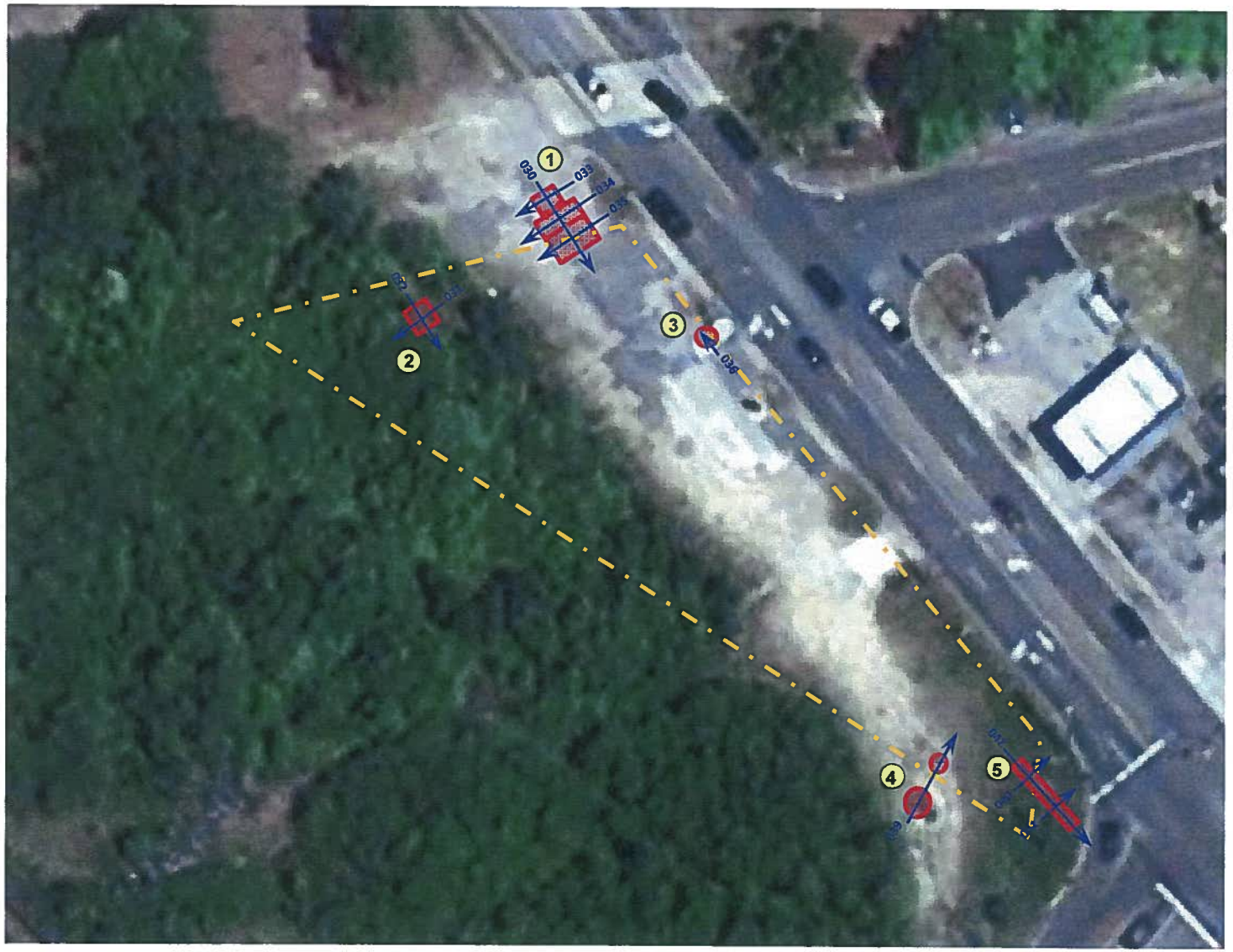
JOB NO.: 1054-12-341

FIGURE NO.

5



SCALE: AS SHOWN	S&ME ENGINEERING • TESTING ENVIRONMENTAL SERVICES	**EXAMPLE GPR PROFILES – LINES 030, 033 AND 034** **NCDOT U-2519 CB Fayetteville UST Parcel 21** Fayetteville, North Carolina	FIGURE NO.
DRAWN BY: JBC			7
CHECKED BY: DDB			
DATE: 9-24-12		JOB NO.: 1054-12-341	



REFERENCE:
- Google Earth Aerial Photograph
- Dated April 11, 2010

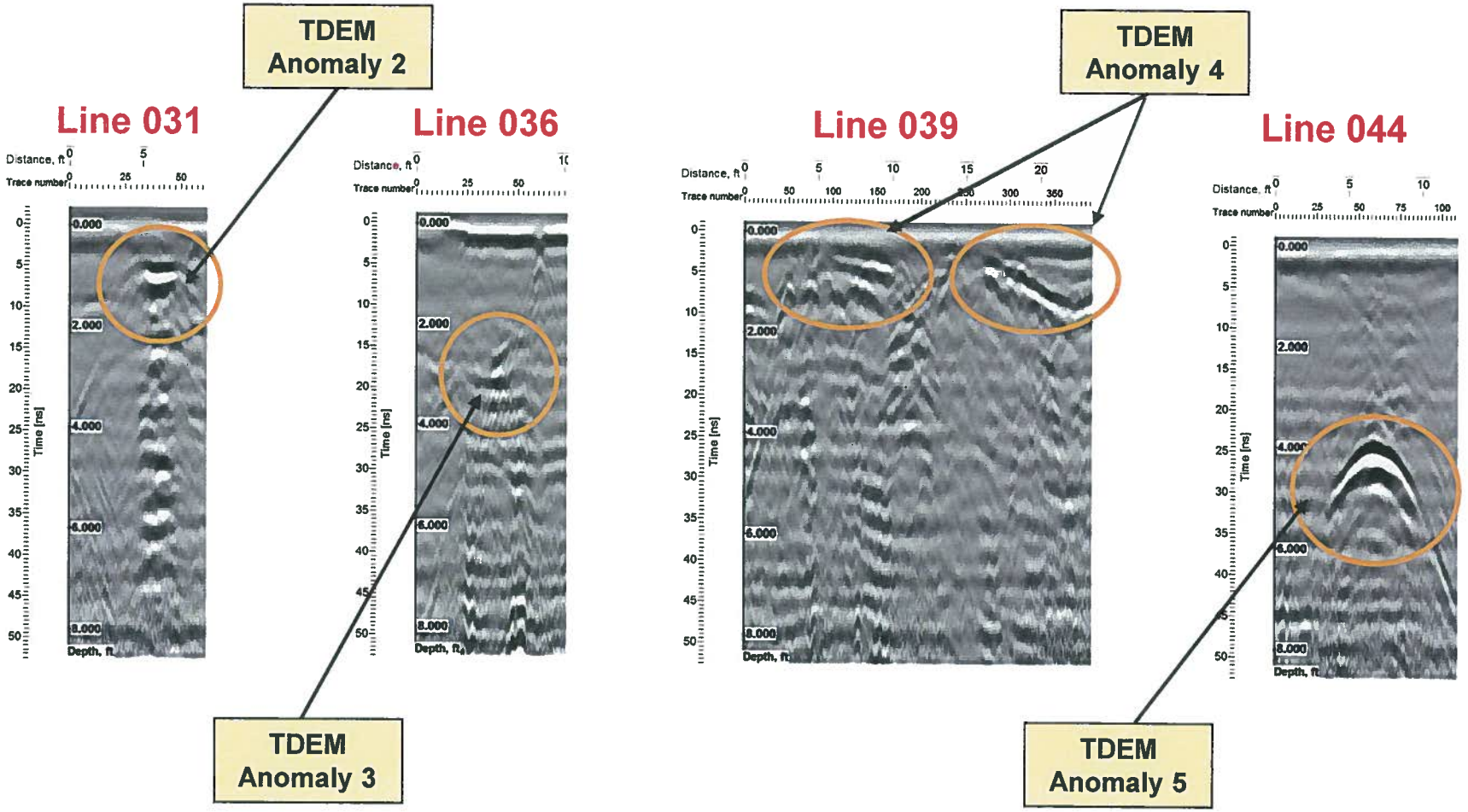
SCALE:	NTS
DRAWN BY:	JBC
CHECKED BY:	DDB
DATE:	9-24-12

S&ME
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES

GPR TEST LOCATION PLAN
NCDOT U-2519 CB Fayetteville UST Parcel 21
Fayetteville, North Carolina

JOB NO.: 1054-12-341

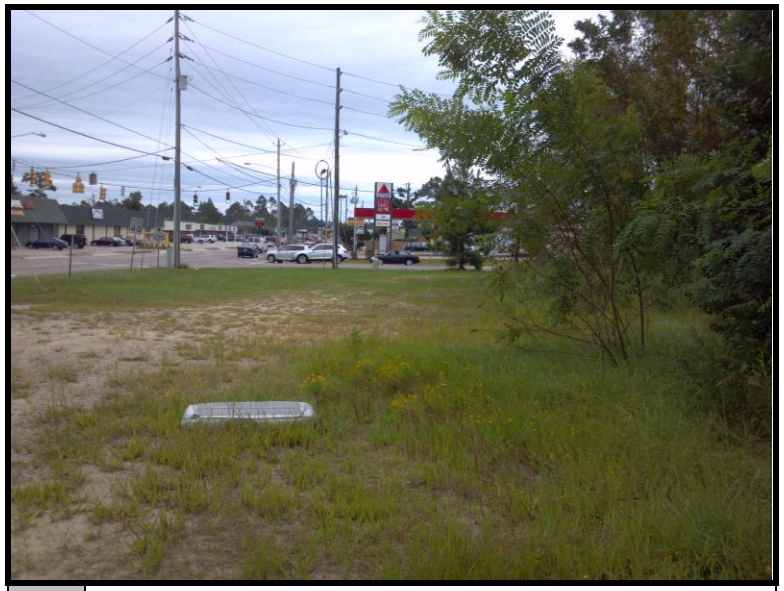
FIGURE NO.
6



SCALE: AS SHOWN	S&ME ENGINEERING • TESTING ENVIRONMENTAL SERVICES	**EXAMPLE GPR PROFILES – LINES 031, 036, 039 AND 044** **NCDOT U-2519 CB Fayetteville UST Parcel 21** Fayetteville, North Carolina	FIGURE NO.
DRAWN BY: JBC			8
CHECKED BY: DDB			
DATE: 9-24-12		JOB NO.: 1054-12-341	

APPENDIX I

Photographic Log



1	Parcel #021 looking south toward Fillyaw Road.

2	Parcel #021 looking southeast across Yadkin Road.

3	Parcel #021 looking northeast toward Yadkin Road.

4	Parcel #021 west of tree line looking north.

S&ME	**NCDOT U2519CB Fayetteville Outer Loop Parcel 021 – Phase I ESA** **Fayetteville, Cumberland County, North Carolina**	S&ME Project No. 1054-12-341
		Taken by: CEE / Date Taken: 10/19-10/25/12

5 Parcel #021 west of tree line; note debris.

6 Suspected UST basin, looking northwest.

7 Boring B-4. The boring was advanced to 45 ft. bgs, but no water was encountered. See text for details.

8 Advancing boring B-4 after drill rods were exchanged.

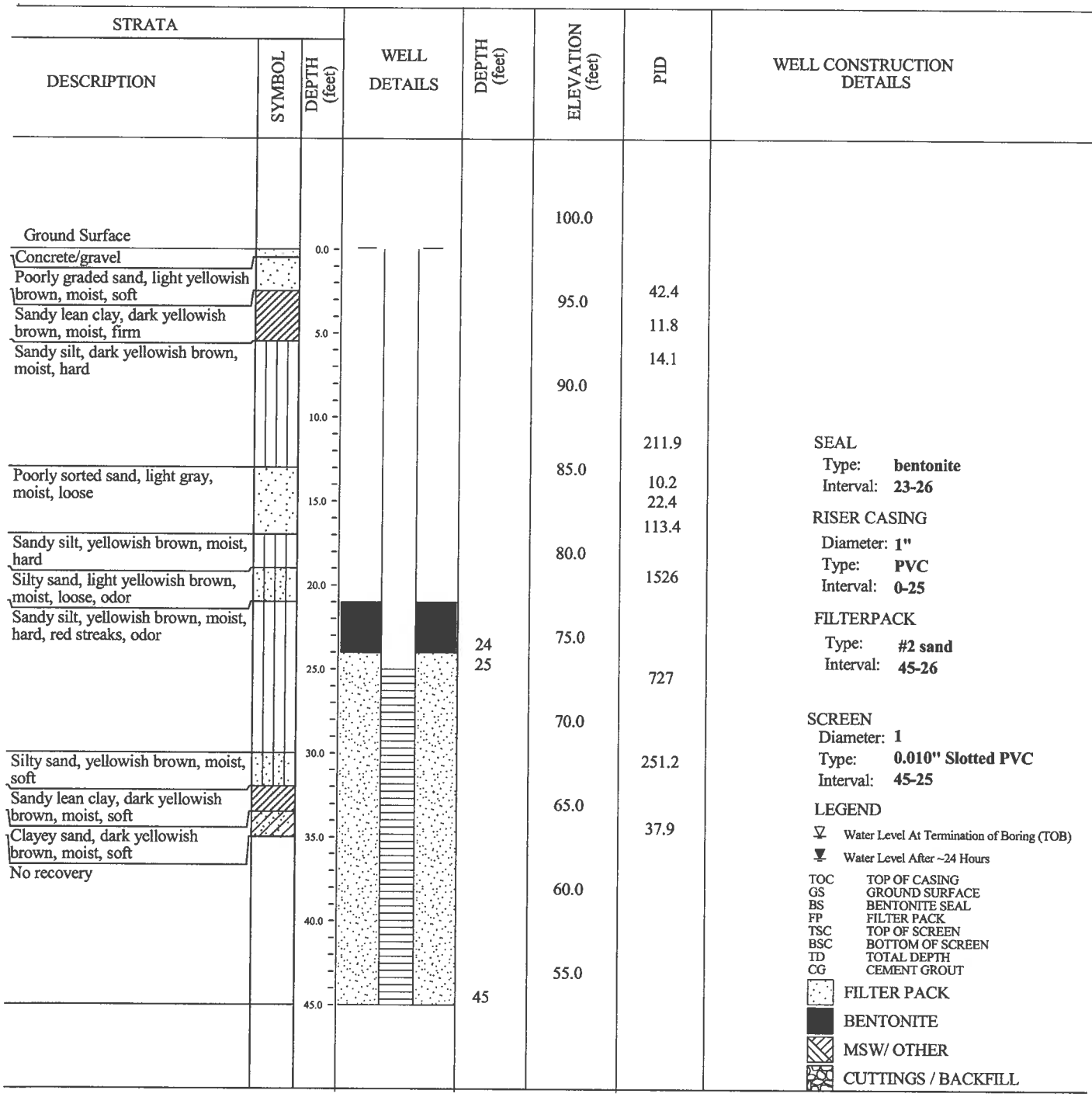
APPENDIX II

Boring Logs

COMPLETION REPORT OF MONITOR WELL NO. Temp Well 1/B-4

PROJECT: **NCDOT U2919CB**
PROJECT NO: **1054-12-341**
PROJECT LOCATION: **Fayetteville, North Carolina**
DRILLING CONTRACTOR: **S&ME**
DRILLING METHOD: **Direct Push**
DRILL RIG: **Geoprobe**

APPROXIMATE ELEVATION: **100**
BORING DEPTH (FT): **45**
DATE: **9/26/2012**
LOGGED BY: **C. Elliott**



NOTES: Groundwater was not encountered in this temporary well. The well was abandoned on 10/1/2012. A sample was collected for laboratory analysis from 16.5' to 17' bgs. (PID reading = 1,526.

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-1
Sampling Personnel: C. Elliott
Date Drilled: 9/25/2012
Depth to Groundwater: Not encountered
Total Depth: 20 ft. bgs

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)			PID Reading (ppm)	Sample No. and Depth	
From	To	Soil Description		Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt			
1.0	2.0	Poorly graded sand (SP), light yellowish brown, moist, soft	6.9		
2.0	3.0				
3.0	4.0	Sandy lean clay (CL), yellowish brown, moist, firm, medium plasticity			
4.0	5.0		7		
5.0	6.0	Sandy silt (ML), reddish brown, moist, hard, non-plastic			
6.0	7.0				
7.0	8.0		8.1		
8.0	9.0				
9.0	10.0		12.3		
10.0	11.0	Silty sand (SM), light reddish bron, moist, loose			
11.0	12.0				
12.0	13.0		12.5		
13.0	14.0	Color change to light gray, slight hydrocarbon odor			
14.0	15.0				
15.0	16.0	Color change to light reddish brown	12.0		
16.0	17.0		521		
17.0	18.0	Silty sand/sandy silt (SM/ML), light gray, moist, hard, reddish streaks, seams			
18.0	19.0				
19.0	20.0	Silty sand, yellowish brown, moist, soft, hydrocarbon odor	892	B-1	19.5-20.0
		Boring terminated at 20 ft bgs			

Notes:
1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-2
Sampling Personnel: C. Elliott
Date Drilled: 10/25/2012
Depth to Groundwater Not encountered
Total Depth: 20 ft. bgs.

Drilling method Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt			
1.0	2.0	Poorly graded sand (SP), light yellowish brown, moist, loose	9.2		
2.0	3.0				
3.0	4.0	Sandy lean clay (CL), yellowish brown, moist, firm, medium plasticity			
4.0	5.0		7.7		
5.0	6.0	Silt (ML), yellowish brown, moist, firm, non-plastic			
6.0	7.0		7.3		
7.0	8.0				
8.0	9.0				
9.0	10.0		1489		
10.0	11.0	Poorly graded sand with silt (SP), gray, moist, soft, strong odor, red streaks			
11.0	12.0		1496		
12.0	13.0				
13.0	14.0				
14.0	15.0		624.7		
15.0	16.0				
16.0	17.0		838.1		
17.0	18.0	Silty sand/sandy silt (SM/ML), light gray, moist, hard, red streaks, seams			
18.0	19.0				
19.0	20.0		1004		
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-3
Sampling Personnel: C. Elliott
Date Drilled: 9/25/2012
Depth to Groundwate Not encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)			PID Reading (ppm)	Sample No. and Depth	
From	To	Soil Description		Sample No.	Depth (Ft-BGS)
0	1.0	Concrete			
1.0	2.0	Silty sand (SM), dark yellowish brown, moist, firm	15.5		
2.0	3.0				
3.0	4.0				
4.0	5.0		18.5		
5.0	6.0	Silty sand/sandy silt (SM/ML), reddish brown, moist, firm			
6.0	7.0		12.7		
7.0	8.0				
8.0	9.0				
9.0	10.0		13.9		
10.0	11.0				
11.0	12.0	Poorly graded sand with silt (SP), medium gray, moist, soft, staining, odor	1280	B-3	11.5
12.0	13.0				
13.0	14.0	~8" clay lens			
14.0	15.0		280.2		
15.0	16.0				
16.0	17.0		777.5		
17.0	18.0	Sandy silt (ML), gray, moist, hard, red streaks			
18.0	19.0	Silty sand/ sandy silt (SM/ML), dark yellowish brown, moist, firm			
19.0	20.0		308.1		
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-5
Sampling Personnel: C. Elliott
Date Drilled: 9/25/2012
Depth to Groundwater: Not encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)			PID Reading (ppm)	Sample No. and Depth	
From	To	Soil Description		Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt, gravel			
1.0	2.0	Poorly graded sand (SP), light yellowish brown, moist, loose	8.4		
2.0	3.0				
3.0	4.0	Sandy silt (ML), yellowish brown, moist, firm			
4.0	5.0		7.7		
5.0	6.0				
6.0	7.0	Hard	6.5		
7.0	8.0	Silty sand (SM), dark reddish brown, moist, firm			
8.0	9.0				
9.0	10.0	Color change to dark yellowish brown	5.0		
10.0	11.0				
11.0	12.0				
12.0	13.0		5.7		
13.0	14.0	Silty sand/sandy silt (SM/ML), yellowish brown, moist, soft			
14.0	15.0	Poorly graded sand (SP), light reddish brown, moist, loose	5.4		
15.0	16.0				
16.0	17.0	Sandy silt (ML), light reddish brown, moist, hard	7.7		
17.0	18.0				
18.0	19.0				
19.0	20.0		9.0	B-5	19.5
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-6
Sampling Personnel: C. Elliott
Date Drilled: 9/25/2012
Depth to Groundwater Not encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)			PID Reading (ppm)	Sample No. and Depth	
From	To	Soil Description		Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt			
1.0	2.0	Poorly graded sand (SP), light yellowish brown, moist, loose	7		
2.0	3.0	Sandy silt/silty sand (ML/SM), yellowish brown, moist, hard			
3.0	4.0	Color change to reddish brown			
4.0	5.0		9.4		
5.0	6.0				
6.0	7.0		8.7		
7.0	8.0				
8.0	9.0				
9.0	10.0		10.3		
10.0	11.0	Poorly graded sand (SP), medium reddish brown, moist, soft, strong odor, staining			
11.0	12.0		12.7	B-6	11.5
12.0	13.0	Color change to dark yellowish brown			
13.0	14.0				
14.0	15.0	Color change to light reddish brown	7.3		
15.0	16.0				
16.0	17.0	Color change to light gray	6.1		
17.0	18.0				
18.0	19.0				
19.0	20.0	Color change to yellowish brown			
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-7
Sampling Personnel: C. Elliott
Date Drilled: 9/25/2012
Depth to Groundwater Not encountered
Total Depth: 20 ft. bgs

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)			PID Reading (ppm)	Sample No. and Depth	
From	To	Soil Description		Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt			
1.0	2.0	Poorly graded sand (SP), yellowish brown, moist, loose	7.0		
2.0	3.0				
3.0	4.0	Sandy silt (ML), yellowish brown, moist, firm			
4.0	5.0	Silt with sand (ML), ressidh brown, moist, hard	9.2		
5.0	6.0	Sandy Silt/silty sand (ML/SM), dark yellowish brown, moist, firm			
6.0	7.0	Sandy silt (ML), reddish brown, moist, hard	12.5		
7.0	8.0				
8.0	9.0				
9.0	10.0		13.7	B-7	9.0
10.0	11.0				
11.0	12.0				
12.0	13.0	Silty sand (SM), reddish brown, moist, soft	11.0		
13.0	14.0				
14.0	15.0	~6" Clay lens	9.6		
15.0	16.0	Color change to light gray			
16.0	17.0	Color change to dark yellowish brown	2.7		
17.0	18.0	Sandy silt/silty sand (ML/SM), light gray, moist, hard, red streaks			
18.0	19.0				
19.0	20.0	Poorly graded sand (SP), yellowish brown, moist, soft	10.8		
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-8
Sampling Personnel: C. Elliott
Date Drilled: 9/26/2012
Depth to Groundwater: Not encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt			
1.0	2.0	Poorly graded sand (SP), yellowish brown, moist, loose	1.8		
2.0	3.0				
3.0	4.0	Sandy silt/ silty sand (ML/SM), yellowish brown, moist, firm			
4.0	5.0		1.7		
5.0	6.0	Poorly graded sand (SP), gray, wet, loose			
6.0	7.0	Sandy silt (ML), reddish brown, moist, hard	1.9		
7.0	8.0				
8.0	9.0				
9.0	10.0		2.5		
10.0	11.0				
11.0	12.0		2.5		
12.0	13.0				
13.0	14.0	Poorly graded sand (SP), reddish brown, moist, soft			
14.0	15.0	Color change to light reddish brown	4.8		
15.0	16.0	Color change to gray, loose			
16.0	17.0		286.9		
17.0	18.0				
18.0	19.0	Sandy silt (ML), yellowish brown, moist, hard, odor			
19.0	20.0		353.7	B-8	19.5
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-9
Sampling Personnel: C. Elliott
Date Drilled: 9/26/2012
Depth to Groundwater: Not encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt			
1.0	2.0	Poorly graded sand (SP), light yellowish brown, moist, loose	1.5		
2.0	3.0				
3.0	4.0	Sandy silt/silty sand (ML/SM), yellowish brown, moist, firm			
4.0	5.0		2.0		
5.0	6.0	Sand lens			
6.0	7.0	Color change to dark yellowish brown	3.0	B-9	7
7.0	8.0				
8.0	9.0				
9.0	10.0		2.2		
10.0	11.0	Silty sand (SM), reddish brown, moist, soft			
11.0	12.0		2.4		
12.0	13.0				
13.0	14.0	Silt (ML), light reddish brown, moist, hard			
14.0	15.0	Silty sand (SM), reddish brown, moist, soft	2.0		
15.0	16.0	Color change to light reddish brown			
16.0	17.0	Silt (ML), reddish brown, moist, hard	2.1		
17.0	18.0	Poorly graded sand (SP), gray, moist, soft			
18.0	19.0	Color change to yellowish brown			
19.0	20.0	Sandy silt (ML), yellowish brown, moist, hard	2.5		
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

BORING LOG

S&ME

Project Name: NCDOT Fayetteville
Job No. 1054-12-341

Boring Number: B-10
Sampling Personnel: J. Waters
Date Drilled: 9/26/2012
Depth to Groundwater: Not encountered
Total Depth: 20 ft. bgs

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt/gravel			
1.0	2.0	Poorly graded sand (SP), light yellowish brown, moist, loose	1.3		
2.0	3.0	Sandy silt/ silty sand (ML/SM), yellowish brown, moist, firm			
3.0	4.0	Silty sand (SM), reddish brown, moist, firm			
4.0	5.0		1.0		
5.0	6.0	Sandy silt (ML), reddish brown, moist, hard			
6.0	7.0		2.0		
7.0	8.0				
8.0	9.0				
9.0	10.0		1.6		
10.0	11.0				
11.0	12.0		1.1		
12.0	13.0				
13.0	14.0	Silty sand (SM), light reddish brown, moist, soft			
14.0	15.0		1.1		
15.0	16.0	Sandy silt/ silty sand (ML/SM), reddish brown, moist, hard	2.1	B-10	16.5
16.0	17.0				
17.0	18.0		1.1		
18.0	19.0	Silty sand (SM), yellowish brown, moist, soft			
19.0	20.0	Color change to reddish brown	1.0		
		Boring terminated at 20 ft bgs			

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

APPENDIX III

Laboratory Analytical Report

SGS ANALYTICAL PERSPECTIVES

Laboratory Report of Analysis

To: Scott Young
S&ME
3006 Hall Waters Drive
Suite 100
Wilmington, NC 28405

Report Number: **31203135**

Client Project: **NCDOT Fayetteville Loop**

Dear Scott Young,

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

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

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

Sincerely,
SGS North America Inc.

Digitally signed by: Michael Page
Date: 2012.10.10 14:30:04 -04'00'

Barbara A. Hager
Project Manager
barbara.hager@sgs.com

Date

Print Date: 10/10/2012

N.C. Certification # 481

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

Laboratory Qualifiers

Report Definitions

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

Qualifier Definitions

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

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

M1	Mis-identified peak

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

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
B-1	31203135001	09/25/2012 11:45	09/28/2012 08:00	Soil-Solid as dry weight
B-2	31203135002	09/25/2012 13:00	09/28/2012 08:00	Soil-Solid as dry weight
B-3	31203135003	09/25/2012 14:00	09/28/2012 08:00	Soil-Solid as dry weight
B-4	31203135004	09/25/2012 14:45	09/28/2012 08:00	Soil-Solid as dry weight
B-5	31203135005	09/25/2012 15:15	09/28/2012 08:00	Soil-Solid as dry weight
B-6	31203135006	09/25/2012 16:00	09/28/2012 08:00	Soil-Solid as dry weight
B-7	31203135007	09/26/2012 11:35	09/28/2012 08:00	Soil-Solid as dry weight
B-8	31203135008	09/26/2012 12:00	09/28/2012 08:00	Soil-Solid as dry weight
B-9	31203135009	09/26/2012 14:15	09/28/2012 08:00	Soil-Solid as dry weight
B-10	31203135010	09/26/2012 15:00	09/28/2012 08:00	Soil-Solid as dry weight

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Case Narrative

B-1

8015 GRO - An MS/MSD was not reported with batch VGC2164 as the parent sample required additionall dilutions.

8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

B-10

8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

B-2

8015 GRO - An MS/MSD was not reported with batch VGC2164 as the parent sample required additionall dilutions.

8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

B-3

8015 GRO - An MS/MSD was not reported with batch VGC2164 as the parent sample required additionall dilutions.

8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

B-4

8015 GRO - An MS/MSD was not reported with batch VGC2164 as the parent sample required additionall dilutions.

8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

B-5

8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

B-6

8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

B-7

8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

B-8

8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

B-9

8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

LCSD-S for HBN 30057 [VXX/4093

8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

LCSD-S for HBN 30087 [VXX/4097

8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com

Member of the SGS Group (SGS SA)

Case Narrative

LCSD-S for HBN 30202 [VXX/4102
8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

LCS-S for HBN 30057 [VXX/4093]
8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

LCS-S for HBN 30087 [VXX/4097]
8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

LCS-S for HBN 30202 [VXX/4102]
8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

MB-S for HBN 30057 [VXX/4093]
8260 - An MS/MSD is not reported with batch VMS2611 due to an autosampler failure.

MB-S for HBN 30087 [VXX/4097]
8260 - The method blank associated with batch VMS2606 has reported 'J' concentrations for Methylene Chloride.

MB-S for HBN 30202 [VXX/4102]
8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

SS-1(92865DUP)
8260 - A batch MS was not reported with batch VMS2615 due to an autosampler error.

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Detectable Results Summary

Client Sample ID: **B-1**
Lab Sample ID: 31203135001-F

SW-846 8015C DRO
SW-846 8015C GRO
SW-846 8260B

Parameter	Result	Units	
Diesel Range Organics (DRO)	14400	mg/kg	
Gasoline Range Organics (GRO)	1180	mg/kg	
1,2,4-Trimethylbenzene	96500	ug/Kg	
1,3,5-Trimethylbenzene	41800	ug/Kg	
4-Isopropyltoluene	26400	ug/Kg	
Ethyl Benzene	1560	ug/Kg	J
Isopropylbenzene (Cumene)	2880	ug/Kg	
Methylene chloride	534	ug/Kg	J
Naphthalene	20000	ug/Kg	
Xylene (total)	19500	ug/Kg	
m,p-Xylene	11500	ug/Kg	
n-Propylbenzene	6630	ug/Kg	
o-Xylene	8010	ug/Kg	
tert-Butylbenzene	1270	ug/Kg	J

Client Sample ID: **B-2**
Lab Sample ID: 31203135002-F

SW-846 8015C DRO
SW-846 8015C GRO
SW-846 8260B

Parameter	Result	Units	
Diesel Range Organics (DRO)	10900	mg/kg	
Gasoline Range Organics (GRO)	420	mg/kg	
1,2,4-Trimethylbenzene	50000	ug/Kg	
1,3,5-Trimethylbenzene	19200	ug/Kg	
4-Isopropyltoluene	11900	ug/Kg	
Ethyl Benzene	996	ug/Kg	J
Isopropylbenzene (Cumene)	1570	ug/Kg	J
Methylene chloride	664	ug/Kg	J
Naphthalene	32400	ug/Kg	
Xylene (total)	8200	ug/Kg	
m,p-Xylene	7800	ug/Kg	
n-Propylbenzene	3580	ug/Kg	
o-Xylene	403	ug/Kg	J
tert-Butylbenzene	617	ug/Kg	J

Client Sample ID: **B-3**
Lab Sample ID: 31203135003-F

SW-846 8015C DRO
SW-846 8015C GRO
SW-846 8260B

Parameter	Result	Units	
Diesel Range Organics (DRO)	9730	mg/kg	
Gasoline Range Organics (GRO)	710	mg/kg	
1,2,4-Trimethylbenzene	44300	ug/Kg	
1,3,5-Trimethylbenzene	17800	ug/Kg	
4-Isopropyltoluene	13600	ug/Kg	
Ethyl Benzene	402	ug/Kg	J
Isopropylbenzene (Cumene)	909	ug/Kg	J
Methylene chloride	629	ug/Kg	J
Naphthalene	31600	ug/Kg	
Xylene (total)	3020	ug/Kg	J
m,p-Xylene	2550	ug/Kg	J
n-Propylbenzene	2570	ug/Kg	
o-Xylene	472	ug/Kg	J
tert-Butylbenzene	594	ug/Kg	J

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Detectable Results Summary

Client Sample ID: **B-4**
Lab Sample ID: 31203135004-F
SW-846 8015C DRO
SW-846 8015C GRO
SW-846 8260B

Parameter	Result	Units	
Diesel Range Organics (DRO)	3920	mg/kg	
Gasoline Range Organics (GRO)	763	mg/kg	
1,2,4-Trimethylbenzene	4620	ug/Kg	
1,3,5-Trimethylbenzene	2220	ug/Kg	
4-Isopropyltoluene	1860	ug/Kg	
Ethyl Benzene	60.4	ug/Kg	J
Isopropylbenzene (Cumene)	142	ug/Kg	J
Methylene chloride	47.7	ug/Kg	J
Naphthalene	1670	ug/Kg	
Xylene (total)	633	ug/Kg	
m,p-Xylene	369	ug/Kg	
n-Propylbenzene	353	ug/Kg	
o-Xylene	264	ug/Kg	
tert-Butylbenzene	74.8	ug/Kg	J

Client Sample ID: **B-6**
Lab Sample ID: 31203135006-F
SW-846 8015C DRO
SW-846 8260B

Parameter	Result	Units	
Diesel Range Organics (DRO)	90.3	mg/kg	
1,2,4-Trimethylbenzene	1.94	ug/Kg	J
2-Butanone	47.3	ug/Kg	
Acetone	49.3	ug/Kg	
Ethyl Benzene	3.48	ug/Kg	J
Toluene	1.12	ug/Kg	J
Xylene (total)	28.1	ug/Kg	
m,p-Xylene	17.8	ug/Kg	
o-Xylene	10.2	ug/Kg	

Client Sample ID: **B-7**
Lab Sample ID: 31203135007-A
SW-846 8260B

Parameter	Result	Units	
Acetone	21.9	ug/Kg	J

Client Sample ID: **B-8**
Lab Sample ID: 31203135008-F
SW-846 8015C DRO
SW-846 8015C GRO
SW-846 8260B

Parameter	Result	Units	
Diesel Range Organics (DRO)	1230	mg/kg	
Gasoline Range Organics (GRO)	62.2	mg/kg	
1,2,4-Trimethylbenzene	125	ug/Kg	
1,3,5-Trimethylbenzene	182	ug/Kg	
4-Isopropyltoluene	76.4	ug/Kg	
Naphthalene	501	ug/Kg	
Xylene (total)	14.4	ug/Kg	J
m,p-Xylene	14.4	ug/Kg	J
n-Propylbenzene	8.02	ug/Kg	J

Client Sample ID: **B-9**
Lab Sample ID: 31203135009-A
SW-846 8260B

Parameter	Result	Units	
2-Butanone	4.27	ug/Kg	J
Acetone	51.6	ug/Kg	

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Detectable Results Summary

Client Sample ID: **B-10**
Lab Sample ID: 31203135010-F

	Parameter	Result	Units	
SW-846 8015C DRO	Diesel Range Organics (DRO)	12.2	mg/kg	
SW-846 8260B	2-Butanone	5.92	ug/Kg	J
	Acetone	22.8	ug/Kg	J
	Carbon disulfide	1.55	ug/Kg	J

Quality Control Samples

Client Sample ID: **MB-S for HBN 30087 [VXX/4097]**
Lab Sample ID: 92947

	Parameter	Result	Units	
SW-846 8260B	Methylene chloride	23.0	ug/Kg	J

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Results of **B-1**

Client Sample ID: **B-1**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135001-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 11:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	214	2050	ug/Kg	2000	10/3/2012 18:46
1,1,1-Trichloroethane	ND	U	253	2050	ug/Kg	2000	10/3/2012 18:46
1,1,2,2-Tetrachloroethane	ND	U	320	2050	ug/Kg	2000	10/3/2012 18:46
1,1,2-Trichloroethane	ND	U	259	2050	ug/Kg	2000	10/3/2012 18:46
1,1-Dichloroethane	ND	U	339	2050	ug/Kg	2000	10/3/2012 18:46
1,1-Dichloroethene	ND	U	435	2050	ug/Kg	2000	10/3/2012 18:46
1,1-Dichloropropene	ND	U	177	2050	ug/Kg	2000	10/3/2012 18:46
1,2,3-Trichlorobenzene	ND	U	226	2050	ug/Kg	2000	10/3/2012 18:46
1,2,3-Trichloropropane	ND	U	435	2050	ug/Kg	2000	10/3/2012 18:46
1,2,4-Trichlorobenzene	ND	U	188	2050	ug/Kg	2000	10/3/2012 18:46
1,2,4-Trimethylbenzene	**96500**		197	2050	ug/Kg	2000	10/3/2012 18:46
1,2-Dibromo-3-chloropropane	ND	U	1540	10300	ug/Kg	2000	10/3/2012 18:46
1,2-Dibromoethane	ND	U	246	2050	ug/Kg	2000	10/3/2012 18:46
1,2-Dichlorobenzene	ND	U	281	2050	ug/Kg	2000	10/3/2012 18:46
1,2-Dichloroethane	ND	U	343	2050	ug/Kg	2000	10/3/2012 18:46
1,2-Dichloropropane	ND	U	335	2050	ug/Kg	2000	10/3/2012 18:46
1,3,5-Trimethylbenzene	**41800**		232	2050	ug/Kg	2000	10/3/2012 18:46
1,3-Dichlorobenzene	ND	U	212	2050	ug/Kg	2000	10/3/2012 18:46
1,3-Dichloropropane	ND	U	267	2050	ug/Kg	2000	10/3/2012 18:46
1,4-Dichlorobenzene	ND	U	267	2050	ug/Kg	2000	10/3/2012 18:46
2,2-Dichloropropane	ND	U	807	2050	ug/Kg	2000	10/3/2012 18:46
2-Butanone	ND	U	1490	51400	ug/Kg	2000	10/3/2012 18:46
2-Chlorotoluene	ND	U	232	2050	ug/Kg	2000	10/3/2012 18:46
2-Hexanone	ND	U	1500	10300	ug/Kg	2000	10/3/2012 18:46
4-Chlorotoluene	ND	U	257	2050	ug/Kg	2000	10/3/2012 18:46
4-Isopropyltoluene	**26400**		158	2050	ug/Kg	2000	10/3/2012 18:46
4-Methyl-2-pentanone	ND	U	1150	10300	ug/Kg	2000	10/3/2012 18:46
Acetone	ND	U	1770	51400	ug/Kg	2000	10/3/2012 18:46
Benzene	ND	U	232	2050	ug/Kg	2000	10/3/2012 18:46
Bromobenzene	ND	U	226	2050	ug/Kg	2000	10/3/2012 18:46
Bromochloromethane	ND	U	433	2050	ug/Kg	2000	10/3/2012 18:46
Bromodichloromethane	ND	U	226	2050	ug/Kg	2000	10/3/2012 18:46
Bromoform	ND	U	200	2050	ug/Kg	2000	10/3/2012 18:46
Bromomethane	ND	U	487	2050	ug/Kg	2000	10/3/2012 18:46
n-Butylbenzene	ND	U	158	2050	ug/Kg	2000	10/3/2012 18:46
Carbon disulfide	ND	U	218	2050	ug/Kg	2000	10/3/2012 18:46
Carbon tetrachloride	ND	U	207	2050	ug/Kg	2000	10/3/2012 18:46
Chlorobenzene	ND	U	238	2050	ug/Kg	2000	10/3/2012 18:46
Chloroethane	ND	U	639	2050	ug/Kg	2000	10/3/2012 18:46
Chloroform	ND	U	286	2050	ug/Kg	2000	10/3/2012 18:46
Chloromethane	ND	U	920	2050	ug/Kg	2000	10/3/2012 18:46
Dibromochloromethane	ND	U	275	2050	ug/Kg	2000	10/3/2012 18:46
Dibromomethane	ND	U	345	2050	ug/Kg	2000	10/3/2012 18:46

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-1**

Client Sample ID: **B-1**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135001-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 11:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	351	10300	ug/Kg	2000	10/3/2012 18:46
cis-1,3-Dichloropropene	ND	U	158	2050	ug/Kg	2000	10/3/2012 18:46
trans-1,3-Dichloropropene	ND	U	177	2050	ug/Kg	2000	10/3/2012 18:46
Diisopropyl Ether	ND	U	604	2050	ug/Kg	2000	10/3/2012 18:46
Ethyl Benzene	**1560**	J	180	2050	ug/Kg	2000	10/3/2012 18:46
Hexachlorobutadiene	ND	U	163	2050	ug/Kg	2000	10/3/2012 18:46
Isopropylbenzene (Cumene)	**2880**		178	2050	ug/Kg	2000	10/3/2012 18:46
Methyl iodide	ND	U	236	2050	ug/Kg	2000	10/3/2012 18:46
Methylene chloride	**534**	J	312	10300	ug/Kg	2000	10/3/2012 18:46
Naphthalene	**20000**		176	2050	ug/Kg	2000	10/3/2012 18:46
Styrene	ND	U	210	2050	ug/Kg	2000	10/3/2012 18:46
Tetrachloroethene	ND	U	318	2050	ug/Kg	2000	10/3/2012 18:46
Toluene	ND	U	273	2050	ug/Kg	2000	10/3/2012 18:46
Trichloroethene	ND	U	257	2050	ug/Kg	2000	10/3/2012 18:46
Trichlorofluoromethane	ND	U	281	2050	ug/Kg	2000	10/3/2012 18:46
Vinyl chloride	ND	U	255	2050	ug/Kg	2000	10/3/2012 18:46
Xylene (total)	**19500**		374	4110	ug/Kg	2000	10/3/2012 18:46
cis-1,2-Dichloroethene	ND	U	279	2050	ug/Kg	2000	10/3/2012 18:46
m,p-Xylene	**11500**		374	4110	ug/Kg	2000	10/3/2012 18:46
n-Propylbenzene	**6630**		232	2050	ug/Kg	2000	10/3/2012 18:46
o-Xylene	**8010**		180	2050	ug/Kg	2000	10/3/2012 18:46
sec-Butylbenzene	ND	U	230	2050	ug/Kg	2000	10/3/2012 18:46
tert-Butyl methyl ether (MTBE)	ND	U	296	2050	ug/Kg	2000	10/3/2012 18:46
tert-Butylbenzene	**1270**	J	176	2050	ug/Kg	2000	10/3/2012 18:46
trans-1,2-Dichloroethene	ND	U	458	2050	ug/Kg	2000	10/3/2012 18:46
trans-1,4-Dichloro-2-butene	ND	U	850	10300	ug/Kg	2000	10/3/2012 18:46
Surrogates							
1,2-Dichloroethane-d4	104			55.0-173	%	2000	10/3/2012 18:46
4-Bromofluorobenzene	111			23.0-141	%	2000	10/3/2012 18:46
Toluene d8	103			57.0-134	%	2000	10/3/2012 18:46

Batch Information

Analytical Batch: **VMS2606**
Analytical Method: **SW-846 8260B**
Instrument: **MSD4**
Analyst: **DVO**

Prep Batch: **VXX4097**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/01/2012 10:36**
Prep Initial Wt./Vol.: **5.47 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-1**

Client Sample ID: **B-1**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135001-E
Lab Project ID: 31203135

Collection Date: 09/25/2012 11:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**1180**		182	182	mg/kg	40	10/8/2012 15:27
Surrogates							
4-Bromofluorobenzene	111			70.0-130	%	40	10/8/2012 15:27

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:36**
Prep Initial Wt./Vol.: **4.95 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-1**

Client Sample ID: **B-1**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135001-F
Lab Project ID: 31203135

Collection Date: 09/25/2012 11:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**14400**		686	686	mg/kg	100	10/5/2012 19:41
Surrogates							
o-Terphenyl	NA	D		40.0-140	%	100	10/5/2012 19:41

Batch Information

Analytical Batch: **XGC2585**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3129**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/01/2012 10:18**
Prep Initial Wt./Vol.: **32.76 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-2**

Client Sample ID: **B-2**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135002-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 13:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 87.10

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	247	2370	ug/Kg	2500	10/3/2012 19:35
1,1,1-Trichloroethane	ND	U	292	2370	ug/Kg	2500	10/3/2012 19:35
1,1,2,2-Tetrachloroethane	ND	U	370	2370	ug/Kg	2500	10/3/2012 19:35
1,1,2-Trichloroethane	ND	U	299	2370	ug/Kg	2500	10/3/2012 19:35
1,1-Dichloroethane	ND	U	391	2370	ug/Kg	2500	10/3/2012 19:35
1,1-Dichloroethene	ND	U	503	2370	ug/Kg	2500	10/3/2012 19:35
1,1-Dichloropropene	ND	U	205	2370	ug/Kg	2500	10/3/2012 19:35
1,2,3-Trichlorobenzene	ND	U	261	2370	ug/Kg	2500	10/3/2012 19:35
1,2,3-Trichloropropane	ND	U	503	2370	ug/Kg	2500	10/3/2012 19:35
1,2,4-Trichlorobenzene	ND	U	216	2370	ug/Kg	2500	10/3/2012 19:35
1,2,4-Trimethylbenzene	**50000**		228	2370	ug/Kg	2500	10/3/2012 19:35
1,2-Dibromo-3-chloropropane	ND	U	1770	11900	ug/Kg	2500	10/3/2012 19:35
1,2-Dibromoethane	ND	U	285	2370	ug/Kg	2500	10/3/2012 19:35
1,2-Dichlorobenzene	ND	U	325	2370	ug/Kg	2500	10/3/2012 19:35
1,2-Dichloroethane	ND	U	396	2370	ug/Kg	2500	10/3/2012 19:35
1,2-Dichloropropane	ND	U	387	2370	ug/Kg	2500	10/3/2012 19:35
1,3,5-Trimethylbenzene	**19200**		268	2370	ug/Kg	2500	10/3/2012 19:35
1,3-Dichlorobenzene	ND	U	244	2370	ug/Kg	2500	10/3/2012 19:35
1,3-Dichloropropane	ND	U	308	2370	ug/Kg	2500	10/3/2012 19:35
1,4-Dichlorobenzene	ND	U	308	2370	ug/Kg	2500	10/3/2012 19:35
2,2-Dichloropropane	ND	U	932	2370	ug/Kg	2500	10/3/2012 19:35
2-Butanone	ND	U	1710	59300	ug/Kg	2500	10/3/2012 19:35
2-Chlorotoluene	ND	U	268	2370	ug/Kg	2500	10/3/2012 19:35
2-Hexanone	ND	U	1730	11900	ug/Kg	2500	10/3/2012 19:35
4-Chlorotoluene	ND	U	296	2370	ug/Kg	2500	10/3/2012 19:35
4-Isopropyltoluene	**11900**		182	2370	ug/Kg	2500	10/3/2012 19:35
4-Methyl-2-pentanone	ND	U	1320	11900	ug/Kg	2500	10/3/2012 19:35
Acetone	ND	U	2050	59300	ug/Kg	2500	10/3/2012 19:35
Benzene	ND	U	268	2370	ug/Kg	2500	10/3/2012 19:35
Bromobenzene	ND	U	261	2370	ug/Kg	2500	10/3/2012 19:35
Bromochloromethane	ND	U	500	2370	ug/Kg	2500	10/3/2012 19:35
Bromodichloromethane	ND	U	261	2370	ug/Kg	2500	10/3/2012 19:35
Bromoform	ND	U	231	2370	ug/Kg	2500	10/3/2012 19:35
Bromomethane	ND	U	562	2370	ug/Kg	2500	10/3/2012 19:35
n-Butylbenzene	ND	U	182	2370	ug/Kg	2500	10/3/2012 19:35
Carbon disulfide	ND	U	251	2370	ug/Kg	2500	10/3/2012 19:35
Carbon tetrachloride	ND	U	240	2370	ug/Kg	2500	10/3/2012 19:35
Chlorobenzene	ND	U	275	2370	ug/Kg	2500	10/3/2012 19:35
Chloroethane	ND	U	737	2370	ug/Kg	2500	10/3/2012 19:35
Chloroform	ND	U	330	2370	ug/Kg	2500	10/3/2012 19:35
Chloromethane	ND	U	1060	2370	ug/Kg	2500	10/3/2012 19:35
Dibromochloromethane	ND	U	318	2370	ug/Kg	2500	10/3/2012 19:35
Dibromomethane	ND	U	398	2370	ug/Kg	2500	10/3/2012 19:35

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-2**

Client Sample ID: **B-2**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135002-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 13:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 87.10

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	405	11900	ug/Kg	2500	10/3/2012 19:35
cis-1,3-Dichloropropene	ND	U	182	2370	ug/Kg	2500	10/3/2012 19:35
trans-1,3-Dichloropropene	ND	U	204	2370	ug/Kg	2500	10/3/2012 19:35
Diisopropyl Ether	ND	U	697	2370	ug/Kg	2500	10/3/2012 19:35
Ethyl Benzene	**996**	J	208	2370	ug/Kg	2500	10/3/2012 19:35
Hexachlorobutadiene	ND	U	188	2370	ug/Kg	2500	10/3/2012 19:35
Isopropylbenzene (Cumene)	**1570**	J	206	2370	ug/Kg	2500	10/3/2012 19:35
Methyl iodide	ND	U	273	2370	ug/Kg	2500	10/3/2012 19:35
Methylene chloride	**664**	J	360	11900	ug/Kg	2500	10/3/2012 19:35
Naphthalene	**32400**		203	2370	ug/Kg	2500	10/3/2012 19:35
Styrene	ND	U	242	2370	ug/Kg	2500	10/3/2012 19:35
Tetrachloroethene	ND	U	368	2370	ug/Kg	2500	10/3/2012 19:35
Toluene	ND	U	315	2370	ug/Kg	2500	10/3/2012 19:35
Trichloroethene	ND	U	296	2370	ug/Kg	2500	10/3/2012 19:35
Trichlorofluoromethane	ND	U	325	2370	ug/Kg	2500	10/3/2012 19:35
Vinyl chloride	ND	U	294	2370	ug/Kg	2500	10/3/2012 19:35
Xylene (total)	**8200**		432	4740	ug/Kg	2500	10/3/2012 19:35
cis-1,2-Dichloroethene	ND	U	322	2370	ug/Kg	2500	10/3/2012 19:35
m,p-Xylene	**7800**		432	4740	ug/Kg	2500	10/3/2012 19:35
n-Propylbenzene	**3580**		268	2370	ug/Kg	2500	10/3/2012 19:35
o-Xylene	**403**	J	207	2370	ug/Kg	2500	10/3/2012 19:35
sec-Butylbenzene	ND	U	266	2370	ug/Kg	2500	10/3/2012 19:35
tert-Butyl methyl ether (MTBE)	ND	U	341	2370	ug/Kg	2500	10/3/2012 19:35
tert-Butylbenzene	**617**	J	203	2370	ug/Kg	2500	10/3/2012 19:35
trans-1,2-Dichloroethene	ND	U	529	2370	ug/Kg	2500	10/3/2012 19:35
trans-1,4-Dichloro-2-butene	ND	U	982	11900	ug/Kg	2500	10/3/2012 19:35
Surrogates							
1,2-Dichloroethane-d4	104			55.0-173	%	2500	10/3/2012 19:35
4-Bromofluorobenzene	105			23.0-141	%	2500	10/3/2012 19:35
Toluene d8	104			57.0-134	%	2500	10/3/2012 19:35

Batch Information

Analytical Batch: **VMS2606**
Analytical Method: **SW-846 8260B**
Instrument: **MSD4**
Analyst: **DVO**

Prep Batch: **VXX4097**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/01/2012 10:48**
Prep Initial Wt./Vol.: **6.05 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-2**

Client Sample ID: **B-2**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135002-D
Lab Project ID: 31203135

Collection Date: 09/25/2012 13:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 87.10

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**420**		75.9	75.9	mg/kg	20	10/5/2012 17:03
Surrogates							
4-Bromofluorobenzene	113			70.0-130	%	20	10/5/2012 17:03

Batch Information

Analytical Batch: **VGC2168**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4098**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:48**
Prep Initial Wt./Vol.: **6.05 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-2**

Client Sample ID: **B-2**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135002-F
Lab Project ID: 31203135

Collection Date: 09/25/2012 13:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 87.10

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**10900**		709	709	mg/kg	100	10/4/2012 20:26
Surrogates							
o-Terphenyl	NA	D		40.0-140	%	100	10/4/2012 20:26

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3129**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/01/2012 10:18**
Prep Initial Wt./Vol.: **32.37 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-3**

Client Sample ID: **B-3**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135003-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	182	1750	ug/Kg	2000	10/3/2012 19:10
1,1,1-Trichloroethane	ND	U	215	1750	ug/Kg	2000	10/3/2012 19:10
1,1,2,2-Tetrachloroethane	ND	U	273	1750	ug/Kg	2000	10/3/2012 19:10
1,1,2-Trichloroethane	ND	U	220	1750	ug/Kg	2000	10/3/2012 19:10
1,1-Dichloroethane	ND	U	288	1750	ug/Kg	2000	10/3/2012 19:10
1,1-Dichloroethene	ND	U	370	1750	ug/Kg	2000	10/3/2012 19:10
1,1-Dichloropropene	ND	U	151	1750	ug/Kg	2000	10/3/2012 19:10
1,2,3-Trichlorobenzene	ND	U	192	1750	ug/Kg	2000	10/3/2012 19:10
1,2,3-Trichloropropane	ND	U	370	1750	ug/Kg	2000	10/3/2012 19:10
1,2,4-Trichlorobenzene	ND	U	160	1750	ug/Kg	2000	10/3/2012 19:10
1,2,4-Trimethylbenzene	**44300**		168	1750	ug/Kg	2000	10/3/2012 19:10
1,2-Dibromo-3-chloropropane	ND	U	1310	8740	ug/Kg	2000	10/3/2012 19:10
1,2-Dibromoethane	ND	U	210	1750	ug/Kg	2000	10/3/2012 19:10
1,2-Dichlorobenzene	ND	U	239	1750	ug/Kg	2000	10/3/2012 19:10
1,2-Dichloroethane	ND	U	292	1750	ug/Kg	2000	10/3/2012 19:10
1,2-Dichloropropane	ND	U	285	1750	ug/Kg	2000	10/3/2012 19:10
1,3,5-Trimethylbenzene	**17800**		197	1750	ug/Kg	2000	10/3/2012 19:10
1,3-Dichlorobenzene	ND	U	180	1750	ug/Kg	2000	10/3/2012 19:10
1,3-Dichloropropane	ND	U	227	1750	ug/Kg	2000	10/3/2012 19:10
1,4-Dichlorobenzene	ND	U	227	1750	ug/Kg	2000	10/3/2012 19:10
2,2-Dichloropropane	ND	U	687	1750	ug/Kg	2000	10/3/2012 19:10
2-Butanone	ND	U	1260	43700	ug/Kg	2000	10/3/2012 19:10
2-Chlorotoluene	ND	U	197	1750	ug/Kg	2000	10/3/2012 19:10
2-Hexanone	ND	U	1270	8740	ug/Kg	2000	10/3/2012 19:10
4-Chlorotoluene	ND	U	218	1750	ug/Kg	2000	10/3/2012 19:10
4-Isopropyltoluene	**13600**		134	1750	ug/Kg	2000	10/3/2012 19:10
4-Methyl-2-pentanone	ND	U	975	8740	ug/Kg	2000	10/3/2012 19:10
Acetone	ND	U	1510	43700	ug/Kg	2000	10/3/2012 19:10
Benzene	ND	U	197	1750	ug/Kg	2000	10/3/2012 19:10
Bromobenzene	ND	U	192	1750	ug/Kg	2000	10/3/2012 19:10
Bromochloromethane	ND	U	369	1750	ug/Kg	2000	10/3/2012 19:10
Bromodichloromethane	ND	U	192	1750	ug/Kg	2000	10/3/2012 19:10
Bromoform	ND	U	170	1750	ug/Kg	2000	10/3/2012 19:10
Bromomethane	ND	U	414	1750	ug/Kg	2000	10/3/2012 19:10
n-Butylbenzene	ND	U	134	1750	ug/Kg	2000	10/3/2012 19:10
Carbon disulfide	ND	U	185	1750	ug/Kg	2000	10/3/2012 19:10
Carbon tetrachloride	ND	U	176	1750	ug/Kg	2000	10/3/2012 19:10
Chlorobenzene	ND	U	203	1750	ug/Kg	2000	10/3/2012 19:10
Chloroethane	ND	U	543	1750	ug/Kg	2000	10/3/2012 19:10
Chloroform	ND	U	243	1750	ug/Kg	2000	10/3/2012 19:10
Chloromethane	ND	U	783	1750	ug/Kg	2000	10/3/2012 19:10
Dibromochloromethane	ND	U	234	1750	ug/Kg	2000	10/3/2012 19:10
Dibromomethane	ND	U	294	1750	ug/Kg	2000	10/3/2012 19:10

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-3**

Client Sample ID: **B-3**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135003-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	299	8740	ug/Kg	2000	10/3/2012 19:10
cis-1,3-Dichloropropene	ND	U	134	1750	ug/Kg	2000	10/3/2012 19:10
trans-1,3-Dichloropropene	ND	U	151	1750	ug/Kg	2000	10/3/2012 19:10
Diisopropyl Ether	ND	U	514	1750	ug/Kg	2000	10/3/2012 19:10
Ethyl Benzene	**402**	J	153	1750	ug/Kg	2000	10/3/2012 19:10
Hexachlorobutadiene	ND	U	138	1750	ug/Kg	2000	10/3/2012 19:10
Isopropylbenzene (Cumene)	**909**	J	152	1750	ug/Kg	2000	10/3/2012 19:10
Methyl iodide	ND	U	201	1750	ug/Kg	2000	10/3/2012 19:10
Methylene chloride	**629**	J	266	8740	ug/Kg	2000	10/3/2012 19:10
Naphthalene	**31600**		149	1750	ug/Kg	2000	10/3/2012 19:10
Styrene	ND	U	178	1750	ug/Kg	2000	10/3/2012 19:10
Tetrachloroethene	ND	U	271	1750	ug/Kg	2000	10/3/2012 19:10
Toluene	ND	U	232	1750	ug/Kg	2000	10/3/2012 19:10
Trichloroethene	ND	U	218	1750	ug/Kg	2000	10/3/2012 19:10
Trichlorofluoromethane	ND	U	239	1750	ug/Kg	2000	10/3/2012 19:10
Vinyl chloride	ND	U	217	1750	ug/Kg	2000	10/3/2012 19:10
Xylene (total)	**3020**	J	318	3490	ug/Kg	2000	10/3/2012 19:10
cis-1,2-Dichloroethene	ND	U	238	1750	ug/Kg	2000	10/3/2012 19:10
m,p-Xylene	**2550**	J	318	3490	ug/Kg	2000	10/3/2012 19:10
n-Propylbenzene	**2570**		197	1750	ug/Kg	2000	10/3/2012 19:10
o-Xylene	**472**	J	153	1750	ug/Kg	2000	10/3/2012 19:10
sec-Butylbenzene	ND	U	196	1750	ug/Kg	2000	10/3/2012 19:10
tert-Butyl methyl ether (MTBE)	ND	U	252	1750	ug/Kg	2000	10/3/2012 19:10
tert-Butylbenzene	**594**	J	149	1750	ug/Kg	2000	10/3/2012 19:10
trans-1,2-Dichloroethene	ND	U	390	1750	ug/Kg	2000	10/3/2012 19:10
trans-1,4-Dichloro-2-butene	ND	U	723	8740	ug/Kg	2000	10/3/2012 19:10
Surrogates							
1,2-Dichloroethane-d4	104			55.0-173	%	2000	10/3/2012 19:10
4-Bromofluorobenzene	111			23.0-141	%	2000	10/3/2012 19:10
Toluene d8	102			57.0-134	%	2000	10/3/2012 19:10

Batch Information

Analytical Batch: **VMS2606**
Analytical Method: **SW-846 8260B**
Instrument: **MSD4**
Analyst: **DVO**

Prep Batch: **VXX4097**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/01/2012 10:47**
Prep Initial Wt./Vol.: **6.43 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-3**

Client Sample ID: **B-3**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135003-E
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**710**		81.9	81.9	mg/kg	25	10/8/2012 15:52
Surrogates							
4-Bromofluorobenzene	121			70.0-130	%	25	10/8/2012 15:52

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:47**
Prep Initial Wt./Vol.: **6.86 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-3**

Client Sample ID: **B-3**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135003-F
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 89.00

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**9730**		703	703	mg/kg	100	10/4/2012 20:54
Surrogates							
o-Terphenyl	NA	D		40.0-140	%	100	10/4/2012 20:54

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3129**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/01/2012 10:18**
Prep Initial Wt./Vol.: **31.94 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-4**

Client Sample ID: **B-4**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135004-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.30

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	16.5	159	ug/Kg	200	10/3/2012 18:22
1,1,1-Trichloroethane	ND	U	19.6	159	ug/Kg	200	10/3/2012 18:22
1,1,2,2-Tetrachloroethane	ND	U	24.8	159	ug/Kg	200	10/3/2012 18:22
1,1,2-Trichloroethane	ND	U	20.0	159	ug/Kg	200	10/3/2012 18:22
1,1-Dichloroethane	ND	U	26.2	159	ug/Kg	200	10/3/2012 18:22
1,1-Dichloroethene	ND	U	33.7	159	ug/Kg	200	10/3/2012 18:22
1,1-Dichloropropene	ND	U	13.7	159	ug/Kg	200	10/3/2012 18:22
1,2,3-Trichlorobenzene	ND	U	17.5	159	ug/Kg	200	10/3/2012 18:22
1,2,3-Trichloropropane	ND	U	33.7	159	ug/Kg	200	10/3/2012 18:22
1,2,4-Trichlorobenzene	ND	U	14.5	159	ug/Kg	200	10/3/2012 18:22
1,2,4-Trimethylbenzene	**4620**		15.3	159	ug/Kg	200	10/3/2012 18:22
1,2-Dibromo-3-chloropropane	ND	U	119	795	ug/Kg	200	10/3/2012 18:22
1,2-Dibromoethane	ND	U	19.1	159	ug/Kg	200	10/3/2012 18:22
1,2-Dichlorobenzene	ND	U	21.8	159	ug/Kg	200	10/3/2012 18:22
1,2-Dichloroethane	ND	U	26.6	159	ug/Kg	200	10/3/2012 18:22
1,2-Dichloropropane	ND	U	25.9	159	ug/Kg	200	10/3/2012 18:22
1,3,5-Trimethylbenzene	**2220**		18.0	159	ug/Kg	200	10/3/2012 18:22
1,3-Dichlorobenzene	ND	U	16.4	159	ug/Kg	200	10/3/2012 18:22
1,3-Dichloropropane	ND	U	20.7	159	ug/Kg	200	10/3/2012 18:22
1,4-Dichlorobenzene	ND	U	20.7	159	ug/Kg	200	10/3/2012 18:22
2,2-Dichloropropane	ND	U	62.5	159	ug/Kg	200	10/3/2012 18:22
2-Butanone	ND	U	115	3980	ug/Kg	200	10/3/2012 18:22
2-Chlorotoluene	ND	U	18.0	159	ug/Kg	200	10/3/2012 18:22
2-Hexanone	ND	U	116	795	ug/Kg	200	10/3/2012 18:22
4-Chlorotoluene	ND	U	19.9	159	ug/Kg	200	10/3/2012 18:22
4-Isopropyltoluene	**1860**		12.2	159	ug/Kg	200	10/3/2012 18:22
4-Methyl-2-pentanone	ND	U	88.7	795	ug/Kg	200	10/3/2012 18:22
Acetone	ND	U	137	3980	ug/Kg	200	10/3/2012 18:22
Benzene	ND	U	18.0	159	ug/Kg	200	10/3/2012 18:22
Bromobenzene	ND	U	17.5	159	ug/Kg	200	10/3/2012 18:22
Bromochloromethane	ND	U	33.6	159	ug/Kg	200	10/3/2012 18:22
Bromodichloromethane	ND	U	17.5	159	ug/Kg	200	10/3/2012 18:22
Bromoform	ND	U	15.5	159	ug/Kg	200	10/3/2012 18:22
Bromomethane	ND	U	37.7	159	ug/Kg	200	10/3/2012 18:22
n-Butylbenzene	ND	U	12.2	159	ug/Kg	200	10/3/2012 18:22
Carbon disulfide	ND	U	16.9	159	ug/Kg	200	10/3/2012 18:22
Carbon tetrachloride	ND	U	16.1	159	ug/Kg	200	10/3/2012 18:22
Chlorobenzene	ND	U	18.4	159	ug/Kg	200	10/3/2012 18:22
Chloroethane	ND	U	49.5	159	ug/Kg	200	10/3/2012 18:22
Chloroform	ND	U	22.1	159	ug/Kg	200	10/3/2012 18:22
Chloromethane	ND	U	71.3	159	ug/Kg	200	10/3/2012 18:22
Dibromochloromethane	ND	U	21.3	159	ug/Kg	200	10/3/2012 18:22
Dibromomethane	ND	U	26.7	159	ug/Kg	200	10/3/2012 18:22

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-4**

Client Sample ID: **B-4**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135004-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.30

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	27.2	795	ug/Kg	200	10/3/2012 18:22
cis-1,3-Dichloropropene	ND	U	12.2	159	ug/Kg	200	10/3/2012 18:22
trans-1,3-Dichloropropene	ND	U	13.7	159	ug/Kg	200	10/3/2012 18:22
Diisopropyl Ether	ND	U	46.8	159	ug/Kg	200	10/3/2012 18:22
Ethyl Benzene	**60.4**	J	13.9	159	ug/Kg	200	10/3/2012 18:22
Hexachlorobutadiene	ND	U	12.6	159	ug/Kg	200	10/3/2012 18:22
Isopropylbenzene (Cumene)	**142**	J	13.8	159	ug/Kg	200	10/3/2012 18:22
Methyl iodide	ND	U	18.3	159	ug/Kg	200	10/3/2012 18:22
Methylene chloride	**47.7**	J	24.2	795	ug/Kg	200	10/3/2012 18:22
Naphthalene	**1670**		13.6	159	ug/Kg	200	10/3/2012 18:22
Styrene	ND	U	16.2	159	ug/Kg	200	10/3/2012 18:22
Tetrachloroethene	ND	U	24.7	159	ug/Kg	200	10/3/2012 18:22
Toluene	ND	U	21.2	159	ug/Kg	200	10/3/2012 18:22
Trichloroethene	ND	U	19.9	159	ug/Kg	200	10/3/2012 18:22
Trichlorofluoromethane	ND	U	21.8	159	ug/Kg	200	10/3/2012 18:22
Vinyl chloride	ND	U	19.7	159	ug/Kg	200	10/3/2012 18:22
Xylene (total)	**633**		28.9	318	ug/Kg	200	10/3/2012 18:22
cis-1,2-Dichloroethene	ND	U	21.6	159	ug/Kg	200	10/3/2012 18:22
m,p-Xylene	**369**		28.9	318	ug/Kg	200	10/3/2012 18:22
n-Propylbenzene	**353**		18.0	159	ug/Kg	200	10/3/2012 18:22
o-Xylene	**264**		13.9	159	ug/Kg	200	10/3/2012 18:22
sec-Butylbenzene	ND	U	17.8	159	ug/Kg	200	10/3/2012 18:22
tert-Butyl methyl ether (MTBE)	ND	U	22.9	159	ug/Kg	200	10/3/2012 18:22
tert-Butylbenzene	**74.8**	J	13.6	159	ug/Kg	200	10/3/2012 18:22
trans-1,2-Dichloroethene	ND	U	35.5	159	ug/Kg	200	10/3/2012 18:22
trans-1,4-Dichloro-2-butene	ND	U	65.8	795	ug/Kg	200	10/3/2012 18:22
Surrogates							
1,2-Dichloroethane-d4	104			55.0-173	%	200	10/3/2012 18:22
4-Bromofluorobenzene	121			23.0-141	%	200	10/3/2012 18:22
Toluene d8	103			57.0-134	%	200	10/3/2012 18:22

Batch Information

Analytical Batch: **VMS2606**
Analytical Method: **SW-846 8260B**
Instrument: **MSD4**
Analyst: **DVO**

Prep Batch: **VXX4097**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/01/2012 10:50**
Prep Initial Wt./Vol.: **6.74 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-4**

Client Sample ID: **B-4**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135004-E
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**763**		245	245	mg/kg	50	10/8/2012 15:01
Surrogates							
4-Bromofluorobenzene	106			70.0-130	%	50	10/8/2012 15:01

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:50**
Prep Initial Wt./Vol.: **4.38 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-4**

Client Sample ID: **B-4**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135004-F
Lab Project ID: 31203135

Collection Date: 09/25/2012 14:45
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**3920**		129	129	mg/kg	20	10/4/2012 21:23
Surrogates							
o-Terphenyl	NA	D		40.0-140	%	20	10/4/2012 21:23

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3129**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/01/2012 10:18**
Prep Initial Wt./Vol.: **33.3 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-5**

Client Sample ID: **B-5**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135005-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 15:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 92.10

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.564	3.98	ug/Kg	1	10/4/2012 17:10
1,1,1-Trichloroethane	ND	U	0.600	3.98	ug/Kg	1	10/4/2012 17:10
1,1,2,2-Tetrachloroethane	ND	U	0.932	3.98	ug/Kg	1	10/4/2012 17:10
1,1,2-Trichloroethane	ND	U	0.828	3.98	ug/Kg	1	10/4/2012 17:10
1,1-Dichloroethane	ND	U	0.428	3.98	ug/Kg	1	10/4/2012 17:10
1,1-Dichloroethene	ND	U	0.924	3.98	ug/Kg	1	10/4/2012 17:10
1,1-Dichloropropene	ND	U	0.538	3.98	ug/Kg	1	10/4/2012 17:10
1,2,3-Trichlorobenzene	ND	U	0.662	3.98	ug/Kg	1	10/4/2012 17:10
1,2,3-Trichloropropane	ND	U	0.820	3.98	ug/Kg	1	10/4/2012 17:10
1,2,4-Trichlorobenzene	ND	U	0.580	3.98	ug/Kg	1	10/4/2012 17:10
1,2,4-Trimethylbenzene	ND	U	0.507	3.98	ug/Kg	1	10/4/2012 17:10
1,2-Dibromo-3-chloropropane	ND	U	5.90	23.9	ug/Kg	1	10/4/2012 17:10
1,2-Dibromoethane	ND	U	1.04	3.98	ug/Kg	1	10/4/2012 17:10
1,2-Dichlorobenzene	ND	U	0.566	3.98	ug/Kg	1	10/4/2012 17:10
1,2-Dichloroethane	ND	U	0.727	3.98	ug/Kg	1	10/4/2012 17:10
1,2-Dichloropropane	ND	U	0.916	3.98	ug/Kg	1	10/4/2012 17:10
1,3,5-Trimethylbenzene	ND	U	0.484	3.98	ug/Kg	1	10/4/2012 17:10
1,3-Dichlorobenzene	ND	U	0.572	3.98	ug/Kg	1	10/4/2012 17:10
1,3-Dichloropropane	ND	U	0.700	3.98	ug/Kg	1	10/4/2012 17:10
1,4-Dichlorobenzene	ND	U	0.537	3.98	ug/Kg	1	10/4/2012 17:10
2,2-Dichloropropane	ND	U	0.588	3.98	ug/Kg	1	10/4/2012 17:10
2-Butanone	ND	U	2.69	19.9	ug/Kg	1	10/4/2012 17:10
2-Chlorotoluene	ND	U	0.746	3.98	ug/Kg	1	10/4/2012 17:10
2-Hexanone	ND	U	2.56	9.95	ug/Kg	1	10/4/2012 17:10
4-Chlorotoluene	ND	U	0.602	3.98	ug/Kg	1	10/4/2012 17:10
4-Isopropyltoluene	ND	U	0.514	3.98	ug/Kg	1	10/4/2012 17:10
4-Methyl-2-pentanone	ND	U	2.98	9.95	ug/Kg	1	10/4/2012 17:10
Acetone	ND	U	3.19	39.8	ug/Kg	1	10/4/2012 17:10
Benzene	ND	U	0.566	3.98	ug/Kg	1	10/4/2012 17:10
Bromobenzene	ND	U	0.555	3.98	ug/Kg	1	10/4/2012 17:10
Bromochloromethane	ND	U	0.748	3.98	ug/Kg	1	10/4/2012 17:10
Bromodichloromethane	ND	U	0.561	3.98	ug/Kg	1	10/4/2012 17:10
Bromoform	ND	U	0.576	3.98	ug/Kg	1	10/4/2012 17:10
Bromomethane	ND	U	1.15	3.98	ug/Kg	1	10/4/2012 17:10
n-Butylbenzene	ND	U	0.523	3.98	ug/Kg	1	10/4/2012 17:10
Carbon disulfide	ND	U	0.416	3.98	ug/Kg	1	10/4/2012 17:10
Carbon tetrachloride	ND	U	0.453	3.98	ug/Kg	1	10/4/2012 17:10
Chlorobenzene	ND	U	0.556	3.98	ug/Kg	1	10/4/2012 17:10
Chloroethane	ND	U	0.796	3.98	ug/Kg	1	10/4/2012 17:10
Chloroform	ND	U	0.507	3.98	ug/Kg	1	10/4/2012 17:10
Chloromethane	ND	U	1.14	3.98	ug/Kg	1	10/4/2012 17:10
Dibromochloromethane	ND	U	0.884	3.98	ug/Kg	1	10/4/2012 17:10
Dibromomethane	ND	U	0.702	3.98	ug/Kg	1	10/4/2012 17:10

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-5**

Client Sample ID: **B-5**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135005-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 15:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 92.10

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	0.836	3.98	ug/Kg	1	10/4/2012 17:10
cis-1,3-Dichloropropene	ND	U	0.820	3.98	ug/Kg	1	10/4/2012 17:10
trans-1,3-Dichloropropene	ND	U	0.752	3.98	ug/Kg	1	10/4/2012 17:10
Diisopropyl Ether	ND	U	0.654	3.98	ug/Kg	1	10/4/2012 17:10
Ethyl Benzene	ND	U	0.561	3.98	ug/Kg	1	10/4/2012 17:10
Hexachlorobutadiene	ND	U	0.547	3.98	ug/Kg	1	10/4/2012 17:10
Isopropylbenzene (Cumene)	ND	U	0.495	3.98	ug/Kg	1	10/4/2012 17:10
Methyl iodide	ND	U	0.610	3.98	ug/Kg	1	10/4/2012 17:10
Methylene chloride	ND	U	0.836	15.9	ug/Kg	1	10/4/2012 17:10
Naphthalene	ND	U	0.724	3.98	ug/Kg	1	10/4/2012 17:10
Styrene	ND	U	0.459	3.98	ug/Kg	1	10/4/2012 17:10
Tetrachloroethene	ND	U	0.598	3.98	ug/Kg	1	10/4/2012 17:10
Toluene	ND	U	0.548	3.98	ug/Kg	1	10/4/2012 17:10
Trichloroethene	ND	U	0.670	3.98	ug/Kg	1	10/4/2012 17:10
Trichlorofluoromethane	ND	U	0.804	3.98	ug/Kg	1	10/4/2012 17:10
Vinyl chloride	ND	U	0.756	3.98	ug/Kg	1	10/4/2012 17:10
Xylene (total)	ND	U	1.41	7.96	ug/Kg	1	10/4/2012 17:10
cis-1,2-Dichloroethene	ND	U	0.486	3.98	ug/Kg	1	10/4/2012 17:10
m,p-Xylene	ND	U	1.35	7.96	ug/Kg	1	10/4/2012 17:10
n-Propylbenzene	ND	U	0.583	3.98	ug/Kg	1	10/4/2012 17:10
o-Xylene	ND	U	0.610	3.98	ug/Kg	1	10/4/2012 17:10
sec-Butylbenzene	ND	U	0.478	3.98	ug/Kg	1	10/4/2012 17:10
tert-Butyl methyl ether (MTBE)	ND	U	0.633	3.98	ug/Kg	1	10/4/2012 17:10
tert-Butylbenzene	ND	U	0.536	3.98	ug/Kg	1	10/4/2012 17:10
trans-1,2-Dichloroethene	ND	U	0.581	3.98	ug/Kg	1	10/4/2012 17:10
trans-1,4-Dichloro-2-butene	ND	U	3.34	19.9	ug/Kg	1	10/4/2012 17:10
Surrogates							
1,2-Dichloroethane-d4	107			55.0-173	%	1	10/4/2012 17:10
4-Bromofluorobenzene	99.0			23.0-141	%	1	10/4/2012 17:10
Toluene d8	102			57.0-134	%	1	10/4/2012 17:10

Batch Information

Analytical Batch: **VMS2611**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX4093**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/01/2012 10:54**
Prep Initial Wt./Vol.: **6.82 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-5**

Client Sample ID: **B-5**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135005-E
Lab Project ID: 31203135

Collection Date: 09/25/2012 15:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 92.10

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.00	3.00	mg/kg	1	10/8/2012 18:25
Surrogates							
4-Bromofluorobenzene	106			70.0-130	%	1	10/8/2012 18:25

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:54**
Prep Initial Wt./Vol.: **7.24 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-5**

Client Sample ID: **B-5**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135005-F
Lab Project ID: 31203135

Collection Date: 09/25/2012 15:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 92.10

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	6.86	6.86	mg/kg	1	10/4/2012 22:20
Surrogates							
o-Terphenyl	93.4			40.0-140	%	1	10/4/2012 22:20

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Prep Initial Wt./Vol.: **31.64 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-6**

Client Sample ID: **B-6**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135006-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 16:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.40

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.466	4.73	ug/Kg	1	10/7/2012 22:49
1,1,1-Trichloroethane	ND	U	0.399	4.73	ug/Kg	1	10/7/2012 22:49
1,1,2,2-Tetrachloroethane	ND	U	0.776	4.73	ug/Kg	1	10/7/2012 22:49
1,1,2-Trichloroethane	ND	U	0.573	4.73	ug/Kg	1	10/7/2012 22:49
1,1-Dichloroethane	ND	U	0.556	4.73	ug/Kg	1	10/7/2012 22:49
1,1-Dichloroethene	ND	U	2.82	4.73	ug/Kg	1	10/7/2012 22:49
1,1-Dichloropropene	ND	U	0.454	4.73	ug/Kg	1	10/7/2012 22:49
1,2,3-Trichlorobenzene	ND	U	0.394	4.73	ug/Kg	1	10/7/2012 22:49
1,2,3-Trichloropropane	ND	U	0.588	4.73	ug/Kg	1	10/7/2012 22:49
1,2,4-Trichlorobenzene	ND	U	0.386	4.73	ug/Kg	1	10/7/2012 22:49
1,2,4-Trimethylbenzene	**1.94**	J	0.455	4.73	ug/Kg	1	10/7/2012 22:49
1,2-Dibromo-3-chloropropane	ND	U	6.04	28.4	ug/Kg	1	10/7/2012 22:49
1,2-Dibromoethane	ND	U	0.530	4.73	ug/Kg	1	10/7/2012 22:49
1,2-Dichlorobenzene	ND	U	0.628	4.73	ug/Kg	1	10/7/2012 22:49
1,2-Dichloroethane	ND	U	0.775	4.73	ug/Kg	1	10/7/2012 22:49
1,2-Dichloropropane	ND	U	0.435	4.73	ug/Kg	1	10/7/2012 22:49
1,3,5-Trimethylbenzene	ND	U	0.773	4.73	ug/Kg	1	10/7/2012 22:49
1,3-Dichlorobenzene	ND	U	0.360	4.73	ug/Kg	1	10/7/2012 22:49
1,3-Dichloropropane	ND	U	0.642	4.73	ug/Kg	1	10/7/2012 22:49
1,4-Dichlorobenzene	ND	U	0.465	4.73	ug/Kg	1	10/7/2012 22:49
2,2-Dichloropropane	ND	U	0.451	4.73	ug/Kg	1	10/7/2012 22:49
2-Butanone	**47.3**		2.54	23.7	ug/Kg	1	10/7/2012 22:49
2-Chlorotoluene	ND	U	0.650	4.73	ug/Kg	1	10/7/2012 22:49
2-Hexanone	ND	U	2.66	11.8	ug/Kg	1	10/7/2012 22:49
4-Chlorotoluene	ND	U	0.453	4.73	ug/Kg	1	10/7/2012 22:49
4-Isopropyltoluene	ND	U	0.533	4.73	ug/Kg	1	10/7/2012 22:49
4-Methyl-2-pentanone	ND	U	1.96	11.8	ug/Kg	1	10/7/2012 22:49
Acetone	**49.3**		3.54	47.3	ug/Kg	1	10/7/2012 22:49
Benzene	ND	U	0.367	4.73	ug/Kg	1	10/7/2012 22:49
Bromobenzene	ND	U	0.884	4.73	ug/Kg	1	10/7/2012 22:49
Bromochloromethane	ND	U	1.39	4.73	ug/Kg	1	10/7/2012 22:49
Bromodichloromethane	ND	U	0.643	4.73	ug/Kg	1	10/7/2012 22:49
Bromoform	ND	U	2.17	4.73	ug/Kg	1	10/7/2012 22:49
Bromomethane	ND	U	1.62	4.73	ug/Kg	1	10/7/2012 22:49
n-Butylbenzene	ND	U	0.400	4.73	ug/Kg	1	10/7/2012 22:49
Carbon disulfide	ND	U	0.776	4.73	ug/Kg	1	10/7/2012 22:49
Carbon tetrachloride	ND	U	0.530	4.73	ug/Kg	1	10/7/2012 22:49
Chlorobenzene	ND	U	0.461	4.73	ug/Kg	1	10/7/2012 22:49
Chloroethane	ND	U	1.16	4.73	ug/Kg	1	10/7/2012 22:49
Chloroform	ND	U	0.487	4.73	ug/Kg	1	10/7/2012 22:49
Chloromethane	ND	U	0.611	4.73	ug/Kg	1	10/7/2012 22:49
Dibromochloromethane	ND	U	0.767	4.73	ug/Kg	1	10/7/2012 22:49
Dibromomethane	ND	U	0.549	4.73	ug/Kg	1	10/7/2012 22:49

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-6**

Client Sample ID: **B-6**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135006-A
Lab Project ID: 31203135

Collection Date: 09/25/2012 16:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.40

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	0.709	4.73	ug/Kg	1	10/7/2012 22:49
cis-1,3-Dichloropropene	ND	U	0.474	4.73	ug/Kg	1	10/7/2012 22:49
trans-1,3-Dichloropropene	ND	U	0.504	4.73	ug/Kg	1	10/7/2012 22:49
Diisopropyl Ether	ND	U	0.644	4.73	ug/Kg	1	10/7/2012 22:49
Ethyl Benzene	**3.48**	J	0.418	4.73	ug/Kg	1	10/7/2012 22:49
Hexachlorobutadiene	ND	U	0.560	4.73	ug/Kg	1	10/7/2012 22:49
Isopropylbenzene (Cumene)	ND	U	0.354	4.73	ug/Kg	1	10/7/2012 22:49
Methyl iodide	ND	U	0.508	4.73	ug/Kg	1	10/7/2012 22:49
Methylene chloride	ND	U	0.855	18.9	ug/Kg	1	10/7/2012 22:49
Naphthalene	ND	U	0.598	4.73	ug/Kg	1	10/7/2012 22:49
Styrene	ND	U	0.504	4.73	ug/Kg	1	10/7/2012 22:49
Tetrachloroethene	ND	U	0.549	4.73	ug/Kg	1	10/7/2012 22:49
Toluene	**1.12**	J	0.657	4.73	ug/Kg	1	10/7/2012 22:49
Trichloroethene	ND	U	0.608	4.73	ug/Kg	1	10/7/2012 22:49
Trichlorofluoromethane	ND	U	0.538	4.73	ug/Kg	1	10/7/2012 22:49
Vinyl chloride	ND	U	0.750	4.73	ug/Kg	1	10/7/2012 22:49
Xylene (total)	**28.1**		1.67	9.46	ug/Kg	1	10/7/2012 22:49
cis-1,2-Dichloroethene	ND	U	0.633	4.73	ug/Kg	1	10/7/2012 22:49
m,p-Xylene	**17.8**		0.738	9.46	ug/Kg	1	10/7/2012 22:49
n-Propylbenzene	ND	U	0.459	4.73	ug/Kg	1	10/7/2012 22:49
o-Xylene	**10.2**		0.675	4.73	ug/Kg	1	10/7/2012 22:49
sec-Butylbenzene	ND	U	0.460	4.73	ug/Kg	1	10/7/2012 22:49
tert-Butyl methyl ether (MTBE)	ND	U	0.652	4.73	ug/Kg	1	10/7/2012 22:49
tert-Butylbenzene	ND	U	0.372	4.73	ug/Kg	1	10/7/2012 22:49
trans-1,2-Dichloroethene	ND	U	0.729	4.73	ug/Kg	1	10/7/2012 22:49
trans-1,4-Dichloro-2-butene	ND	U	5.55	23.7	ug/Kg	1	10/7/2012 22:49
Surrogates							
1,2-Dichloroethane-d4	118			55.0-173	%	1	10/7/2012 22:49
4-Bromofluorobenzene	101			23.0-141	%	1	10/7/2012 22:49
Toluene d8	102			57.0-134	%	1	10/7/2012 22:49

Batch Information

Analytical Batch: **VMS2615**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**

Prep Batch: **VXX4102**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/01/2012 10:56**
Prep Initial Wt./Vol.: **5.66 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-6**

Client Sample ID: **B-6**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135006-E
Lab Project ID: 31203135

Collection Date: 09/25/2012 16:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.40

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.32	3.32	mg/kg	1	10/8/2012 18:50
Surrogates							
4-Bromofluorobenzene	109			70.0-130	%	1	10/8/2012 18:50

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:56**
Prep Initial Wt./Vol.: **6.45 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-6**

Client Sample ID: **B-6**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135006-F
Lab Project ID: 31203135

Collection Date: 09/25/2012 16:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 93.40

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**90.3**		6.26	6.26	mg/kg	1	10/4/2012 23:45
Surrogates							
o-Terphenyl	101			40.0-140	%	1	10/4/2012 23:45

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Prep Initial Wt./Vol.: **34.22 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-7**

Client Sample ID: **B-7**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135007-A
Lab Project ID: 31203135

Collection Date: 09/26/2012 11:35
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.526	5.35	ug/Kg	1	10/7/2012 17:17
1,1,1-Trichloroethane	ND	U	0.451	5.35	ug/Kg	1	10/7/2012 17:17
1,1,2,2-Tetrachloroethane	ND	U	0.877	5.35	ug/Kg	1	10/7/2012 17:17
1,1,2-Trichloroethane	ND	U	0.648	5.35	ug/Kg	1	10/7/2012 17:17
1,1-Dichloroethane	ND	U	0.629	5.35	ug/Kg	1	10/7/2012 17:17
1,1-Dichloroethene	ND	U	3.19	5.35	ug/Kg	1	10/7/2012 17:17
1,1-Dichloropropene	ND	U	0.513	5.35	ug/Kg	1	10/7/2012 17:17
1,2,3-Trichlorobenzene	ND	U	0.445	5.35	ug/Kg	1	10/7/2012 17:17
1,2,3-Trichloropropane	ND	U	0.664	5.35	ug/Kg	1	10/7/2012 17:17
1,2,4-Trichlorobenzene	ND	U	0.436	5.35	ug/Kg	1	10/7/2012 17:17
1,2,4-Trimethylbenzene	ND	U	0.514	5.35	ug/Kg	1	10/7/2012 17:17
1,2-Dibromo-3-chloropropane	ND	U	6.82	32.1	ug/Kg	1	10/7/2012 17:17
1,2-Dibromoethane	ND	U	0.599	5.35	ug/Kg	1	10/7/2012 17:17
1,2-Dichlorobenzene	ND	U	0.710	5.35	ug/Kg	1	10/7/2012 17:17
1,2-Dichloroethane	ND	U	0.876	5.35	ug/Kg	1	10/7/2012 17:17
1,2-Dichloropropane	ND	U	0.492	5.35	ug/Kg	1	10/7/2012 17:17
1,3,5-Trimethylbenzene	ND	U	0.874	5.35	ug/Kg	1	10/7/2012 17:17
1,3-Dichlorobenzene	ND	U	0.406	5.35	ug/Kg	1	10/7/2012 17:17
1,3-Dichloropropane	ND	U	0.725	5.35	ug/Kg	1	10/7/2012 17:17
1,4-Dichlorobenzene	ND	U	0.525	5.35	ug/Kg	1	10/7/2012 17:17
2,2-Dichloropropane	ND	U	0.510	5.35	ug/Kg	1	10/7/2012 17:17
2-Butanone	ND	U	2.87	26.7	ug/Kg	1	10/7/2012 17:17
2-Chlorotoluene	ND	U	0.735	5.35	ug/Kg	1	10/7/2012 17:17
2-Hexanone	ND	U	3.01	13.4	ug/Kg	1	10/7/2012 17:17
4-Chlorotoluene	ND	U	0.512	5.35	ug/Kg	1	10/7/2012 17:17
4-Isopropyltoluene	ND	U	0.602	5.35	ug/Kg	1	10/7/2012 17:17
4-Methyl-2-pentanone	ND	U	2.21	13.4	ug/Kg	1	10/7/2012 17:17
Acetone	**21.9**	J	4.00	53.5	ug/Kg	1	10/7/2012 17:17
Benzene	ND	U	0.415	5.35	ug/Kg	1	10/7/2012 17:17
Bromobenzene	ND	U	0.999	5.35	ug/Kg	1	10/7/2012 17:17
Bromochloromethane	ND	U	1.57	5.35	ug/Kg	1	10/7/2012 17:17
Bromodichloromethane	ND	U	0.727	5.35	ug/Kg	1	10/7/2012 17:17
Bromoform	ND	U	2.45	5.35	ug/Kg	1	10/7/2012 17:17
Bromomethane	ND	U	1.83	5.35	ug/Kg	1	10/7/2012 17:17
n-Butylbenzene	ND	U	0.452	5.35	ug/Kg	1	10/7/2012 17:17
Carbon disulfide	ND	U	0.877	5.35	ug/Kg	1	10/7/2012 17:17
Carbon tetrachloride	ND	U	0.599	5.35	ug/Kg	1	10/7/2012 17:17
Chlorobenzene	ND	U	0.521	5.35	ug/Kg	1	10/7/2012 17:17
Chloroethane	ND	U	1.32	5.35	ug/Kg	1	10/7/2012 17:17
Chloroform	ND	U	0.551	5.35	ug/Kg	1	10/7/2012 17:17
Chloromethane	ND	U	0.691	5.35	ug/Kg	1	10/7/2012 17:17
Dibromochloromethane	ND	U	0.867	5.35	ug/Kg	1	10/7/2012 17:17
Dibromomethane	ND	U	0.620	5.35	ug/Kg	1	10/7/2012 17:17

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-7**

Client Sample ID: **B-7**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135007-A
Lab Project ID: 31203135

Collection Date: 09/26/2012 11:35
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	0.801	5.35	ug/Kg	1	10/7/2012 17:17
cis-1,3-Dichloropropene	ND	U	0.536	5.35	ug/Kg	1	10/7/2012 17:17
trans-1,3-Dichloropropene	ND	U	0.570	5.35	ug/Kg	1	10/7/2012 17:17
Diisopropyl Ether	ND	U	0.728	5.35	ug/Kg	1	10/7/2012 17:17
Ethyl Benzene	ND	U	0.473	5.35	ug/Kg	1	10/7/2012 17:17
Hexachlorobutadiene	ND	U	0.633	5.35	ug/Kg	1	10/7/2012 17:17
Isopropylbenzene (Cumene)	ND	U	0.400	5.35	ug/Kg	1	10/7/2012 17:17
Methyl iodide	ND	U	0.574	5.35	ug/Kg	1	10/7/2012 17:17
Methylene chloride	ND	U	0.967	21.4	ug/Kg	1	10/7/2012 17:17
Naphthalene	ND	U	0.676	5.35	ug/Kg	1	10/7/2012 17:17
Styrene	ND	U	0.570	5.35	ug/Kg	1	10/7/2012 17:17
Tetrachloroethene	ND	U	0.620	5.35	ug/Kg	1	10/7/2012 17:17
Toluene	ND	U	0.742	5.35	ug/Kg	1	10/7/2012 17:17
Trichloroethene	ND	U	0.688	5.35	ug/Kg	1	10/7/2012 17:17
Trichlorofluoromethane	ND	U	0.609	5.35	ug/Kg	1	10/7/2012 17:17
Vinyl chloride	ND	U	0.848	5.35	ug/Kg	1	10/7/2012 17:17
Xylene (total)	ND	U	1.89	10.7	ug/Kg	1	10/7/2012 17:17
cis-1,2-Dichloroethene	ND	U	0.715	5.35	ug/Kg	1	10/7/2012 17:17
m,p-Xylene	ND	U	0.834	10.7	ug/Kg	1	10/7/2012 17:17
n-Propylbenzene	ND	U	0.519	5.35	ug/Kg	1	10/7/2012 17:17
o-Xylene	ND	U	0.763	5.35	ug/Kg	1	10/7/2012 17:17
sec-Butylbenzene	ND	U	0.520	5.35	ug/Kg	1	10/7/2012 17:17
tert-Butyl methyl ether (MTBE)	ND	U	0.737	5.35	ug/Kg	1	10/7/2012 17:17
tert-Butylbenzene	ND	U	0.420	5.35	ug/Kg	1	10/7/2012 17:17
trans-1,2-Dichloroethene	ND	U	0.823	5.35	ug/Kg	1	10/7/2012 17:17
trans-1,4-Dichloro-2-butene	ND	U	6.28	26.7	ug/Kg	1	10/7/2012 17:17
Surrogates							
1,2-Dichloroethane-d4	131			55.0-173	%	1	10/7/2012 17:17
4-Bromofluorobenzene	104			23.0-141	%	1	10/7/2012 17:17
Toluene d8	104			57.0-134	%	1	10/7/2012 17:17

Batch Information

Analytical Batch: **VMS2615**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**

Prep Batch: **VXX4102**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/01/2012 10:58**
Prep Initial Wt./Vol.: **5.82 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-7**

Client Sample ID: **B-7**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135007-E
Lab Project ID: 31203135

Collection Date: 09/26/2012 11:35
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.70	3.70	mg/kg	1	10/8/2012 19:15
Surrogates							
4-Bromofluorobenzene	107			70.0-130	%	1	10/8/2012 19:15

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 10:58**
Prep Initial Wt./Vol.: **6.72 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-7**

Client Sample ID: **B-7**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135007-F
Lab Project ID: 31203135

Collection Date: 09/26/2012 11:35
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 80.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	7.88	7.88	mg/kg	1	10/5/2012 0:13
Surrogates							
o-Terphenyl	84.2			40.0-140	%	1	10/5/2012 0:13

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Prep Initial Wt./Vol.: **31.58 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-8**

Client Sample ID: **B-8**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135008-D
Lab Project ID: 31203135

Collection Date: 09/26/2012 12:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.50

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	5.56	53.5	ug/Kg	50	10/9/2012 13:19
1,1,1-Trichloroethane	ND	U	6.57	53.5	ug/Kg	50	10/9/2012 13:19
1,1,2,2-Tetrachloroethane	ND	U	8.34	53.5	ug/Kg	50	10/9/2012 13:19
1,1,2-Trichloroethane	ND	U	6.74	53.5	ug/Kg	50	10/9/2012 13:19
1,1-Dichloroethane	ND	U	8.82	53.5	ug/Kg	50	10/9/2012 13:19
1,1-Dichloroethene	ND	U	11.3	53.5	ug/Kg	50	10/9/2012 13:19
1,1-Dichloropropene	ND	U	4.61	53.5	ug/Kg	50	10/9/2012 13:19
1,2,3-Trichlorobenzene	ND	U	5.88	53.5	ug/Kg	50	10/9/2012 13:19
1,2,3-Trichloropropane	ND	U	11.3	53.5	ug/Kg	50	10/9/2012 13:19
1,2,4-Trichlorobenzene	ND	U	4.88	53.5	ug/Kg	50	10/9/2012 13:19
1,2,4-Trimethylbenzene	**125**		5.14	53.5	ug/Kg	50	10/9/2012 13:19
1,2-Dibromo-3-chloropropane	ND	U	40.0	267	ug/Kg	50	10/9/2012 13:19
1,2-Dibromoethane	ND	U	6.41	53.5	ug/Kg	50	10/9/2012 13:19
1,2-Dichlorobenzene	ND	U	7.32	53.5	ug/Kg	50	10/9/2012 13:19
1,2-Dichloroethane	ND	U	8.93	53.5	ug/Kg	50	10/9/2012 13:19
1,2-Dichloropropane	ND	U	8.71	53.5	ug/Kg	50	10/9/2012 13:19
1,3,5-Trimethylbenzene	**182**		6.04	53.5	ug/Kg	50	10/9/2012 13:19
1,3-Dichlorobenzene	ND	U	5.51	53.5	ug/Kg	50	10/9/2012 13:19
1,3-Dichloropropane	ND	U	6.95	53.5	ug/Kg	50	10/9/2012 13:19
1,4-Dichlorobenzene	ND	U	6.95	53.5	ug/Kg	50	10/9/2012 13:19
2,2-Dichloropropane	ND	U	21.0	53.5	ug/Kg	50	10/9/2012 13:19
2-Butanone	ND	U	38.6	1340	ug/Kg	50	10/9/2012 13:19
2-Chlorotoluene	ND	U	6.04	53.5	ug/Kg	50	10/9/2012 13:19
2-Hexanone	ND	U	38.9	267	ug/Kg	50	10/9/2012 13:19
4-Chlorotoluene	ND	U	6.68	53.5	ug/Kg	50	10/9/2012 13:19
4-Isopropyltoluene	**76.4**		4.11	53.5	ug/Kg	50	10/9/2012 13:19
4-Methyl-2-pentanone	ND	U	29.8	267	ug/Kg	50	10/9/2012 13:19
Acetone	ND	U	46.2	1340	ug/Kg	50	10/9/2012 13:19
Benzene	ND	U	6.04	53.5	ug/Kg	50	10/9/2012 13:19
Bromobenzene	ND	U	5.88	53.5	ug/Kg	50	10/9/2012 13:19
Bromochloromethane	ND	U	11.3	53.5	ug/Kg	50	10/9/2012 13:19
Bromodichloromethane	ND	U	5.88	53.5	ug/Kg	50	10/9/2012 13:19
Bromoform	ND	U	5.21	53.5	ug/Kg	50	10/9/2012 13:19
Bromomethane	ND	U	12.7	53.5	ug/Kg	50	10/9/2012 13:19
n-Butylbenzene	ND	U	4.11	53.5	ug/Kg	50	10/9/2012 13:19
Carbon disulfide	ND	U	5.67	53.5	ug/Kg	50	10/9/2012 13:19
Carbon tetrachloride	ND	U	5.40	53.5	ug/Kg	50	10/9/2012 13:19
Chlorobenzene	ND	U	6.20	53.5	ug/Kg	50	10/9/2012 13:19
Chloroethane	ND	U	16.6	53.5	ug/Kg	50	10/9/2012 13:19
Chloroform	ND	U	7.43	53.5	ug/Kg	50	10/9/2012 13:19
Chloromethane	ND	U	23.9	53.5	ug/Kg	50	10/9/2012 13:19
Dibromochloromethane	ND	U	7.16	53.5	ug/Kg	50	10/9/2012 13:19
Dibromomethane	ND	U	8.98	53.5	ug/Kg	50	10/9/2012 13:19

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-8**

Client Sample ID: **B-8**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135008-D
Lab Project ID: 31203135

Collection Date: 09/26/2012 12:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.50

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	9.14	267	ug/Kg	50	10/9/2012 13:19
cis-1,3-Dichloropropene	ND	U	4.10	53.5	ug/Kg	50	10/9/2012 13:19
trans-1,3-Dichloropropene	ND	U	4.61	53.5	ug/Kg	50	10/9/2012 13:19
Diisopropyl Ether	ND	U	15.7	53.5	ug/Kg	50	10/9/2012 13:19
Ethyl Benzene	ND	U	4.69	53.5	ug/Kg	50	10/9/2012 13:19
Hexachlorobutadiene	ND	U	4.23	53.5	ug/Kg	50	10/9/2012 13:19
Isopropylbenzene (Cumene)	ND	U	4.65	53.5	ug/Kg	50	10/9/2012 13:19
Methyl iodide	ND	U	6.15	53.5	ug/Kg	50	10/9/2012 13:19
Methylene chloride	ND	U	8.12	267	ug/Kg	50	10/9/2012 13:19
Naphthalene	**501**		4.57	53.5	ug/Kg	50	10/9/2012 13:19
Styrene	ND	U	5.45	53.5	ug/Kg	50	10/9/2012 13:19
Tetrachloroethene	ND	U	8.29	53.5	ug/Kg	50	10/9/2012 13:19
Toluene	ND	U	7.11	53.5	ug/Kg	50	10/9/2012 13:19
Trichloroethene	ND	U	6.68	53.5	ug/Kg	50	10/9/2012 13:19
Trichlorofluoromethane	ND	U	7.32	53.5	ug/Kg	50	10/9/2012 13:19
Vinyl chloride	ND	U	6.63	53.5	ug/Kg	50	10/9/2012 13:19
Xylene (total)	**14.4**	J	9.73	107	ug/Kg	50	10/9/2012 13:19
cis-1,2-Dichloroethene	ND	U	7.27	53.5	ug/Kg	50	10/9/2012 13:19
m,p-Xylene	**14.4**	J	9.73	107	ug/Kg	50	10/9/2012 13:19
n-Propylbenzene	**8.02**	J	6.04	53.5	ug/Kg	50	10/9/2012 13:19
o-Xylene	ND	U	4.67	53.5	ug/Kg	50	10/9/2012 13:19
sec-Butylbenzene	ND	U	5.99	53.5	ug/Kg	50	10/9/2012 13:19
tert-Butyl methyl ether (MTBE)	ND	U	7.70	53.5	ug/Kg	50	10/9/2012 13:19
tert-Butylbenzene	ND	U	4.57	53.5	ug/Kg	50	10/9/2012 13:19
trans-1,2-Dichloroethene	ND	U	11.9	53.5	ug/Kg	50	10/9/2012 13:19
trans-1,4-Dichloro-2-butene	ND	U	22.1	267	ug/Kg	50	10/9/2012 13:19
Surrogates							
1,2-Dichloroethane-d4	115			55.0-173	%	50	10/9/2012 13:19
4-Bromofluorobenzene	120			23.0-141	%	50	10/9/2012 13:19
Toluene d8	102			57.0-134	%	50	10/9/2012 13:19

Batch Information

Analytical Batch: **VMS2623**
Analytical Method: **SW-846 8260B**
Instrument: **MSD8**
Analyst: **BWS**

Prep Batch: **VXX4124**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/09/2012 08:22**
Prep Initial Wt./Vol.: **5.74 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-8**

Client Sample ID: **B-8**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135008-E
Lab Project ID: 31203135

Collection Date: 09/26/2012 12:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.50

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**62.2**		6.46	6.46	mg/kg	1	10/8/2012 19:41
Surrogates							
4-Bromofluorobenzene	97.4			70.0-130	%	1	10/8/2012 19:41

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 11:01**
Prep Initial Wt./Vol.: **3.8 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-8**

Client Sample ID: **B-8**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135008-F
Lab Project ID: 31203135

Collection Date: 09/26/2012 12:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 81.50

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**1230**		77.4	77.4	mg/kg	10	10/5/2012 20:09
Surrogates							
o-Terphenyl	NA	D		40.0-140	%	10	10/5/2012 20:09

Batch Information

Analytical Batch: **XGC2585**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Prep Initial Wt./Vol.: **31.71 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-9**

Client Sample ID: **B-9**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135009-A
Lab Project ID: 31203135

Collection Date: 09/26/2012 14:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 78.30

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.485	4.93	ug/Kg	1	10/7/2012 17:43
1,1,1-Trichloroethane	ND	U	0.416	4.93	ug/Kg	1	10/7/2012 17:43
1,1,2,2-Tetrachloroethane	ND	U	0.808	4.93	ug/Kg	1	10/7/2012 17:43
1,1,2-Trichloroethane	ND	U	0.597	4.93	ug/Kg	1	10/7/2012 17:43
1,1-Dichloroethane	ND	U	0.579	4.93	ug/Kg	1	10/7/2012 17:43
1,1-Dichloroethene	ND	U	2.94	4.93	ug/Kg	1	10/7/2012 17:43
1,1-Dichloropropene	ND	U	0.473	4.93	ug/Kg	1	10/7/2012 17:43
1,2,3-Trichlorobenzene	ND	U	0.410	4.93	ug/Kg	1	10/7/2012 17:43
1,2,3-Trichloropropane	ND	U	0.612	4.93	ug/Kg	1	10/7/2012 17:43
1,2,4-Trichlorobenzene	ND	U	0.402	4.93	ug/Kg	1	10/7/2012 17:43
1,2,4-Trimethylbenzene	ND	U	0.474	4.93	ug/Kg	1	10/7/2012 17:43
1,2-Dibromo-3-chloropropane	ND	U	6.29	29.6	ug/Kg	1	10/7/2012 17:43
1,2-Dibromoethane	ND	U	0.552	4.93	ug/Kg	1	10/7/2012 17:43
1,2-Dichlorobenzene	ND	U	0.654	4.93	ug/Kg	1	10/7/2012 17:43
1,2-Dichloroethane	ND	U	0.807	4.93	ug/Kg	1	10/7/2012 17:43
1,2-Dichloropropane	ND	U	0.453	4.93	ug/Kg	1	10/7/2012 17:43
1,3,5-Trimethylbenzene	ND	U	0.805	4.93	ug/Kg	1	10/7/2012 17:43
1,3-Dichlorobenzene	ND	U	0.374	4.93	ug/Kg	1	10/7/2012 17:43
1,3-Dichloropropane	ND	U	0.668	4.93	ug/Kg	1	10/7/2012 17:43
1,4-Dichlorobenzene	ND	U	0.484	4.93	ug/Kg	1	10/7/2012 17:43
2,2-Dichloropropane	ND	U	0.470	4.93	ug/Kg	1	10/7/2012 17:43
2-Butanone	**4.27**	J	2.64	24.6	ug/Kg	1	10/7/2012 17:43
2-Chlorotoluene	ND	U	0.677	4.93	ug/Kg	1	10/7/2012 17:43
2-Hexanone	ND	U	2.77	12.3	ug/Kg	1	10/7/2012 17:43
4-Chlorotoluene	ND	U	0.472	4.93	ug/Kg	1	10/7/2012 17:43
4-Isopropyltoluene	ND	U	0.555	4.93	ug/Kg	1	10/7/2012 17:43
4-Methyl-2-pentanone	ND	U	2.04	12.3	ug/Kg	1	10/7/2012 17:43
Acetone	**51.6**		3.69	49.3	ug/Kg	1	10/7/2012 17:43
Benzene	ND	U	0.382	4.93	ug/Kg	1	10/7/2012 17:43
Bromobenzene	ND	U	0.920	4.93	ug/Kg	1	10/7/2012 17:43
Bromochloromethane	ND	U	1.45	4.93	ug/Kg	1	10/7/2012 17:43
Bromodichloromethane	ND	U	0.670	4.93	ug/Kg	1	10/7/2012 17:43
Bromoform	ND	U	2.26	4.93	ug/Kg	1	10/7/2012 17:43
Bromomethane	ND	U	1.68	4.93	ug/Kg	1	10/7/2012 17:43
n-Butylbenzene	ND	U	0.417	4.93	ug/Kg	1	10/7/2012 17:43
Carbon disulfide	ND	U	0.808	4.93	ug/Kg	1	10/7/2012 17:43
Carbon tetrachloride	ND	U	0.552	4.93	ug/Kg	1	10/7/2012 17:43
Chlorobenzene	ND	U	0.480	4.93	ug/Kg	1	10/7/2012 17:43
Chloroethane	ND	U	1.21	4.93	ug/Kg	1	10/7/2012 17:43
Chloroform	ND	U	0.507	4.93	ug/Kg	1	10/7/2012 17:43
Chloromethane	ND	U	0.637	4.93	ug/Kg	1	10/7/2012 17:43
Dibromochloromethane	ND	U	0.799	4.93	ug/Kg	1	10/7/2012 17:43
Dibromomethane	ND	U	0.571	4.93	ug/Kg	1	10/7/2012 17:43

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-9**

Client Sample ID: **B-9**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135009-A
Lab Project ID: 31203135

Collection Date: 09/26/2012 14:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 78.30

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	0.738	4.93	ug/Kg	1	10/7/2012 17:43
cis-1,3-Dichloropropene	ND	U	0.494	4.93	ug/Kg	1	10/7/2012 17:43
trans-1,3-Dichloropropene	ND	U	0.525	4.93	ug/Kg	1	10/7/2012 17:43
Diisopropyl Ether	ND	U	0.671	4.93	ug/Kg	1	10/7/2012 17:43
Ethyl Benzene	ND	U	0.436	4.93	ug/Kg	1	10/7/2012 17:43
Hexachlorobutadiene	ND	U	0.583	4.93	ug/Kg	1	10/7/2012 17:43
Isopropylbenzene (Cumene)	ND	U	0.369	4.93	ug/Kg	1	10/7/2012 17:43
Methyl iodide	ND	U	0.529	4.93	ug/Kg	1	10/7/2012 17:43
Methylene chloride	ND	U	0.891	19.7	ug/Kg	1	10/7/2012 17:43
Naphthalene	ND	U	0.623	4.93	ug/Kg	1	10/7/2012 17:43
Styrene	ND	U	0.525	4.93	ug/Kg	1	10/7/2012 17:43
Tetrachloroethene	ND	U	0.571	4.93	ug/Kg	1	10/7/2012 17:43
Toluene	ND	U	0.684	4.93	ug/Kg	1	10/7/2012 17:43
Trichloroethene	ND	U	0.634	4.93	ug/Kg	1	10/7/2012 17:43
Trichlorofluoromethane	ND	U	0.561	4.93	ug/Kg	1	10/7/2012 17:43
Vinyl chloride	ND	U	0.781	4.93	ug/Kg	1	10/7/2012 17:43
Xylene (total)	ND	U	1.74	9.85	ug/Kg	1	10/7/2012 17:43
cis-1,2-Dichloroethene	ND	U	0.659	4.93	ug/Kg	1	10/7/2012 17:43
m,p-Xylene	ND	U	0.769	9.85	ug/Kg	1	10/7/2012 17:43
n-Propylbenzene	ND	U	0.478	4.93	ug/Kg	1	10/7/2012 17:43
o-Xylene	ND	U	0.703	4.93	ug/Kg	1	10/7/2012 17:43
sec-Butylbenzene	ND	U	0.479	4.93	ug/Kg	1	10/7/2012 17:43
tert-Butyl methyl ether (MTBE)	ND	U	0.679	4.93	ug/Kg	1	10/7/2012 17:43
tert-Butylbenzene	ND	U	0.387	4.93	ug/Kg	1	10/7/2012 17:43
trans-1,2-Dichloroethene	ND	U	0.759	4.93	ug/Kg	1	10/7/2012 17:43
trans-1,4-Dichloro-2-butene	ND	U	5.78	24.6	ug/Kg	1	10/7/2012 17:43
Surrogates							
1,2-Dichloroethane-d4	123			55.0-173	%	1	10/7/2012 17:43
4-Bromofluorobenzene	104			23.0-141	%	1	10/7/2012 17:43
Toluene d8	104			57.0-134	%	1	10/7/2012 17:43

Batch Information

Analytical Batch: **VMS2615**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**

Prep Batch: **VXX4102**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/01/2012 11:05**
Prep Initial Wt./Vol.: **6.48 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-9**

Client Sample ID: **B-9**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135009-E
Lab Project ID: 31203135

Collection Date: 09/26/2012 14:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 78.30

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.78	3.78	mg/kg	1	10/8/2012 20:06
Surrogates							
4-Bromofluorobenzene	117			70.0-130	%	1	10/8/2012 20:06

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 11:05**
Prep Initial Wt./Vol.: **6.75 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-9**

Client Sample ID: **B-9**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135009-F
Lab Project ID: 31203135

Collection Date: 09/26/2012 14:15
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 78.30

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	7.76	7.76	mg/kg	1	10/5/2012 2:07
Surrogates							
o-Terphenyl	92.1			40.0-140	%	1	10/5/2012 2:07

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Prep Initial Wt./Vol.: **32.93 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-10**

Client Sample ID: **B-10**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135010-A
Lab Project ID: 31203135

Collection Date: 09/26/2012 15:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 85.70

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.492	5.00	ug/Kg	1	10/7/2012 18:08
1,1,1-Trichloroethane	ND	U	0.422	5.00	ug/Kg	1	10/7/2012 18:08
1,1,2,2-Tetrachloroethane	ND	U	0.820	5.00	ug/Kg	1	10/7/2012 18:08
1,1,2-Trichloroethane	ND	U	0.606	5.00	ug/Kg	1	10/7/2012 18:08
1,1-Dichloroethane	ND	U	0.588	5.00	ug/Kg	1	10/7/2012 18:08
1,1-Dichloroethene	ND	U	2.98	5.00	ug/Kg	1	10/7/2012 18:08
1,1-Dichloropropene	ND	U	0.480	5.00	ug/Kg	1	10/7/2012 18:08
1,2,3-Trichlorobenzene	ND	U	0.416	5.00	ug/Kg	1	10/7/2012 18:08
1,2,3-Trichloropropane	ND	U	0.621	5.00	ug/Kg	1	10/7/2012 18:08
1,2,4-Trichlorobenzene	ND	U	0.408	5.00	ug/Kg	1	10/7/2012 18:08
1,2,4-Trimethylbenzene	ND	U	0.481	5.00	ug/Kg	1	10/7/2012 18:08
1,2-Dibromo-3-chloropropane	ND	U	6.38	30.0	ug/Kg	1	10/7/2012 18:08
1,2-Dibromoethane	ND	U	0.560	5.00	ug/Kg	1	10/7/2012 18:08
1,2-Dichlorobenzene	ND	U	0.664	5.00	ug/Kg	1	10/7/2012 18:08
1,2-Dichloroethane	ND	U	0.819	5.00	ug/Kg	1	10/7/2012 18:08
1,2-Dichloropropane	ND	U	0.460	5.00	ug/Kg	1	10/7/2012 18:08
1,3,5-Trimethylbenzene	ND	U	0.817	5.00	ug/Kg	1	10/7/2012 18:08
1,3-Dichlorobenzene	ND	U	0.380	5.00	ug/Kg	1	10/7/2012 18:08
1,3-Dichloropropane	ND	U	0.678	5.00	ug/Kg	1	10/7/2012 18:08
1,4-Dichlorobenzene	ND	U	0.491	5.00	ug/Kg	1	10/7/2012 18:08
2,2-Dichloropropane	ND	U	0.477	5.00	ug/Kg	1	10/7/2012 18:08
2-Butanone	**5.92**	J	2.68	25.0	ug/Kg	1	10/7/2012 18:08
2-Chlorotoluene	ND	U	0.687	5.00	ug/Kg	1	10/7/2012 18:08
2-Hexanone	ND	U	2.81	12.5	ug/Kg	1	10/7/2012 18:08
4-Chlorotoluene	ND	U	0.479	5.00	ug/Kg	1	10/7/2012 18:08
4-Isopropyltoluene	ND	U	0.563	5.00	ug/Kg	1	10/7/2012 18:08
4-Methyl-2-pentanone	ND	U	2.07	12.5	ug/Kg	1	10/7/2012 18:08
Acetone	**22.8**	J	3.74	50.0	ug/Kg	1	10/7/2012 18:08
Benzene	ND	U	0.388	5.00	ug/Kg	1	10/7/2012 18:08
Bromobenzene	ND	U	0.933	5.00	ug/Kg	1	10/7/2012 18:08
Bromochloromethane	ND	U	1.47	5.00	ug/Kg	1	10/7/2012 18:08
Bromodichloromethane	ND	U	0.680	5.00	ug/Kg	1	10/7/2012 18:08
Bromoform	ND	U	2.29	5.00	ug/Kg	1	10/7/2012 18:08
Bromomethane	ND	U	1.71	5.00	ug/Kg	1	10/7/2012 18:08
n-Butylbenzene	ND	U	0.423	5.00	ug/Kg	1	10/7/2012 18:08
Carbon disulfide	**1.55**	J	0.820	5.00	ug/Kg	1	10/7/2012 18:08
Carbon tetrachloride	ND	U	0.560	5.00	ug/Kg	1	10/7/2012 18:08
Chlorobenzene	ND	U	0.487	5.00	ug/Kg	1	10/7/2012 18:08
Chloroethane	ND	U	1.23	5.00	ug/Kg	1	10/7/2012 18:08
Chloroform	ND	U	0.515	5.00	ug/Kg	1	10/7/2012 18:08
Chloromethane	ND	U	0.646	5.00	ug/Kg	1	10/7/2012 18:08
Dibromochloromethane	ND	U	0.811	5.00	ug/Kg	1	10/7/2012 18:08
Dibromomethane	ND	U	0.580	5.00	ug/Kg	1	10/7/2012 18:08

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-10**

Client Sample ID: **B-10**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135010-A
Lab Project ID: 31203135

Collection Date: 09/26/2012 15:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 85.70

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND	U	0.749	5.00	ug/Kg	1	10/7/2012 18:08
cis-1,3-Dichloropropene	ND	U	0.501	5.00	ug/Kg	1	10/7/2012 18:08
trans-1,3-Dichloropropene	ND	U	0.533	5.00	ug/Kg	1	10/7/2012 18:08
Diisopropyl Ether	ND	U	0.681	5.00	ug/Kg	1	10/7/2012 18:08
Ethyl Benzene	ND	U	0.442	5.00	ug/Kg	1	10/7/2012 18:08
Hexachlorobutadiene	ND	U	0.592	5.00	ug/Kg	1	10/7/2012 18:08
Isopropylbenzene (Cumene)	ND	U	0.374	5.00	ug/Kg	1	10/7/2012 18:08
Methyl iodide	ND	U	0.537	5.00	ug/Kg	1	10/7/2012 18:08
Methylene chloride	ND	U	0.904	20.0	ug/Kg	1	10/7/2012 18:08
Naphthalene	ND	U	0.632	5.00	ug/Kg	1	10/7/2012 18:08
Styrene	ND	U	0.533	5.00	ug/Kg	1	10/7/2012 18:08
Tetrachloroethene	ND	U	0.580	5.00	ug/Kg	1	10/7/2012 18:08
Toluene	ND	U	0.694	5.00	ug/Kg	1	10/7/2012 18:08
Trichloroethene	ND	U	0.643	5.00	ug/Kg	1	10/7/2012 18:08
Trichlorofluoromethane	ND	U	0.569	5.00	ug/Kg	1	10/7/2012 18:08
Vinyl chloride	ND	U	0.793	5.00	ug/Kg	1	10/7/2012 18:08
Xylene (total)	ND	U	1.77	9.99	ug/Kg	1	10/7/2012 18:08
cis-1,2-Dichloroethene	ND	U	0.669	5.00	ug/Kg	1	10/7/2012 18:08
m,p-Xylene	ND	U	0.780	9.99	ug/Kg	1	10/7/2012 18:08
n-Propylbenzene	ND	U	0.485	5.00	ug/Kg	1	10/7/2012 18:08
o-Xylene	ND	U	0.713	5.00	ug/Kg	1	10/7/2012 18:08
sec-Butylbenzene	ND	U	0.486	5.00	ug/Kg	1	10/7/2012 18:08
tert-Butyl methyl ether (MTBE)	ND	U	0.689	5.00	ug/Kg	1	10/7/2012 18:08
tert-Butylbenzene	ND	U	0.393	5.00	ug/Kg	1	10/7/2012 18:08
trans-1,2-Dichloroethene	ND	U	0.770	5.00	ug/Kg	1	10/7/2012 18:08
trans-1,4-Dichloro-2-butene	ND	U	5.87	25.0	ug/Kg	1	10/7/2012 18:08
Surrogates							
1,2-Dichloroethane-d4	119			55.0-173	%	1	10/7/2012 18:08
4-Bromofluorobenzene	103			23.0-141	%	1	10/7/2012 18:08
Toluene d8	104			57.0-134	%	1	10/7/2012 18:08

Batch Information

Analytical Batch: **VMS2615**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**

Prep Batch: **VXX4102**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/01/2012 11:07**
Prep Initial Wt./Vol.: **5.84 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-10**

Client Sample ID: **B-10**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135010-E
Lab Project ID: 31203135

Collection Date: 09/26/2012 15:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 85.70

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND	U	3.71	3.71	mg/kg	1	10/8/2012 20:32
Surrogates							
4-Bromofluorobenzene	106			70.0-130	%	1	10/8/2012 20:32

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/01/2012 11:07**
Prep Initial Wt./Vol.: **6.29 g**
Prep Extract Vol: **5 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Results of **B-10**

Client Sample ID: **B-10**
Client Project ID: **NCDOT Fayetteville Loop**
Lab Sample ID: 31203135010-F
Lab Project ID: 31203135

Collection Date: 09/26/2012 15:00
Received Date: 09/28/2012 08:00
Matrix: Soil-Solid as dry weight
Solids (%): 85.70

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**12.2**		7.24	7.24	mg/kg	1	10/5/2012 2:35
Surrogates							
o-Terphenyl	84.1			40.0-140	%	1	10/5/2012 2:35

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Prep Initial Wt./Vol.: **32.23 g**
Prep Extract Vol: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SW-846 8260B

Prep Method: SW-846 5035 SL
Prep Batch: VXX4093
Prep Date: 10/04/2012 08:51

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS-S for HBN 30057 [VXX/4093]	92795	10/04/2012 10:05	VMS2611	MSD9	DVO
LCSD-S for HBN 30057 [VXX/4093	92796	10/04/2012 10:32	VMS2611	MSD9	DVO
MB-S for HBN 30057 [VXX/4093]	92797	10/04/2012 11:51	VMS2611	MSD9	DVO
B-5	31203135005	10/04/2012 17:10	VMS2611	MSD9	DVO

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB-S for HBN 30057 [VXX/4093]
Blank Lab ID: 92797
QC for Samples:
31203135005

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Dichlorodifluoromethane	ND	U	1.05	5.00	ug/Kg	1
Chloromethane	ND	U	1.43	5.00	ug/Kg	1
Vinyl chloride	ND	U	0.950	5.00	ug/Kg	1
Bromomethane	ND	U	1.45	5.00	ug/Kg	1
Chloroethane	ND	U	1.00	5.00	ug/Kg	1
Trichlorofluoromethane	ND	U	1.01	5.00	ug/Kg	1
1,1-Dichloroethene	ND	U	1.16	5.00	ug/Kg	1
Acetone	ND	U	4.01	50.0	ug/Kg	1
Methylene chloride	ND	U	1.05	20.0	ug/Kg	1
trans-1,2-Dichloroethene	ND	U	0.730	5.00	ug/Kg	1
tert-Butyl methyl ether (MTBE)	ND	U	0.795	5.00	ug/Kg	1
1,1-Dichloroethane	ND	U	0.538	5.00	ug/Kg	1
Diisopropyl Ether	ND	U	0.821	5.00	ug/Kg	1
2,2-Dichloropropane	ND	U	0.738	5.00	ug/Kg	1
cis-1,2-Dichloroethene	ND	U	0.611	5.00	ug/Kg	1
2-Butanone	ND	U	3.38	25.0	ug/Kg	1
Bromochloromethane	ND	U	0.940	5.00	ug/Kg	1
Chloroform	ND	U	0.637	5.00	ug/Kg	1
1,1,1-Trichloroethane	ND	U	0.754	5.00	ug/Kg	1
Carbon tetrachloride	ND	U	0.569	5.00	ug/Kg	1
1,1-Dichloropropene	ND	U	0.676	5.00	ug/Kg	1
Benzene	ND	U	0.711	5.00	ug/Kg	1
1,2-Dichloroethane	ND	U	0.913	5.00	ug/Kg	1
Trichloroethene	ND	U	0.842	5.00	ug/Kg	1
1,2-Dichloropropane	ND	U	1.15	5.00	ug/Kg	1
Dibromomethane	ND	U	0.882	5.00	ug/Kg	1
Bromodichloromethane	ND	U	0.704	5.00	ug/Kg	1
cis-1,3-Dichloropropene	ND	U	1.03	5.00	ug/Kg	1
4-Methyl-2-pentanone	ND	U	3.74	12.5	ug/Kg	1
Toluene	ND	U	0.688	5.00	ug/Kg	1
Methyl iodide	ND	U	0.766	5.00	ug/Kg	1
trans-1,3-Dichloropropene	ND	U	0.944	5.00	ug/Kg	1
Carbon disulfide	ND	U	0.523	5.00	ug/Kg	1
1,1,2-Trichloroethane	ND	U	1.04	5.00	ug/Kg	1
Tetrachloroethene	ND	U	0.751	5.00	ug/Kg	1
1,3-Dichloropropane	ND	U	0.879	5.00	ug/Kg	1
2-Hexanone	ND	U	3.22	12.5	ug/Kg	1
Dibromochloromethane	ND	U	1.11	5.00	ug/Kg	1
1,2-Dibromoethane	ND	U	1.31	5.00	ug/Kg	1
Chlorobenzene	ND	U	0.698	5.00	ug/Kg	1
1,1,1,2-Tetrachloroethane	ND	U	0.709	5.00	ug/Kg	1

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB-S for HBN 30057 [VXX/4093]
Blank Lab ID: 92797
QC for Samples:
31203135005

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Bromoform	ND	U	0.724	5.00	ug/Kg	1
Bromobenzene	ND	U	0.697	5.00	ug/Kg	1
1,1,2,2-Tetrachloroethane	ND	U	1.17	5.00	ug/Kg	1
1,2,3-Trichloropropane	ND	U	1.03	5.00	ug/Kg	1
Ethyl Benzene	ND	U	0.705	5.00	ug/Kg	1
m,p-Xylene	ND	U	1.69	10.0	ug/Kg	1
Styrene	ND	U	0.576	5.00	ug/Kg	1
o-Xylene	ND	U	0.766	5.00	ug/Kg	1
Xylene (total)	ND	U	1.77	10.0	ug/Kg	1
Isopropylbenzene (Cumene)	ND	U	0.622	5.00	ug/Kg	1
n-Propylbenzene	ND	U	0.732	5.00	ug/Kg	1
2-Chlorotoluene	ND	U	0.937	5.00	ug/Kg	1
4-Chlorotoluene	ND	U	0.756	5.00	ug/Kg	1
1,3,5-Trimethylbenzene	ND	U	0.608	5.00	ug/Kg	1
tert-Butylbenzene	ND	U	0.673	5.00	ug/Kg	1
1,2,4-Trimethylbenzene	ND	U	0.637	5.00	ug/Kg	1
sec-Butylbenzene	ND	U	0.600	5.00	ug/Kg	1
1,3-Dichlorobenzene	ND	U	0.719	5.00	ug/Kg	1
4-Isopropyltoluene	ND	U	0.645	5.00	ug/Kg	1
1,4-Dichlorobenzene	ND	U	0.675	5.00	ug/Kg	1
1,2-Dichlorobenzene	ND	U	0.711	5.00	ug/Kg	1
n-Butylbenzene	ND	U	0.657	5.00	ug/Kg	1
1,2-Dibromo-3-chloropropane	ND	U	7.41	30.0	ug/Kg	1
1,2,4-Trichlorobenzene	ND	U	0.729	5.00	ug/Kg	1
Hexachlorobutadiene	ND	U	0.687	5.00	ug/Kg	1
Naphthalene	ND	U	0.909	5.00	ug/Kg	1
trans-1,4-Dichloro-2-butene	ND	U	4.20	25.0	ug/Kg	1
1,2,3-Trichlorobenzene	ND	U	0.832	5.00	ug/Kg	1
Surrogates						
1,2-Dichloroethane-d4	112			55.0-173	%	1
Toluene d8	104			57.0-134	%	1
4-Bromofluorobenzene	98.0			23.0-141	%	1

Batch Information

Analytical Batch: VMS2611
Analytical Method: SW-846 8260B
Instrument: MSD9
Analyst: DVO

Prep Batch: VXX4093
Prep Method: SW-846 5035 SL
Prep Date/Time: 10/4/2012 8:51:26AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30057 [VXX/4093]
Blank Spike Lab ID: 92795
Date Analyzed: 10/04/2012 10:05

Spike Duplicate ID: LCSD-S for HBN 30057 [VXX/4093
Spike Duplicate Lab ID: 92796
Date Analyzed: 10/04/2012 10:32
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135005

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Dichlorodifluoromethane	30.0	25.6	85	30.0	28.1	94	52.0-133	9.3	30.00
Chloromethane	30.0	29.1	97	30.0	28.0	93	64.0-126	3.9	30.00
Vinyl chloride	30.0	25.4	85	30.0	27.3	91	69.0-120	7.2	30.00
Bromomethane	30.0	28.6	95	30.0	32.0	107	41.0-160	11	30.00
Chloroethane	30.0	26.2	87	30.0	27.7	92	69.0-126	5.6	30.00
Trichlorofluoromethane	30.0	25.6	85	30.0	27.6	92	72.0-123	7.5	30.00
1,1-Dichloroethene	30.0	28.8	96	30.0	28.4	95	78.0-113	1.4	30.00
Acetone	75.0	48.8	65	75.0	46.2	62	0.00-243	5.5	30.00
Methylene chloride	30.0	26.8	89	30.0	26.5	88	40.0-156	1.1	30.00
trans-1,2-Dichloroethene	30.0	29.9	100	30.0	29.7	99	78.0-111	0.67	30.00
tert-Butyl methyl ether (MTBE)	30.0	31.3	104	30.0	29.4	98	68.0-138	6.3	30.00
1,1-Dichloroethane	30.0	29.2	97	30.0	28.6	95	71.0-121	2.1	30.00
Diisopropyl Ether	30.0	30.1	100	30.0	29.2	97	60.0-141	3.0	30.00
2,2-Dichloropropane	30.0	32.3	108	30.0	31.0	103	79.0-127	4.1	30.00
cis-1,2-Dichloroethene	30.0	29.8	99	30.0	29.3	98	80.0-114	1.7	30.00
2-Butanone	75.0	58.2	78	75.0	54.3	72	31.0-189	6.9	30.00
Bromochloromethane	30.0	31.7	106	30.0	31.0	103	81.0-115	2.2	30.00
Chloroform	30.0	30.1	100	30.0	29.1	97	76.0-114	3.4	30.00
1,1,1-Trichloroethane	30.0	30.3	101	30.0	29.0	97	79.0-117	4.4	30.00
Carbon tetrachloride	30.0	29.5	98	30.0	28.3	94	82.0-119	4.2	30.00
1,1-Dichloropropene	30.0	29.7	99	30.0	29.7	99	82.0-114	0.0	30.00
Benzene	30.0	29.8	99	30.0	29.1	97	82.0-113	2.4	30.00
1,2-Dichloroethane	30.0	31.2	104	30.0	29.6	99	72.0-126	5.3	30.00
Trichloroethene	30.0	29.5	98	30.0	28.2	94	82.0-108	4.5	30.00
1,2-Dichloropropane	30.0	29.7	99	30.0	29.0	97	78.0-116	2.4	30.00
Dibromomethane	30.0	30.8	103	30.0	29.7	99	79.0-125	3.6	30.00
Bromodichloromethane	30.0	29.4	98	30.0	28.4	95	79.0-122	3.5	30.00
cis-1,3-Dichloropropene	30.0	29.7	99	30.0	28.4	95	75.0-127	4.5	30.00
4-Methyl-2-pentanone	75.0	86.9	116	75.0	79.6	106	57.0-159	8.8	30.00
Toluene	30.0	30.6	102	30.0	30.2	101	83.0-111	1.3	30.00
Methyl iodide	30.0	30.7	102	30.0	32.3	108	63.0-137	5.1	30.00
trans-1,3-Dichloropropene	30.0	31.6	105	30.0	29.4	98	75.0-134	7.2	30.00
Carbon disulfide	30.0	31.9	106	30.0	31.0	103	72.0-116	2.9	30.00
1,1,2-Trichloroethane	30.0	31.2	104	30.0	29.4	98	73.0-121	5.9	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30057 [VXX/4093]
Blank Spike Lab ID: 92795
Date Analyzed: 10/04/2012 10:05

Spike Duplicate ID: LCSD-S for HBN 30057 [VXX/4093
Spike Duplicate Lab ID: 92796
Date Analyzed: 10/04/2012 10:32
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135005

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Tetrachloroethene	30.0	29.5	98	30.0	28.8	96	60.0-118	2.4	30.00
1,3-Dichloropropane	30.0	31.1	104	30.0	29.4	98	76.0-121	5.6	30.00
2-Hexanone	75.0	65.9	88	75.0	60.3	80	41.0-171	8.9	30.00
Dibromochloromethane	30.0	29.5	98	30.0	27.3	91	77.0-126	7.7	30.00
1,2-Dibromoethane	30.0	32.4	108	30.0	29.9	100	76.0-125	8.0	30.00
Chlorobenzene	30.0	29.7	99	30.0	28.6	95	78.0-109	3.8	30.00
1,1,1,2-Tetrachloroethane	30.0	30.9	103	30.0	29.0	97	81.0-117	6.3	30.00
Bromoform	30.0	31.3	104	30.0	28.6	95	72.0-134	9.0	30.00
Bromobenzene	30.0	30.2	101	30.0	28.9	96	76.0-113	4.4	30.00
1,1,2,2-Tetrachloroethane	30.0	34.3	114	30.0	30.9	103	76.0-129	10	30.00
1,2,3-Trichloropropane	30.0	34.4	115	30.0	30.4	101	70.0-145	12	30.00
Ethyl Benzene	30.0	28.4	95	30.0	28.2	94	72.0-115	0.71	30.00
m,p-Xylene	60.0	58.3	97	60.0	57.1	95	73.0-114	2.1	30.00
Styrene	30.0	28.6	95	30.0	28.5	95	74.0-114	0.35	30.00
o-Xylene	30.0	29.4	98	30.0	28.9	96	74.0-113	1.7	30.00
Isopropylbenzene (Cumene)	30.0	29.2	97	30.0	28.8	96	72.0-115	1.4	30.00
n-Propylbenzene	30.0	29.8	99	30.0	29.3	98	71.0-117	1.7	30.00
2-Chlorotoluene	30.0	29.7	99	30.0	29.1	97	76.0-111	2.0	30.00
4-Chlorotoluene	30.0	29.0	97	30.0	28.3	94	75.0-113	2.4	30.00
1,3,5-Trimethylbenzene	30.0	30.0	100	30.0	29.1	97	72.0-115	3.0	30.00
tert-Butylbenzene	30.0	29.5	98	30.0	28.8	96	74.0-112	2.4	30.00
1,2,4-Trimethylbenzene	30.0	30.4	101	30.0	29.3	98	73.0-114	3.7	30.00
sec-Butylbenzene	30.0	29.2	97	30.0	28.6	95	72.0-115	2.1	30.00
1,3-Dichlorobenzene	30.0	29.5	98	30.0	28.6	95	75.0-110	3.1	30.00
4-Isopropyltoluene	30.0	29.7	99	30.0	29.3	98	73.0-114	1.4	30.00
1,4-Dichlorobenzene	30.0	29.8	99	30.0	29.1	97	76.0-110	2.4	30.00
1,2-Dichlorobenzene	30.0	29.9	100	30.0	29.1	97	77.0-109	2.7	30.00
n-Butylbenzene	30.0	30.2	101	30.0	29.6	99	72.0-118	2.0	30.00
1,2-Dibromo-3-chloropropane	180	203	113	180	186	103	54.0-166	8.7	30.00
1,2,4-Trichlorobenzene	30.0	31.0	103	30.0	29.9	100	76.0-115	3.6	30.00
Hexachlorobutadiene	30.0	28.9	96	30.0	28.9	96	70.0-111	0.0	30.00
Naphthalene	30.0	33.0	110	30.0	30.9	103	71.0-129	6.6	30.00
trans-1,4-Dichloro-2-butene	150	166	111	150	153	102	62.0-164	8.2	30.00
1,2,3-Trichlorobenzene	30.0	30.3	101	30.0	28.8	96	78.0-115	5.1	30.00

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30057 [VXX/4093]
Blank Spike Lab ID: 92795
Date Analyzed: 10/04/2012 10:05

Spike Duplicate ID: LCSD-S for HBN 30057 [VXX/4093
Spike Duplicate Lab ID: 92796
Date Analyzed: 10/04/2012 10:32
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135005

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-d4			109			106	55.0-173		
Toluene d8			103			103	57.0-134		
4-Bromofluorobenzene			103			100	23.0-141		

Batch Information

Analytical Batch: **VMS2611**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX4093**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/04/2012 08:51**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8260B

Prep Method: SW-846 5035 SM
Prep Batch: VXX4097
Prep Date: 10/03/2012 08:00

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS-S for HBN 30087 [VXX/4097]	92948	10/03/2012 09:26	VMS2606	MSD4	DVO
LCSD-S for HBN 30087 [VXX/4097	92949	10/03/2012 09:50	VMS2606	MSD4	DVO
MB-S for HBN 30087 [VXX/4097]	92947	10/03/2012 11:28	VMS2606	MSD4	DVO
B-4	31203135004	10/03/2012 18:22	VMS2606	MSD4	DVO
B-1	31203135001	10/03/2012 18:46	VMS2606	MSD4	DVO
B-3	31203135003	10/03/2012 19:10	VMS2606	MSD4	DVO
B-2	31203135002	10/03/2012 19:35	VMS2606	MSD4	DVO

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com

Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB-S for HBN 30087 [VXX/4097]
Blank Lab ID: 92947
QC for Samples:
31203135001, 31203135002, 31203135003, 31203135004

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Dichlorodifluoromethane	ND	U	8.55	250	ug/Kg	50
Chloromethane	ND	U	22.4	50.0	ug/Kg	50
Vinyl chloride	ND	U	6.20	50.0	ug/Kg	50
Bromomethane	ND	U	11.9	50.0	ug/Kg	50
Chloroethane	ND	U	15.6	50.0	ug/Kg	50
Trichlorofluoromethane	ND	U	6.85	50.0	ug/Kg	50
1,1-Dichloroethene	ND	U	10.6	50.0	ug/Kg	50
Acetone	ND	U	43.2	1250	ug/Kg	50
Methylene chloride	**23.0**	J	7.60	250	ug/Kg	50
trans-1,2-Dichloroethene	ND	U	11.2	50.0	ug/Kg	50
tert-Butyl methyl ether (MTBE)	ND	U	7.20	50.0	ug/Kg	50
1,1-Dichloroethane	ND	U	8.25	50.0	ug/Kg	50
Diisopropyl Ether	ND	U	14.7	50.0	ug/Kg	50
2,2-Dichloropropane	ND	U	19.7	50.0	ug/Kg	50
cis-1,2-Dichloroethene	ND	U	6.80	50.0	ug/Kg	50
2-Butanone	ND	U	36.2	1250	ug/Kg	50
Bromochloromethane	ND	U	10.6	50.0	ug/Kg	50
Chloroform	ND	U	6.95	50.0	ug/Kg	50
1,1,1-Trichloroethane	ND	U	6.15	50.0	ug/Kg	50
Carbon tetrachloride	ND	U	5.05	50.0	ug/Kg	50
1,1-Dichloropropene	ND	U	4.32	50.0	ug/Kg	50
Benzene	ND	U	5.65	50.0	ug/Kg	50
1,2-Dichloroethane	ND	U	8.35	50.0	ug/Kg	50
Trichloroethene	ND	U	6.25	50.0	ug/Kg	50
1,2-Dichloropropane	ND	U	8.15	50.0	ug/Kg	50
Dibromomethane	ND	U	8.40	50.0	ug/Kg	50
Bromodichloromethane	ND	U	5.50	50.0	ug/Kg	50
cis-1,3-Dichloropropene	ND	U	3.84	50.0	ug/Kg	50
4-Methyl-2-pentanone	ND	U	27.9	250	ug/Kg	50
Toluene	ND	U	6.65	50.0	ug/Kg	50
Methyl iodide	ND	U	5.75	50.0	ug/Kg	50
trans-1,3-Dichloropropene	ND	U	4.31	50.0	ug/Kg	50
Carbon disulfide	ND	U	5.30	50.0	ug/Kg	50
1,1,2-Trichloroethane	ND	U	6.30	50.0	ug/Kg	50
Tetrachloroethene	ND	U	7.75	50.0	ug/Kg	50
1,3-Dichloropropane	ND	U	6.50	50.0	ug/Kg	50
2-Hexanone	ND	U	36.4	250	ug/Kg	50
Dibromochloromethane	ND	U	6.70	50.0	ug/Kg	50
1,2-Dibromoethane	ND	U	6.00	50.0	ug/Kg	50
Chlorobenzene	ND	U	5.80	50.0	ug/Kg	50
1,1,1,2-Tetrachloroethane	ND	U	5.20	50.0	ug/Kg	50

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB-S for HBN 30087 [VXX/4097]
Blank Lab ID: 92947
QC for Samples:
31203135001, 31203135002, 31203135003, 31203135004

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Bromoform	ND	U	4.87	50.0	ug/Kg	50
Bromobenzene	ND	U	5.50	50.0	ug/Kg	50
1,1,2,2-Tetrachloroethane	ND	U	7.80	50.0	ug/Kg	50
1,2,3-Trichloropropane	ND	U	10.6	50.0	ug/Kg	50
Ethyl Benzene	ND	U	4.39	50.0	ug/Kg	50
m,p-Xylene	ND	U	9.10	100	ug/Kg	50
Styrene	ND	U	5.10	50.0	ug/Kg	50
o-Xylene	ND	U	4.37	50.0	ug/Kg	50
Xylene (total)	ND	U	9.10	100	ug/Kg	50
Isopropylbenzene (Cumene)	ND	U	4.35	50.0	ug/Kg	50
n-Propylbenzene	ND	U	5.65	50.0	ug/Kg	50
2-Chlorotoluene	ND	U	5.65	50.0	ug/Kg	50
4-Chlorotoluene	ND	U	6.25	50.0	ug/Kg	50
1,3,5-Trimethylbenzene	ND	U	5.65	50.0	ug/Kg	50
tert-Butylbenzene	ND	U	4.28	50.0	ug/Kg	50
1,2,4-Trimethylbenzene	ND	U	4.81	50.0	ug/Kg	50
sec-Butylbenzene	ND	U	5.60	50.0	ug/Kg	50
1,3-Dichlorobenzene	ND	U	5.15	50.0	ug/Kg	50
4-Isopropyltoluene	ND	U	3.85	50.0	ug/Kg	50
1,4-Dichlorobenzene	ND	U	6.50	50.0	ug/Kg	50
1,2-Dichlorobenzene	ND	U	6.85	50.0	ug/Kg	50
n-Butylbenzene	ND	U	3.85	50.0	ug/Kg	50
1,2-Dibromo-3-chloropropane	ND	U	37.4	250	ug/Kg	50
1,2,4-Trichlorobenzene	ND	U	4.57	50.0	ug/Kg	50
Hexachlorobutadiene	ND	U	3.96	50.0	ug/Kg	50
Naphthalene	ND	U	4.28	50.0	ug/Kg	50
trans-1,4-Dichloro-2-butene	ND	U	20.7	250	ug/Kg	50
1,2,3-Trichlorobenzene	ND	U	5.50	50.0	ug/Kg	50
Surrogates						
1,2-Dichloroethane-d4	103			55.0-173	%	50
Toluene d8	100			57.0-134	%	50
4-Bromofluorobenzene	91.0			23.0-141	%	50

Batch Information

Analytical Batch: VMS2606
Analytical Method: SW-846 8260B
Instrument: MSD4
Analyst: DVO

Prep Batch: VXX4097
Prep Method: SW-846 5035 SM
Prep Date/Time: 10/3/2012 8:00:00AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30087 [VXX/4097]
Blank Spike Lab ID: 92948
Date Analyzed: 10/03/2012 09:26

Spike Duplicate ID: LCSD-S for HBN 30087 [VXX/4097
Spike Duplicate Lab ID: 92949
Date Analyzed: 10/03/2012 09:50
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135001, 31203135002, 31203135003, 31203135004

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Dichlorodifluoromethane	250	227	91	250	271	108	70.0-130	18	30.00
Chloromethane	250	220	88	250	258	103	70.0-130	16	30.00
Vinyl chloride	250	204	82	250	252	101	70.0-130	21	30.00
Bromomethane	250	263	105	250	298	119	70.0-130	12	30.00
Chloroethane	250	243	97	250	308	123	70.0-130	24	30.00
Trichlorofluoromethane	250	225	90	250	274	110	70.0-130	20	30.00
1,1-Dichloroethene	250	229	92	250	244	97	70.0-130	6.3	30.00
Acetone	1250	942	75	1250	1030	82	70.0-130	8.9	30.00
Methylene chloride	250	243	97	250	257	103	70.0-130	5.6	30.00
trans-1,2-Dichloroethene	250	234	94	250	245	98	70.0-130	4.6	30.00
tert-Butyl methyl ether (MTBE)	250	230	92	250	246	98	70.0-130	6.7	30.00
1,1-Dichloroethane	250	227	91	250	241	96	70.0-130	6.0	30.00
Diisopropyl Ether	250	228	91	250	245	98	70.0-130	7.2	30.00
2,2-Dichloropropane	250	259	104	250	268	107	70.0-130	3.4	30.00
cis-1,2-Dichloroethene	250	228	91	250	234	93	70.0-130	2.6	30.00
2-Butanone	1250	1010	81	1250	1080	86	70.0-130	6.7	30.00
Bromochloromethane	250	241	96	250	253	101	70.0-130	4.9	30.00
Chloroform	250	227	91	250	239	95	70.0-130	5.2	30.00
1,1,1-Trichloroethane	250	236	94	250	250	100	70.0-130	5.8	30.00
Carbon tetrachloride	250	240	96	250	255	102	70.0-130	6.1	30.00
1,1-Dichloropropene	250	228	91	250	236	94	70.0-130	3.4	30.00
Benzene	250	226	90	250	237	95	70.0-130	4.8	30.00
1,2-Dichloroethane	250	231	92	250	243	97	70.0-130	5.1	30.00
Trichloroethene	250	224	89	250	231	92	70.0-130	3.1	30.00
1,2-Dichloropropane	250	223	89	250	235	94	70.0-130	5.2	30.00
Dibromomethane	250	223	89	250	238	95	70.0-130	6.5	30.00
Bromodichloromethane	250	229	91	250	234	93	70.0-130	2.2	30.00
cis-1,3-Dichloropropene	250	221	88	250	235	94	70.0-130	6.1	30.00
4-Methyl-2-pentanone	1250	1170	94	1250	1280	102	70.0-130	9.0	30.00
Toluene	250	241	96	250	251	100	70.0-130	4.1	30.00
Methyl iodide	250	213	85	250	246	98	70.0-130	14	30.00
trans-1,3-Dichloropropene	250	212	85	250	222	89	70.0-130	4.6	30.00
Carbon disulfide	250	242	97	250	261	104	70.0-130	7.6	30.00
1,1,2-Trichloroethane	250	224	90	250	241	96	70.0-130	7.3	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30087 [VXX/4097]
Blank Spike Lab ID: 92948
Date Analyzed: 10/03/2012 09:26

Spike Duplicate ID: LCSD-S for HBN 30087 [VXX/4097
Spike Duplicate Lab ID: 92949
Date Analyzed: 10/03/2012 09:50
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135001, 31203135002, 31203135003, 31203135004

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Tetrachloroethene	250	222	89	250	232	93	70.0-130	4.4	30.00
1,3-Dichloropropane	250	225	90	250	241	96	70.0-130	6.9	30.00
2-Hexanone	1250	1020	82	1250	1120	89	70.0-130	9.3	30.00
Dibromochloromethane	250	207	83	250	216	86	70.0-130	4.3	30.00
1,2-Dibromoethane	250	229	92	250	240	96	70.0-130	4.7	30.00
Chlorobenzene	250	220	88	250	235	94	70.0-130	6.6	30.00
1,1,1,2-Tetrachloroethane	250	218	87	250	224	89	70.0-130	2.7	30.00
Bromoform	250	207	83	250	219	87	70.0-130	5.6	30.00
Bromobenzene	250	214	86	250	233	93	70.0-130	8.5	30.00
1,1,2,2-Tetrachloroethane	250	220	88	250	237	95	70.0-130	7.4	30.00
1,2,3-Trichloropropane	250	214	86	250	225	90	70.0-130	5.0	30.00
Ethyl Benzene	250	214	86	250	229	91	70.0-130	6.8	30.00
m,p-Xylene	500	441	88	500	473	95	70.0-130	7.0	30.00
Styrene	250	214	86	250	232	93	70.0-130	8.1	30.00
o-Xylene	250	214	85	250	237	95	70.0-130	10	30.00
Isopropylbenzene (Cumene)	250	221	88	250	238	95	70.0-130	7.4	30.00
n-Propylbenzene	250	219	87	250	235	94	70.0-130	7.0	30.00
2-Chlorotoluene	250	218	87	250	231	92	70.0-130	5.8	30.00
4-Chlorotoluene	250	207	83	250	221	88	70.0-130	6.5	30.00
1,3,5-Trimethylbenzene	250	220	88	250	236	94	70.0-130	7.0	30.00
tert-Butylbenzene	250	216	86	250	229	92	70.0-130	5.8	30.00
1,2,4-Trimethylbenzene	250	220	88	250	234	94	70.0-130	6.2	30.00
sec-Butylbenzene	250	217	87	250	234	94	70.0-130	7.5	30.00
1,3-Dichlorobenzene	250	209	84	250	225	90	70.0-130	7.4	30.00
4-Isopropyltoluene	250	215	86	250	230	92	70.0-130	6.7	30.00
1,4-Dichlorobenzene	250	210	84	250	225	90	70.0-130	6.9	30.00
1,2-Dichlorobenzene	250	211	84	250	228	91	70.0-130	7.7	30.00
n-Butylbenzene	250	220	88	250	236	94	70.0-130	7.0	30.00
1,2-Dibromo-3-chloropropane	1500	1150	77	1500	1220	81	70.0-130	5.9	30.00
1,2,4-Trichlorobenzene	250	213	85	250	222	89	70.0-130	4.1	30.00
Hexachlorobutadiene	250	206	82	250	216	86	70.0-130	4.7	30.00
Naphthalene	250	215	86	250	227	91	70.0-130	5.4	30.00
trans-1,4-Dichloro-2-butene	1250	898	72	1250	931	74	70.0-130	3.6	30.00
1,2,3-Trichlorobenzene	250	203	81	250	213	85	70.0-130	4.8	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30087 [VXX/4097]
Blank Spike Lab ID: 92948
Date Analyzed: 10/03/2012 09:26

Spike Duplicate ID: LCSD-S for HBN 30087 [VXX/4097
Spike Duplicate Lab ID: 92949
Date Analyzed: 10/03/2012 09:50
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135001, 31203135002, 31203135003, 31203135004

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-d4			104			104	55.0-173		
Toluene d8			103			103	57.0-134		
4-Bromofluorobenzene			102			103	23.0-141		

Batch Information

Analytical Batch: **VMS2606**
Analytical Method: **SW-846 8260B**
Instrument: **MSD4**
Analyst: **DVO**

Prep Batch: **VXX4097**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/03/2012 08:00**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8260B

Prep Method: SW-846 5035 SL
Prep Batch: VXX4102
Prep Date: 10/07/2012 12:09

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS-S for HBN 30202 [VXX/4102]	93241	10/07/2012 13:27	VMS2615	MSD2	BWS
LCSD-S for HBN 30202 [VXX/4102	93242	10/07/2012 13:53	VMS2615	MSD2	BWS
MB-S for HBN 30202 [VXX/4102]	93243	10/07/2012 14:44	VMS2615	MSD2	BWS
B-7	31203135007	10/07/2012 17:17	VMS2615	MSD2	BWS
B-9	31203135009	10/07/2012 17:43	VMS2615	MSD2	BWS
B-10	31203135010	10/07/2012 18:08	VMS2615	MSD2	BWS
B-6	31203135006	10/07/2012 22:49	VMS2615	MSD2	BWS
SS-1(92865DUP)	93476	10/08/2012 00:05	VMS2615	MSD2	BWS

Method Blank

Blank ID: MB-S for HBN 30202 [VXX/4102]
Blank Lab ID: 93243
QC for Samples:
31203135006, 31203135007, 31203135009, 31203135010

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Dichlorodifluoromethane	ND	U	0.749	5.00	ug/Kg	1
Chloromethane	ND	U	0.646	5.00	ug/Kg	1
Vinyl chloride	ND	U	0.793	5.00	ug/Kg	1
Bromomethane	ND	U	1.71	5.00	ug/Kg	1
Chloroethane	ND	U	1.23	5.00	ug/Kg	1
Trichlorofluoromethane	ND	U	0.569	5.00	ug/Kg	1
1,1-Dichloroethene	ND	U	2.98	5.00	ug/Kg	1
Acetone	ND	U	3.74	50.0	ug/Kg	1
Methylene chloride	ND	U	0.904	20.0	ug/Kg	1
trans-1,2-Dichloroethene	ND	U	0.770	5.00	ug/Kg	1
tert-Butyl methyl ether (MTBE)	ND	U	0.689	5.00	ug/Kg	1
1,1-Dichloroethane	ND	U	0.588	5.00	ug/Kg	1
Diisopropyl Ether	ND	U	0.681	5.00	ug/Kg	1
2,2-Dichloropropane	ND	U	0.477	5.00	ug/Kg	1
cis-1,2-Dichloroethene	ND	U	0.669	5.00	ug/Kg	1
2-Butanone	ND	U	2.68	25.0	ug/Kg	1
Bromochloromethane	ND	U	1.47	5.00	ug/Kg	1
Chloroform	ND	U	0.515	5.00	ug/Kg	1
1,1,1-Trichloroethane	ND	U	0.422	5.00	ug/Kg	1
Carbon tetrachloride	ND	U	0.560	5.00	ug/Kg	1
1,1-Dichloropropene	ND	U	0.480	5.00	ug/Kg	1
Benzene	ND	U	0.388	5.00	ug/Kg	1
1,2-Dichloroethane	ND	U	0.819	5.00	ug/Kg	1
Trichloroethene	ND	U	0.643	5.00	ug/Kg	1
1,2-Dichloropropane	ND	U	0.460	5.00	ug/Kg	1
Dibromomethane	ND	U	0.580	5.00	ug/Kg	1
Bromodichloromethane	ND	U	0.680	5.00	ug/Kg	1
cis-1,3-Dichloropropene	ND	U	0.501	5.00	ug/Kg	1
4-Methyl-2-pentanone	ND	U	2.07	12.5	ug/Kg	1
Toluene	ND	U	0.694	5.00	ug/Kg	1
Methyl iodide	ND	U	0.537	5.00	ug/Kg	1
trans-1,3-Dichloropropene	ND	U	0.533	5.00	ug/Kg	1
Carbon disulfide	ND	U	0.820	5.00	ug/Kg	1
1,1,2-Trichloroethane	ND	U	0.606	5.00	ug/Kg	1
Tetrachloroethene	ND	U	0.580	5.00	ug/Kg	1
1,3-Dichloropropane	ND	U	0.678	5.00	ug/Kg	1
2-Hexanone	ND	U	2.81	12.5	ug/Kg	1
Dibromochloromethane	ND	U	0.811	5.00	ug/Kg	1
1,2-Dibromoethane	ND	U	0.560	5.00	ug/Kg	1
Chlorobenzene	ND	U	0.487	5.00	ug/Kg	1
1,1,1,2-Tetrachloroethane	ND	U	0.492	5.00	ug/Kg	1

Method Blank

Blank ID: MB-S for HBN 30202 [VXX/4102]
Blank Lab ID: 93243
QC for Samples:
31203135006, 31203135007, 31203135009, 31203135010

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Bromoform	ND	U	2.29	5.00	ug/Kg	1
Bromobenzene	ND	U	0.934	5.00	ug/Kg	1
1,1,2,2-Tetrachloroethane	ND	U	0.820	5.00	ug/Kg	1
1,2,3-Trichloropropane	ND	U	0.621	5.00	ug/Kg	1
Ethyl Benzene	ND	U	0.442	5.00	ug/Kg	1
m,p-Xylene	ND	U	0.780	10.0	ug/Kg	1
Styrene	ND	U	0.533	5.00	ug/Kg	1
o-Xylene	ND	U	0.713	5.00	ug/Kg	1
Xylene (total)	ND	U	1.77	10.0	ug/Kg	1
Isopropylbenzene (Cumene)	ND	U	0.374	5.00	ug/Kg	1
n-Propylbenzene	ND	U	0.485	5.00	ug/Kg	1
2-Chlorotoluene	ND	U	0.687	5.00	ug/Kg	1
4-Chlorotoluene	ND	U	0.479	5.00	ug/Kg	1
1,3,5-Trimethylbenzene	ND	U	0.817	5.00	ug/Kg	1
tert-Butylbenzene	ND	U	0.393	5.00	ug/Kg	1
1,2,4-Trimethylbenzene	ND	U	0.481	5.00	ug/Kg	1
sec-Butylbenzene	ND	U	0.486	5.00	ug/Kg	1
1,3-Dichlorobenzene	ND	U	0.380	5.00	ug/Kg	1
4-Isopropyltoluene	ND	U	0.563	5.00	ug/Kg	1
1,4-Dichlorobenzene	ND	U	0.491	5.00	ug/Kg	1
1,2-Dichlorobenzene	ND	U	0.664	5.00	ug/Kg	1
n-Butylbenzene	ND	U	0.423	5.00	ug/Kg	1
1,2-Dibromo-3-chloropropane	ND	U	6.38	30.0	ug/Kg	1
1,2,4-Trichlorobenzene	ND	U	0.408	5.00	ug/Kg	1
Hexachlorobutadiene	ND	U	0.592	5.00	ug/Kg	1
Naphthalene	ND	U	0.632	5.00	ug/Kg	1
trans-1,4-Dichloro-2-butene	ND	U	5.87	25.0	ug/Kg	1
1,2,3-Trichlorobenzene	ND	U	0.416	5.00	ug/Kg	1
Surrogates						
1,2-Dichloroethane-d4	105			55.0-173	%	1
Toluene d8	102			57.0-134	%	1
4-Bromofluorobenzene	100			23.0-141	%	1

Batch Information

Analytical Batch: VMS2615
Analytical Method: SW-846 8260B
Instrument: MSD2
Analyst: BWS

Prep Batch: VXX4102
Prep Method: SW-846 5035 SL
Prep Date/Time: 10/7/2012 12:09:44PM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30202 [VXX/4102]
Blank Spike Lab ID: 93241
Date Analyzed: 10/07/2012 13:27

Spike Duplicate ID: LCSD-S for HBN 30202 [VXX/4102
Spike Duplicate Lab ID: 93242
Date Analyzed: 10/07/2012 13:53
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135006, 31203135007, 31203135009, 31203135010

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Dichlorodifluoromethane	30.0	46.0	**153***	30.0	43.5	**145***	52.0-133	5.6	30.00
Chloromethane	30.0	38.7	**129***	30.0	35.8	119	64.0-126	7.8	30.00
Vinyl chloride	30.0	34.7	116	30.0	30.8	103	69.0-120	12	30.00
Bromomethane	30.0	33.7	112	30.0	33.8	113	41.0-160	0.30	30.00
Chloroethane	30.0	34.5	115	30.0	33.1	110	69.0-126	4.1	30.00
Trichlorofluoromethane	30.0	23.9	80	30.0	30.1	100	72.0-123	23	30.00
1,1-Dichloroethene	30.0	25.1	84	30.0	25.6	85	78.0-113	2.0	30.00
Acetone	75.0	34.0	45	75.0	37.1	49	0.00-243	8.7	30.00
Methylene chloride	30.0	27.3	91	30.0	28.3	94	40.0-156	3.6	30.00
trans-1,2-Dichloroethene	30.0	27.7	92	30.0	28.1	94	78.0-111	1.4	30.00
tert-Butyl methyl ether (MTBE)	30.0	26.3	88	30.0	28.4	95	68.0-138	7.7	30.00
1,1-Dichloroethane	30.0	27.2	91	30.0	28.0	93	71.0-121	2.9	30.00
Diisopropyl Ether	30.0	28.2	94	30.0	29.1	97	60.0-141	3.1	30.00
2,2-Dichloropropane	30.0	29.7	99	30.0	29.6	99	79.0-127	0.34	30.00
cis-1,2-Dichloroethene	30.0	28.5	95	30.0	29.2	97	80.0-114	2.4	30.00
2-Butanone	75.0	40.4	54	75.0	46.7	62	31.0-189	14	30.00
Bromochloromethane	30.0	25.9	86	30.0	27.2	91	81.0-115	4.9	30.00
Chloroform	30.0	27.5	92	30.0	28.4	95	76.0-114	3.2	30.00
1,1,1-Trichloroethane	30.0	28.3	94	30.0	28.2	94	79.0-117	0.35	30.00
Carbon tetrachloride	30.0	28.2	94	30.0	28.0	93	82.0-119	0.71	30.00
1,1-Dichloropropene	30.0	28.7	96	30.0	28.7	96	82.0-114	0.0	30.00
Benzene	30.0	28.7	96	30.0	29.1	97	82.0-113	1.4	30.00
1,2-Dichloroethane	30.0	27.0	90	30.0	28.6	95	72.0-126	5.8	30.00
Trichloroethene	30.0	28.3	94	30.0	28.5	95	82.0-108	0.70	30.00
1,2-Dichloropropane	30.0	28.1	94	30.0	28.4	95	78.0-116	1.1	30.00
Dibromomethane	30.0	25.1	84	30.0	27.4	91	79.0-125	8.8	30.00
Bromodichloromethane	30.0	27.3	91	30.0	28.3	94	79.0-122	3.6	30.00
cis-1,3-Dichloropropene	30.0	27.9	93	30.0	28.7	96	75.0-127	2.8	30.00
4-Methyl-2-pentanone	75.0	64.5	86	75.0	73.5	98	57.0-159	13	30.00
Toluene	30.0	29.3	98	30.0	29.8	99	83.0-111	1.7	30.00
Methyl iodide	30.0	18.4	**61***	30.0	19.3	64	63.0-137	4.8	30.00
trans-1,3-Dichloropropene	30.0	28.5	95	30.0	29.8	99	75.0-134	4.5	30.00
Carbon disulfide	30.0	29.9	100	30.0	30.2	101	72.0-116	1.0	30.00
1,1,2-Trichloroethane	30.0	28.3	94	30.0	29.1	97	73.0-121	2.8	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30202 [VXX/4102]
Blank Spike Lab ID: 93241
Date Analyzed: 10/07/2012 13:27

Spike Duplicate ID: LCSD-S for HBN 30202 [VXX/4102
Spike Duplicate Lab ID: 93242
Date Analyzed: 10/07/2012 13:53
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135006, 31203135007, 31203135009, 31203135010

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Tetrachloroethene	30.0	29.3	98	30.0	29.2	97	60.0-118	0.34	30.00
1,3-Dichloropropane	30.0	28.4	95	30.0	29.9	100	76.0-121	5.1	30.00
2-Hexanone	75.0	47.9	64	75.0	53.2	71	41.0-171	10	30.00
Dibromochloromethane	30.0	27.2	91	30.0	28.2	94	77.0-126	3.6	30.00
1,2-Dibromoethane	30.0	27.9	93	30.0	30.3	101	76.0-125	8.2	30.00
Chlorobenzene	30.0	28.9	96	30.0	29.1	97	78.0-109	0.69	30.00
1,1,1,2-Tetrachloroethane	30.0	28.8	96	30.0	29.1	97	81.0-117	1.0	30.00
Bromoform	30.0	26.7	89	30.0	29.2	97	72.0-134	8.9	30.00
Bromobenzene	30.0	28.0	93	30.0	28.3	94	76.0-113	1.1	30.00
1,1,2,2-Tetrachloroethane	30.0	28.2	94	30.0	30.1	100	76.0-129	6.5	30.00
1,2,3-Trichloropropane	30.0	28.1	94	30.0	30.0	100	70.0-145	6.5	30.00
Ethyl Benzene	30.0	28.6	95	30.0	28.6	95	72.0-115	0.0	30.00
m,p-Xylene	60.0	58.3	97	60.0	58.5	98	73.0-114	0.34	30.00
Styrene	30.0	29.3	98	30.0	29.7	99	74.0-114	1.4	30.00
o-Xylene	30.0	29.4	98	30.0	29.9	100	74.0-113	1.7	30.00
Isopropylbenzene (Cumene)	30.0	30.1	100	30.0	29.9	100	72.0-115	0.67	30.00
n-Propylbenzene	30.0	29.6	99	30.0	29.6	99	71.0-117	0.0	30.00
2-Chlorotoluene	30.0	28.9	96	30.0	29.5	98	76.0-111	2.1	30.00
4-Chlorotoluene	30.0	28.3	94	30.0	29.3	98	75.0-113	3.5	30.00
1,3,5-Trimethylbenzene	30.0	29.9	100	30.0	29.8	99	72.0-115	0.34	30.00
tert-Butylbenzene	30.0	29.6	99	30.0	29.4	98	74.0-112	0.68	30.00
1,2,4-Trimethylbenzene	30.0	30.5	102	30.0	30.4	101	73.0-114	0.33	30.00
sec-Butylbenzene	30.0	29.6	99	30.0	29.4	98	72.0-115	0.68	30.00
1,3-Dichlorobenzene	30.0	27.8	93	30.0	28.6	95	75.0-110	2.8	30.00
4-Isopropyltoluene	30.0	29.1	97	30.0	28.9	96	73.0-114	0.69	30.00
1,4-Dichlorobenzene	30.0	28.3	94	30.0	29.0	97	76.0-110	2.4	30.00
1,2-Dichlorobenzene	30.0	28.3	94	30.0	29.0	97	77.0-109	2.4	30.00
n-Butylbenzene	30.0	29.8	99	30.0	29.5	98	72.0-118	1.0	30.00
1,2-Dibromo-3-chloropropane	180	153	85	180	174	97	54.0-166	13	30.00
1,2,4-Trichlorobenzene	30.0	29.0	97	30.0	29.5	98	76.0-115	1.7	30.00
Hexachlorobutadiene	30.0	28.1	94	30.0	27.6	92	70.0-111	1.8	30.00
Naphthalene	30.0	27.7	92	30.0	30.6	102	71.0-129	9.9	30.00
trans-1,4-Dichloro-2-butene	150	139	93	150	154	102	62.0-164	10	30.00
1,2,3-Trichlorobenzene	30.0	28.0	93	30.0	29.1	97	78.0-115	3.9	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30202 [VXX/4102]
Blank Spike Lab ID: 93241
Date Analyzed: 10/07/2012 13:27

Spike Duplicate ID: LCSD-S for HBN 30202 [VXX/4102
Spike Duplicate Lab ID: 93242
Date Analyzed: 10/07/2012 13:53
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135006, 31203135007, 31203135009, 31203135010

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-d4			96			101	55.0-173		
Toluene d8			102			102	57.0-134		
4-Bromofluorobenzene			102			101	23.0-141		

Batch Information

Analytical Batch: **VMS2615**
Analytical Method: **SW-846 8260B**
Instrument: **MSD2**
Analyst: **BWS**

Prep Batch: **VXX4102**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **10/07/2012 12:09**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8260B

Prep Method: SW-846 5035 SM
Prep Batch: VXX4124
Prep Date: 10/09/2012 08:22

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS-S for HBN 30299 [VXX/4124]	93778	10/09/2012 10:27	VMS2623	MSD8	BWS
LCSD-S for HBN 30299 [VXX/4124	93779	10/09/2012 10:52	VMS2623	MSD8	BWS
MB-S for HBN 30299 [VXX/4124]	93777	10/09/2012 11:41	VMS2623	MSD8	BWS
B-8	31203135008	10/09/2012 13:19	VMS2623	MSD8	BWS

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB-S for HBN 30299 [VXX/4124]
Blank Lab ID: 93777
QC for Samples:
31203135008

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Dichlorodifluoromethane	ND	U	8.55	250	ug/Kg	50
Chloromethane	ND	U	22.4	50.0	ug/Kg	50
Vinyl chloride	ND	U	6.20	50.0	ug/Kg	50
Bromomethane	ND	U	11.9	50.0	ug/Kg	50
Chloroethane	ND	U	15.6	50.0	ug/Kg	50
Trichlorofluoromethane	ND	U	6.85	50.0	ug/Kg	50
1,1-Dichloroethene	ND	U	10.6	50.0	ug/Kg	50
Acetone	ND	U	43.2	1250	ug/Kg	50
Methylene chloride	ND	U	7.60	250	ug/Kg	50
trans-1,2-Dichloroethene	ND	U	11.2	50.0	ug/Kg	50
tert-Butyl methyl ether (MTBE)	ND	U	7.20	50.0	ug/Kg	50
1,1-Dichloroethane	ND	U	8.25	50.0	ug/Kg	50
Diisopropyl Ether	ND	U	14.7	50.0	ug/Kg	50
2,2-Dichloropropane	ND	U	19.7	50.0	ug/Kg	50
cis-1,2-Dichloroethene	ND	U	6.80	50.0	ug/Kg	50
2-Butanone	ND	U	36.2	1250	ug/Kg	50
Bromochloromethane	ND	U	10.6	50.0	ug/Kg	50
Chloroform	ND	U	6.95	50.0	ug/Kg	50
1,1,1-Trichloroethane	ND	U	6.15	50.0	ug/Kg	50
Carbon tetrachloride	ND	U	5.05	50.0	ug/Kg	50
1,1-Dichloropropene	ND	U	4.32	50.0	ug/Kg	50
Benzene	ND	U	5.65	50.0	ug/Kg	50
1,2-Dichloroethane	ND	U	8.35	50.0	ug/Kg	50
Trichloroethene	ND	U	6.25	50.0	ug/Kg	50
1,2-Dichloropropane	ND	U	8.15	50.0	ug/Kg	50
Dibromomethane	ND	U	8.40	50.0	ug/Kg	50
Bromodichloromethane	ND	U	5.50	50.0	ug/Kg	50
cis-1,3-Dichloropropene	ND	U	3.84	50.0	ug/Kg	50
4-Methyl-2-pentanone	ND	U	27.9	250	ug/Kg	50
Toluene	ND	U	6.65	50.0	ug/Kg	50
Methyl iodide	ND	U	5.75	50.0	ug/Kg	50
trans-1,3-Dichloropropene	ND	U	4.31	50.0	ug/Kg	50
Carbon disulfide	ND	U	5.30	50.0	ug/Kg	50
1,1,2-Trichloroethane	ND	U	6.30	50.0	ug/Kg	50
Tetrachloroethene	ND	U	7.75	50.0	ug/Kg	50
1,3-Dichloropropane	ND	U	6.50	50.0	ug/Kg	50
2-Hexanone	ND	U	36.4	250	ug/Kg	50
Dibromochloromethane	ND	U	6.70	50.0	ug/Kg	50
1,2-Dibromoethane	ND	U	6.00	50.0	ug/Kg	50
Chlorobenzene	ND	U	5.80	50.0	ug/Kg	50
1,1,1,2-Tetrachloroethane	ND	U	5.20	50.0	ug/Kg	50

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB-S for HBN 30299 [VXX/4124]
Blank Lab ID: 93777
QC for Samples:
31203135008

Matrix: Soil-Solid as dry weight

Results by **SW-846 8260B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Bromoform	ND	U	4.87	50.0	ug/Kg	50
Bromobenzene	ND	U	5.50	50.0	ug/Kg	50
1,1,2,2-Tetrachloroethane	ND	U	7.80	50.0	ug/Kg	50
1,2,3-Trichloropropane	ND	U	10.6	50.0	ug/Kg	50
Ethyl Benzene	ND	U	4.39	50.0	ug/Kg	50
m,p-Xylene	ND	U	9.10	100	ug/Kg	50
Styrene	ND	U	5.10	50.0	ug/Kg	50
o-Xylene	ND	U	4.37	50.0	ug/Kg	50
Xylene (total)	ND	U	9.10	100	ug/Kg	50
Isopropylbenzene (Cumene)	ND	U	4.35	50.0	ug/Kg	50
n-Propylbenzene	ND	U	5.65	50.0	ug/Kg	50
2-Chlorotoluene	ND	U	5.65	50.0	ug/Kg	50
4-Chlorotoluene	ND	U	6.25	50.0	ug/Kg	50
1,3,5-Trimethylbenzene	ND	U	5.65	50.0	ug/Kg	50
tert-Butylbenzene	ND	U	4.28	50.0	ug/Kg	50
1,2,4-Trimethylbenzene	ND	U	4.81	50.0	ug/Kg	50
sec-Butylbenzene	ND	U	5.60	50.0	ug/Kg	50
1,3-Dichlorobenzene	ND	U	5.15	50.0	ug/Kg	50
4-Isopropyltoluene	ND	U	3.85	50.0	ug/Kg	50
1,4-Dichlorobenzene	ND	U	6.50	50.0	ug/Kg	50
1,2-Dichlorobenzene	ND	U	6.85	50.0	ug/Kg	50
n-Butylbenzene	ND	U	3.85	50.0	ug/Kg	50
1,2-Dibromo-3-chloropropane	ND	U	37.4	250	ug/Kg	50
1,2,4-Trichlorobenzene	ND	U	4.57	50.0	ug/Kg	50
Hexachlorobutadiene	ND	U	3.96	50.0	ug/Kg	50
Naphthalene	ND	U	4.28	50.0	ug/Kg	50
trans-1,4-Dichloro-2-butene	ND	U	20.7	250	ug/Kg	50
1,2,3-Trichlorobenzene	ND	U	5.50	50.0	ug/Kg	50
Surrogates						
1,2-Dichloroethane-d4	112			55.0-173	%	50
Toluene d8	107			57.0-134	%	50
4-Bromofluorobenzene	97.0			23.0-141	%	50

Batch Information

Analytical Batch: VMS2623
Analytical Method: SW-846 8260B
Instrument: MSD8
Analyst: BWS

Prep Batch: VXX4124
Prep Method: SW-846 5035 SM
Prep Date/Time: 10/9/2012 8:22:05AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30299 [VXX/4124]
Blank Spike Lab ID: 93778
Date Analyzed: 10/09/2012 10:27

Spike Duplicate ID: LCSD-S for HBN 30299 [VXX/4124
Spike Duplicate Lab ID: 93779
Date Analyzed: 10/09/2012 10:52
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135008

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Dichlorodifluoromethane	250	253	101	250	351	**140***	70.0-130	**32***	30.00
Chloromethane	250	215	86	250	310	124	70.0-130	**36***	30.00
Vinyl chloride	250	212	85	250	296	118	70.0-130	**33***	30.00
Bromomethane	250	253	101	250	348	**139***	70.0-130	**32***	30.00
Chloroethane	250	221	88	250	329	**131***	70.0-130	**39***	30.00
Trichlorofluoromethane	250	215	86	250	316	126	70.0-130	**38***	30.00
1,1-Dichloroethene	250	217	87	250	268	107	70.0-130	21	30.00
Acetone	1250	1090	87	1250	1220	98	70.0-130	11	30.00
Methylene chloride	250	211	84	250	277	111	70.0-130	27	30.00
trans-1,2-Dichloroethene	250	236	94	250	286	114	70.0-130	19	30.00
tert-Butyl methyl ether (MTBE)	250	203	81	250	259	104	70.0-130	24	30.00
1,1-Dichloroethane	250	222	89	250	275	110	70.0-130	21	30.00
Diisopropyl Ether	250	217	87	250	255	102	70.0-130	16	30.00
2,2-Dichloropropane	250	254	101	250	293	117	70.0-130	14	30.00
cis-1,2-Dichloroethene	250	219	88	250	264	105	70.0-130	19	30.00
2-Butanone	1250	1070	85	1250	1300	104	70.0-130	19	30.00
Bromochloromethane	250	236	94	250	273	109	70.0-130	15	30.00
Chloroform	250	224	90	250	276	110	70.0-130	21	30.00
1,1,1-Trichloroethane	250	241	96	250	280	112	70.0-130	15	30.00
Carbon tetrachloride	250	227	91	250	274	109	70.0-130	19	30.00
1,1-Dichloropropene	250	208	83	250	260	104	70.0-130	22	30.00
Benzene	250	213	85	250	257	103	70.0-130	19	30.00
1,2-Dichloroethane	250	242	97	250	296	118	70.0-130	20	30.00
Trichloroethene	250	215	86	250	251	100	70.0-130	15	30.00
1,2-Dichloropropane	250	219	88	250	272	109	70.0-130	22	30.00
Dibromomethane	250	214	86	250	279	111	70.0-130	26	30.00
Bromodichloromethane	250	221	88	250	247	99	70.0-130	11	30.00
cis-1,3-Dichloropropene	250	219	88	250	264	105	70.0-130	19	30.00
4-Methyl-2-pentanone	1250	1030	82	1250	1260	101	70.0-130	20	30.00
Toluene	250	210	84	250	239	95	70.0-130	13	30.00
Methyl iodide	250	200	80	250	284	114	70.0-130	**35***	30.00
trans-1,3-Dichloropropene	250	225	90	250	255	102	70.0-130	13	30.00
Carbon disulfide	250	239	95	250	286	114	70.0-130	18	30.00
1,1,2-Trichloroethane	250	218	87	250	250	100	70.0-130	14	30.00

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30299 [VXX/4124]
Blank Spike Lab ID: 93778
Date Analyzed: 10/09/2012 10:27

Spike Duplicate ID: LCSD-S for HBN 30299 [VXX/4124
Spike Duplicate Lab ID: 93779
Date Analyzed: 10/09/2012 10:52
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135008

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Tetrachloroethene	250	218	87	250	258	103	70.0-130	17	30.00
1,3-Dichloropropane	250	208	83	250	248	99	70.0-130	18	30.00
2-Hexanone	1250	1040	83	1250	1180	94	70.0-130	13	30.00
Dibromochloromethane	250	218	87	250	260	104	70.0-130	18	30.00
1,2-Dibromoethane	250	195	78	250	235	94	70.0-130	19	30.00
Chlorobenzene	250	206	82	250	238	95	70.0-130	14	30.00
1,1,1,2-Tetrachloroethane	250	217	87	250	247	99	70.0-130	13	30.00
Bromoform	250	217	87	250	240	96	70.0-130	10	30.00
Bromobenzene	250	204	81	250	247	99	70.0-130	19	30.00
1,1,2,2-Tetrachloroethane	250	202	81	250	256	102	70.0-130	24	30.00
1,2,3-Trichloropropane	250	242	97	250	329	**132***	70.0-130	30	30.00
Ethyl Benzene	250	197	79	250	225	90	70.0-130	13	30.00
m,p-Xylene	500	377	75	500	463	93	70.0-130	20	30.00
Styrene	250	189	76	250	218	87	70.0-130	14	30.00
o-Xylene	250	193	77	250	247	99	70.0-130	25	30.00
Isopropylbenzene (Cumene)	250	192	77	250	228	91	70.0-130	17	30.00
n-Propylbenzene	250	195	78	250	237	95	70.0-130	19	30.00
2-Chlorotoluene	250	193	77	250	241	96	70.0-130	22	30.00
4-Chlorotoluene	250	183	73	250	224	89	70.0-130	20	30.00
1,3,5-Trimethylbenzene	250	192	77	250	234	93	70.0-130	20	30.00
tert-Butylbenzene	250	198	79	250	233	93	70.0-130	16	30.00
1,2,4-Trimethylbenzene	250	198	79	250	237	95	70.0-130	18	30.00
sec-Butylbenzene	250	197	79	250	231	92	70.0-130	16	30.00
1,3-Dichlorobenzene	250	202	81	250	228	91	70.0-130	12	30.00
4-Isopropyltoluene	250	194	77	250	229	91	70.0-130	17	30.00
1,4-Dichlorobenzene	250	193	77	250	226	90	70.0-130	16	30.00
1,2-Dichlorobenzene	250	199	79	250	256	102	70.0-130	25	30.00
n-Butylbenzene	250	208	83	250	241	96	70.0-130	15	30.00
1,2-Dibromo-3-chloropropane	1500	1420	95	1500	1690	113	70.0-130	17	30.00
1,2,4-Trichlorobenzene	250	240	96	250	290	116	70.0-130	19	30.00
Hexachlorobutadiene	250	262	105	250	279	112	70.0-130	6.3	30.00
Naphthalene	250	261	104	250	280	112	70.0-130	7.0	30.00
trans-1,4-Dichloro-2-butene	1250	1040	83	1250	1320	105	70.0-130	24	30.00
1,2,3-Trichlorobenzene	250	264	106	250	276	110	70.0-130	4.4	30.00

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS-S for HBN 30299 [VXX/4124]
Blank Spike Lab ID: 93778
Date Analyzed: 10/09/2012 10:27

Spike Duplicate ID: LCSD-S for HBN 30299 [VXX/4124
Spike Duplicate Lab ID: 93779
Date Analyzed: 10/09/2012 10:52
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135008

Results by **SW-846 8260B**

	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-d4			111			112	55.0-173		
Toluene d8			96			99	57.0-134		
4-Bromofluorobenzene			105			102	23.0-141		

Batch Information

Analytical Batch: **VMS2623**
Analytical Method: **SW-846 8260B**
Instrument: **MSD8**
Analyst: **BWS**

Prep Batch: **VXX4124**
Prep Method: **SW-846 5035 SM**
Prep Date/Time: **10/09/2012 08:22**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8015C GRO

Prep Method: SW-846 5035
Prep Batch: VXX4098
Prep Date: 10/05/2012 11:58

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 30161 [VXX/4098]	93092	10/05/2012 11:16	VGC2168	GC7	MDY
LCSD for HBN 30161 [VXX/4098]	93093	10/05/2012 11:41	VGC2168	GC7	MDY
MB for HBN 30161 [VXX/4098]	93094	10/05/2012 12:48	VGC2168	GC7	MDY
133-S003(92997MS)	93352	10/05/2012 14:30	VGC2168	GC7	MDY
133-S003(92997MSD)	93353	10/05/2012 14:55	VGC2168	GC7	MDY
B-2	31203135002	10/05/2012 17:03	VGC2168	GC7	MDY

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB for HBN 30161 [VXX/4098]
Blank Lab ID: 93094
QC for Samples:
31203135002

Matrix: Soil-Solid as dry weight

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Gasoline Range Organics (GRO)	ND	U	4.00	4.00	mg/kg	1
Surrogates						
4-Bromofluorobenzene	103			70.0-130	%	1

Batch Information

Analytical Batch: VGC2168
Analytical Method: SW-846 8015C GRO
Instrument: GC7
Analyst: MDY

Prep Batch: VXX4098
Prep Method: SW-846 5035
Prep Date/Time: 10/5/2012 11:58:53AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 30161 [VXX/4098]
Blank Spike Lab ID: 93092
Date Analyzed: 10/05/2012 11:16

Spike Duplicate ID: LCSD for HBN 30161 [VXX/4098]
Spike Duplicate Lab ID: 93093
Date Analyzed: 10/05/2012 11:41
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135002

Results by **SW-846 8015C GRO**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics (GRO)	16.0	16.2	101	16.0	16.7	104	70.0-130	3.0	30.00
Surrogates									
4-Bromofluorobenzene			99.2			103	70.0-130		

Batch Information

Analytical Batch: **VGC2168**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4098**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/05/2012 11:58**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8015C GRO

Prep Method: SW-846 5035
Prep Batch: VXX4109
Prep Date: 10/08/2012 08:45

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 30219 [VXX/4109]	93268	10/08/2012 10:48	VGC2171	GC7	MDY
LCSD for HBN 30219 [VXX/4109]	93269	10/08/2012 11:14	VGC2171	GC7	MDY
MB for HBN 30219 [VXX/4109]	93270	10/08/2012 11:39	VGC2171	GC7	MDY
133-S001(92995MS)	93378	10/08/2012 12:29	VGC2171	GC7	MDY
133-S001(92995MSD)	93379	10/08/2012 12:55	VGC2171	GC7	MDY
B-4	31203135004	10/08/2012 15:01	VGC2171	GC7	MDY
B-1	31203135001	10/08/2012 15:27	VGC2171	GC7	MDY
B-3	31203135003	10/08/2012 15:52	VGC2171	GC7	MDY
B-5	31203135005	10/08/2012 18:25	VGC2171	GC7	MDY
B-6	31203135006	10/08/2012 18:50	VGC2171	GC7	MDY
B-7	31203135007	10/08/2012 19:15	VGC2171	GC7	MDY
B-8	31203135008	10/08/2012 19:41	VGC2171	GC7	MDY
B-9	31203135009	10/08/2012 20:06	VGC2171	GC7	MDY
B-10	31203135010	10/08/2012 20:32	VGC2171	GC7	MDY

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB for HBN 30219 [VXX/4109]
Matrix: Soil-Solid as dry weight
Blank Lab ID: 93270
QC for Samples:
31203135001, 31203135003, 31203135004, 31203135005, 31203135006, 31203135007, 31203135008, 31203135009, 31203135010

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Gasoline Range Organics (GRO)	ND	U	4.00	4.00	mg/kg	1
Surrogates						
4-Bromofluorobenzene	101			70.0-130	%	1

Batch Information

Analytical Batch: VGC2171
Analytical Method: SW-846 8015C GRO
Instrument: GC7
Analyst: MDY

Prep Batch: VXX4109
Prep Method: SW-846 5035
Prep Date/Time: 10/8/2012 8:45:45AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Blank Spike Summary

Blank Spike ID: LCS for HBN 30219 [VXX/4109]
Blank Spike Lab ID: 93268
Date Analyzed: 10/08/2012 10:48

Spike Duplicate ID: LCSD for HBN 30219 [VXX/4109]
Spike Duplicate Lab ID: 93269
Date Analyzed: 10/08/2012 11:14
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135001, 31203135003, 31203135004, 31203135005, 31203135006, 31203135007, 31203135008, 31203135009, 31203135010

Results by **SW-846 8015C GRO**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics (GRO)	16.0	15.7	98	16.0	15.7	98	70.0-130	0.0	30.00
Surrogates									
4-Bromofluorobenzene			100			103	70.0-130		

Batch Information

Analytical Batch: **VGC2171**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4109**
Prep Method: **SW-846 5035**
Prep Date/Time: **10/08/2012 08:45**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8015C DRO

Prep Method: SW-846 3541
Prep Batch: XXX3129
Prep Date: 10/01/2012 10:18

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
MB for HBN 29950 [XXX/3129]	92202	10/02/2012 16:38	XGC2577	GC6	DTF
LCS for HBN 29950 [XXX/3129]	92203	10/02/2012 17:06	XGC2577	GC6	DTF
SPC-1(91948MS)	92204	10/02/2012 23:43	XGC2577	GC6	DTF
SPC-1(91948MSD)	92205	10/03/2012 00:12	XGC2577	GC6	DTF
B-2	31203135002	10/04/2012 20:26	XGC2581	GC6	DTF
B-3	31203135003	10/04/2012 20:54	XGC2581	GC6	DTF
B-4	31203135004	10/04/2012 21:23	XGC2581	GC6	DTF
B-1	31203135001	10/05/2012 19:41	XGC2585	GC6	DTF

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Method Blank

Blank ID: MB for HBN 29950 [XXX/3129]
Blank Lab ID: 92202
QC for Samples:
31203135001, 31203135002, 31203135003, 31203135004

Matrix: Soil-Solid as dry weight

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Diesel Range Organics (DRO)	ND	U	6.25	6.25	mg/kg	1
Surrogates						
o-Terphenyl	99.7			40.0-140	%	1

Batch Information

Analytical Batch: XGC2577
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF

Prep Batch: XXX3129
Prep Method: SW-846 3541
Prep Date/Time: 10/1/2012 10:18:40AM
Prep Initial Wt./Vol.: 32 g
Prep Extract Vol: 10 mL

Print Date: 10/10/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 29950 [XXX/3129]
Blank Spike Lab ID: 92203
Date Analyzed: 10/02/2012 17:06

Matrix: Soil-Solid as dry weight

QC for Samples: 31203135001, 31203135002, 31203135003, 31203135004

Results by **SW-846 8015C DRO**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Diesel Range Organics (DRO)	62.5	66.8	107	55.0-137
Surrogates				
o-Terphenyl			115	40.0-140

Batch Information

Analytical Batch: **XGC2577**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3129**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/01/2012 10:18**
Spike Init Wt./Vol.: **32 g** Extract Vol: **10 mL**
Dupe Init Wt./Vol.: Extract Vol:

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Batch Summary

Analytical Method: SW-846 8015C DRO

Prep Method: SW-846 3541
Prep Batch: XXX3136
Prep Date: 10/02/2012 17:05

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
MB for HBN 30005 [XXX/3136]	92549	10/04/2012 15:42	XGC2581	GC6	DTF
LCS for HBN 30005 [XXX/3136]	92550	10/04/2012 16:10	XGC2581	GC6	DTF
B-5	31203135005	10/04/2012 22:20	XGC2581	GC6	DTF
B-5(92094MS)	92551	10/04/2012 22:49	XGC2581	GC6	DTF
B-5(92094MSD)	92552	10/04/2012 23:17	XGC2581	GC6	DTF
B-6	31203135006	10/04/2012 23:45	XGC2581	GC6	DTF
B-7	31203135007	10/05/2012 00:13	XGC2581	GC6	DTF
B-9	31203135009	10/05/2012 02:07	XGC2581	GC6	DTF
B-10	31203135010	10/05/2012 02:35	XGC2581	GC6	DTF
B-8	31203135008	10/05/2012 20:09	XGC2585	GC6	DTF

Method Blank

Blank ID: MB for HBN 30005 [XXX/3136]
Matrix: Soil-Solid as dry weight
Blank Lab ID: 92549
QC for Samples:
31203135005, 31203135006, 31203135007, 31203135008, 31203135009, 31203135010

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Diesel Range Organics (DRO)	ND	U	6.25	6.25	mg/kg	1
Surrogates						
o-Terphenyl	108			40.0-140	%	1

Batch Information

Analytical Batch: XGC2581
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF

Prep Batch: XXX3136
Prep Method: SW-846 3541
Prep Date/Time: 10/2/2012 5:05:04PM
Prep Initial Wt./Vol.: 32 g
Prep Extract Vol: 10 mL

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Blank Spike Summary

Blank Spike ID: LCS for HBN 30005 [XXX/3136]
Blank Spike Lab ID: 92550
Date Analyzed: 10/04/2012 16:10

Matrix: Soil-Solid as dry weight

QC for Samples: 31203135005, 31203135006, 31203135007, 31203135008, 31203135009, 31203135010

Results by **SW-846 8015C DRO**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Diesel Range Organics (DRO)	62.5	59.1	95	55.0-137
Surrogates				
o-Terphenyl			101	40.0-140

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
Spike Init Wt./Vol.: **32 g** Extract Vol: **10 mL**
Dupe Init Wt./Vol.: Extract Vol:

SGS Analytical Perspectives | 5500 Business Dr. US - 28405 - Wilmington, NC t +1 910 350 1903 f +1 910 350 1557 www.sgs.com
Member of the SGS Group (SGS SA)

Matrix Spike Summary

Original Sample ID: 31203135005 (B-5)
MS Sample ID: 92551
MSD Sample ID: 92552

Analysis Date: 10/04/2012 22:20
Analysis Date: 10/04/2012 22:49
Analysis Date: 10/04/2012 23:17
Matrix: Soil-Solid as dry weight

QC for Samples: 31203135005, 31203135006, 31203135007, 31203135008, 31203135009, 31203135010

Results by **SW-846 8015C DRO**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics (DRO)	ND	64.7	48.2	74	63.8	58.1	91	40.0-140	19	30.00
Surrogates										
o-Terphenyl				92.3			88.4	40.0-140		

Batch Information

Analytical Batch: **XGC2581**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3136**
Prep Method: **SW-846 3541**
Prep Date/Time: **10/02/2012 17:05**
MS Init Wt./Vol.: **33.55 g** Extract Vol.: **10 mL**
MSD Init Wt./Vol.: **34 g** Extract Vol.: **10 mL**

Print Date: 10/10/2012

N.C. Certification # 481

CHAIN OF CUSTODY

SGS ANALYTICAL PERSPECTIVES
5500 Business Drive
Wilmington, NC 28405
+1 910 350 1903
WWW.SGS.COM

CLIENT: S&ME
CONTACT: Candy Elliott **PHONE NO:** (919) 872-2660
PROJECT: NCDOT Fayetteville Lap **SITE / PWSID / WBS #:**
REPORTS TO: Candy Elliott
EMAIL: celliott@smeinc.com
INVOICE TO: NCDOT **QUOTE #**
P.O. NUMBER U2591CB

SGS Reference #: 3120313S

PAGE 1 OF 1

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	PRESERVATIVES USED	ANALYSIS REQUIRED: TPH GRO/DRO	ANALYSIS REQUIRED: VOC's by 8260B	REMARKS
	B-1	9/25/12	11:45	S	6	G		X	X	
	B-2	9/25/12	13:00	S						
	B-3	9/25/12	14:00	S						
	B-4	9/25/12	14:45	S						
	B-5	9/25/12	15:15	S						
	B-6	9/25/12	16:00	S						
	B-7	9/26/12	11:35	S						
	B-8	9/26/12	12:00	S						
	B-9	9/26/12	14:15	S						
	B-10	9/26/12	15:00	S						

COLLECTED/RELINQUISHED BY: (1) Candy E Elliott	**DATE** 9/27/12	**TIME** 10:50	**RECEIVED BY:**
Relinquished By: (2)	Date 9/27/12	Time 1800	Received By:
Relinquished By: (3)	Date	Time	Received By:
Received For Laboratory By:	Date 9/28/12	Time 0800	CoC Seal: INTACT BROKEN ABSENT Sample Receipt Temp: C 3.2

REPORT LEVEL: ☐ Lovol I ☐ Level II ☐ Level IV

REQUESTED TURNAROUND TIME: ☐ Rush: _____ ☒ Standard

SPECIAL DELIVERABLES: State of Origin: _____ ☐ Trust Fund
☐ DoD ☐ EDD: _____ Other: _____

SPECIAL INSTRUCTIONS:

Shipping Carrier:
Shipping Ticket No:

Notes:

SGS-00055 (06/12)

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

White - Retained by Lab
Yellow - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-S&ME** Work Order No.: **31203134**

1. ___ Shipped
   _X_ Hand Delivered

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

3. ___ Custody Tape on Container
   _X_ No Custody Tape

4. _X_ Samples Intact
   ___ Samples Broken / Leaking

5. _X_ Chilled on Receipt Actual Temp.(s) in °C: 3.2
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications

6. _X_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

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

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

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

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

Notes:

Comments:

Inspected and Logged in by: JJ

Date: Fri-9/28/12 00:00

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