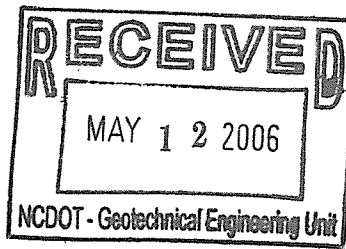


LIMITED PRELIMINARY SITE ASSESSMENT

Parcel 115

**Tom Morgan Property (Convenience King 22)
633 US Highway 19E
Burnsville, NC 28714**



State Project No. R-2519A
WBS Element No. 35609.1.1
EI Project No. ENMO060029.00

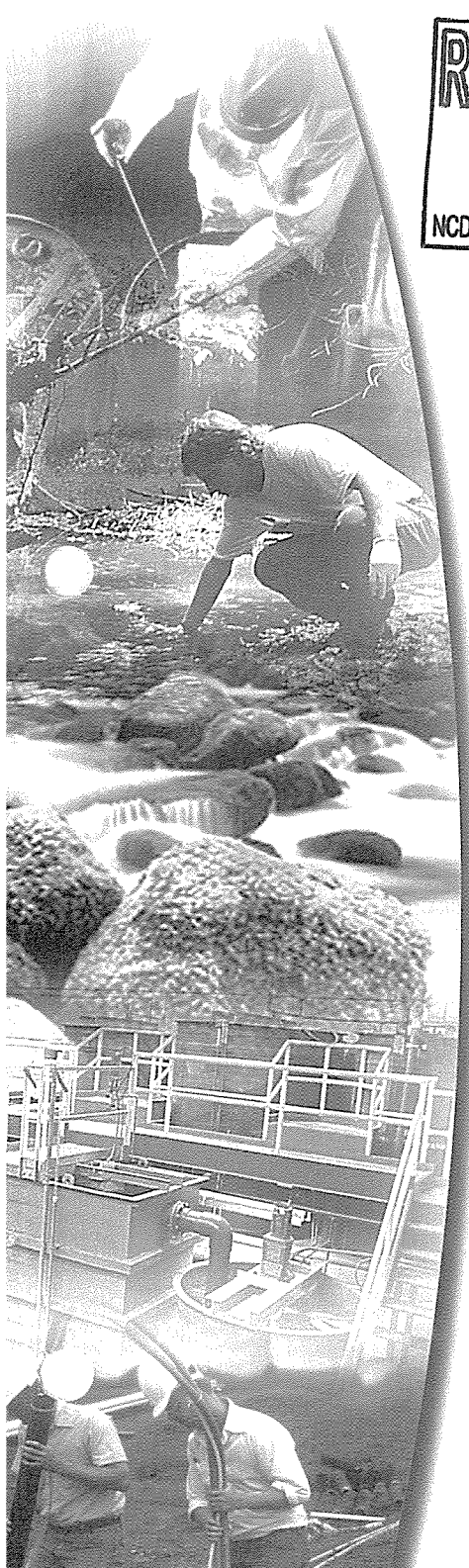
Prepared For:

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State of North Carolina
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May 2006



LIMITED PRELIMINARY SITE ASSESSMENT (PSA)

Conducted on

Parcel 115
Tom Morgan Property
633 US Highway 19E
Burnsville, NC 28714
State Project No. R-2519A
WBS Element No. 35609.1.1
EI Project No. ENMO060029.00

For

Mr. Gregory A. Smith
State of North Carolina
Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, NC 27699-1589


Issue Date: May 12, 2006

Kevin D. Horton
Project Geologist/Manager

 For KDH


Signature

Robert Shaut
Project Geologist/Manager




Signature

David C. Brewster, P.G.
Principal Geologist



Signature



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Appendix D: Laboratory Analytical Results Report
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1.0 INTRODUCTION

Environmental Investigations, Inc. (EI) conducted a *Limited Preliminary Site Assessment* (PSA) within the existing and/or proposed North Carolina Department of Transportation (NCDOT) *right-of-way* (ROW) adjacent to a parcel (identified by the NCDOT as Parcel 115) located at 633 US Highway 19E, Burnsville, North Carolina 28714. A convenience store is currently located on the adjacent parcel. The report presented herein documents the findings of the PSA that was conducted within the described ROW. For purposes of this report, the terms subject site and/or site include the existing NCDOT ROW and the proposed ROW, and/or the abutting property/parcel.

1.1 Report Organization

Field activities were conducted by Mr. Kevin D. Horton and Robert Shaut, an Environmental Geologists with EI, on March 29 and April 20, 2006. The report presented herein summarizes the scope of work conducted, discusses sampling procedures, and presents our findings, conclusions and recommendations. A table entitled "Summary of Soil Analytical Results" is presented in **Table 1**, and a table entitled "Summary of Groundwater Analytical Results", is presented in **Table 2**. A "Site Location Map", a "Site Map" and "Impacted Soils Map" are presented in **Figures 1, 2, and 3**, respectively. A compilation of "Site Photographs" are presented in **Appendix A**, the "Standard Field Operating Procedures (SOP)" are presented in **Appendix B**, "Soil Boring Logs" are included in **Appendix C**, Analytical Laboratory Reports are presented in **Appendix D** and a Geophysical Report conducted by Schnabel Engineering South is presented in **Appendix E**.

1.2 Background

Mr. Eugene Tarascio, GeoEnvironmental Project Manager with the NCDOT GeoTechnical Engineering Unit submitted to EI a "*Request for Supplemental Technical and Cost Proposal*" (RFP), dated February 24, 2006. The RFP solicited a technical and cost proposal to perform Limited PSAs on a total of 18 Parcels located within a NCDOT Highway Project, identified as WBS Element #35609.1.1, State Project #R-2519A, located in Burnsville, NC. The RFP outlined site information on each of the 18 parcels, some site photographs and NCDOT Figures (Plan Sheets) were attached to the RFP. Mr. Gregory A. Smith, LG, PE, GeoEnvironmental Supervisor with the NCDOT, GeoTechnical Engineering Unit, GeoEnvironmental Section authorized EI to perform the PSAs, as documented in a "Notice to Proceed" (NTP) dated March 13, 2006. Based on the NTP, the final reports are due no later than May 7, 2006.

1.3 Objectives

The objective of performing the PSA was to determine if existing commercial USTs have impacted the subsurface of the existing and/or proposed ROW. The study (PSA) on the referenced parcel (Parcel 115 – Tom Morgan Property) included herein was performed with a reasonable effort to investigate and quantify potentially petroleum-hydrocarbon impacted subsurface soils. However, findings documented in the report do not constitute a guarantee that all potential sources of (petroleum) environmental contamination have been assessed and subsequently analyzed.

This report is provided for the sole use of the NCDOT on the project for which it was prepared. All materials and information used for this project were obtained by EI, Inc. Use of this report by any third parties other than the NCDOT will be at such party's sole risk. EI Inc. disclaims liability for any use of or reliance on this report by third parties.

2.0 SCOPE OF WORK & ENVIRONMENTAL SERVICES

2.1 Requested Scope of Work

Documented in the RFP, dated February 24, 2006, the NCDOT requested the following scope of work:

- Determine if contaminated soils are present around any underground storage tanks (USTs) identified that are within the existing and/or proposed ROW;
- in addition, collect soil samples every 15.24 meters (50 feet) to a maximum depth of 2.44 meters (8 feet) along the proposed drainage, if there is no proposed drainage, collect samples at same interval along the edge of existing and/or proposed ROW within the "area of investigation";
- delineate and estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a site map for each site;
- if groundwater is encountered and the project manager suspects the possibility of groundwater contamination, obtain a sample for analysis by converting one (1) of the borings to a temporary monitoring well;
- for each groundwater sample collected, also obtain a 24-hour groundwater depth;
- if a groundwater sample is collected for proposed drainage, perform aquifer testing to determine the recharge rate and use this to provide an estimated quantity of contaminated water that will have to be disposed of when de-watering occurs to install the proposed drainage; prepare a report including field activities, findings, and recommendations for the site and submit in quadruplet to the NCDOT office.

2.2 Scope of Services

To accomplish the scope-of-services, a field reconnaissance was performed to identify general site conditions, and Direct Push Technology (DPT) was utilized to collect soil samples on the subject parcel.

To perform the requested Limited PSA, EI personnel supervised, oversaw and performed site reconnaissance activities and collected appropriate samples to complete the project objectives. To complete the study on the subject parcel, EI performed the following scope of services:

- Supervision, and oversight of the advancement of 19 soil test borings utilizing DPT methods to the respective depths of 1.22 – 4.27 meters (4 - 12 feet) below the land surface (bls) within the existing and/or the proposed NCDOT right-of-way.
- Collection and submittal of 19 soil samples for laboratory analytical testing.
- Installation of one (1) temporary monitoring well (piezometer).
- Collection and submittal of one (1) groundwater sample for laboratory analyses.
- Photo documentation of pertinent site features.

Preparation of the *Limited PSA Report*, presented herein that presents our findings and conclusions along with our recommendations.

3.0 SITE CHARACTERIZATION

3.1 Site Location

A convenience store known as the Tom Morgan property (Convenience King 22) is currently located at 633 US Highway 19E, in Burnsville, North Carolina 28714 (**Figure 1**). The subject property is currently located immediately adjacent to the NCDOT ROW (**Photograph 1**) as identified in NCDOT's R-2519A Plan Sheet 21/22. Copies of digital site photographs are presented in **Appendix A**.

3.2 Physical Setting

The subject site parcel currently consists of a convenience store with gasoline station. The parcel consists of a one-story building, a fuel pump-island with six pumps, and asphalt parking. See **Figure 2** for the location of the business.

3.2.1 Number and Capacities of USTs

Based on a geophysical investigation, and information provided by the NCDOT, three (3) 45,420-liter (12,000-gallon) capacity USTs are currently located on the eastern portion of the parcel approximately 29 meters (95 feet) north of the centerline of US 19E. The USTs appear to be situated west just beyond the NCDOT proposed ROW.

3.3 Site Topography

Site observations and review of the Burnsville, NC United States Geological Survey (USGS) Topographic Quadrangle Map (1998) revealed that the subject site is located at an elevation of approximately 880 meters (2,640 feet) above mean sea level (msl) (**Figure 1**). Topographically, the site slopes gently to the southeast. Surface water runoff appears to flow directly south in the direction of Little Crabtree Creek located adjacent the site to the south.

3.4 Land Use & Surrounding Properties

The subject property is located inside the city limits of Burnsville, NC. Land use in the immediate vicinity of the site is characterized by commercial properties. The site is bounded on the north by Main Street, to the east by the Main Street US 19E intersection, to the west by commercial properties and to the south by US 19E.

4.0 SUBURFACE INVESTIAGTION

4.1 Geophysical Survey

Schnabel Engineering South, locally based in Greensboro, North Carolina, was subcontracted to provide geophysical services on the subject site. The purpose of the geophysical survey was to locate potential UST systems within the existing and/or proposed ROW. The contractor conducted an electromagnetic (EM) induction survey utilizing a Geonics EM61-MK2 instrument. Ground penetrating radar (GPR) investigations of selected EM61 anomalies were conducted using a Geophysical Surveys System SIR-2000 system equipped with a 400 MHz antenna. The geophysical contractor surveyed an estimated 2,837.5 square meters (9,307 square feet) located on the subject site. Based on the Geophysical report, anomalies were identified probably due to insignificant buried metal objects, known site features, and several anomalies caused by buried metal culverts.

4.2 Geophysical Survey Results

A detailed report documenting the geophysical survey activities and results of the study is included in **Appendix E**

4.3 Subsurface Soils Investigation

Subsurface Environmental Investigations (SEI), based in Statesville, North Carolina, was selected and subcontracted to provide Direct Push Technology (DPT) services. On March 29, 2006, EI directed and supervised the advancement of eight (8) soil test borings (GP-4 through GP-6 and GP-8 though GP - 12), in the vicinity of the proposed drainage pipe and 11 borings (GP-1 though GP-3, GP-7, GP12-7 through GP16-7, GP17-6 and GP18-4) in the vicinity of the tank pit.

In general, the borings were advanced in order to evaluate the absence/presence of potential subsurface soil (vadose zone) impact and/or subsurface groundwater (petroleum smearing) impact associated with potential petroleum releases associated with either former and/or present UST system spills and/or releases into the subsurface. The soil borings were advanced to investigative depths ranging from 1.22 – 4.27 meters (4 - 12 feet) bls.

4.4 Soil Test Boring Methodology

A complete descriptive explanation of EI's *Standard Field Operating Procedures* that discusses specific sampling methodology is presented in **Appendix B**.

4.5 Soil Sample Collection Procedures

A total of 19 soil samples were collected for laboratory analysis. Soil samples retained for laboratory analysis were shipped to a representative of Paradigm Analytical Laboratory, for laboratory analytical testing. Dates and times of sample shipment may be referenced in the analytical Chain-of-Custodies (COC) presented in **Appendix D**.

4.6 Backfill Activities

At the completion of the exploratory subsurface advancement activities, the test borings were backfilled to surface grade. A complete descriptive explanation of EI's *Standard Field Operating Procedures* that discusses backfill procedures is presented in **Appendix B**.

4.7 Subsurface Soil Lithology

During boring advancement activities, soil samples were classified in the field by an EI geologist utilizing the Unified Soil Classification System (USCS). Subsurface soils encountered in the area of study were fairly consistent. The on-site geology consists of grass or asphalt with surficial topsoil from the surface to approximately 0.15 meters (0.5 foot) below grade. Layers of soil consisting of red to light brown sandy CLAY were encountered to the investigated depth of approximately 2.44 meters (8.0 feet) below the land surface (bls). From there, layers of soil consisting of dark gray sandy SILT were encountered to the investigated depth of approximately 4.57 meters (15 feet) below the land surface (bls).

Detailed descriptions are presented in Soil Boring Logs included in **Appendix C**. The boring logs include an interpretation of subsurface conditions based on field samples.

4.8 Groundwater Investigation

4.8.1 Temporary Monitoring Well Installation

During the field study (March 29, 2006), soil test boring "GP-1" (located southeast of the subject USTs approximately 32.5 meters (106.6 feet) north of the centerline of US 19E) was converted into a Type I (temporary) 2.54 cm (1.0 inch) diameter groundwater monitoring well (piezometer). The approximate location of the groundwater monitoring well is depicted in **Figure 2**. The well location was selected in the field by the EI Field Geologist (Kevin Horton) based on the topographic location of the boring and suspected impact in this area. The well was installed to a depth of 4.57 meters (15 feet) bls.

4.8.2 Monitoring Well Sampling

EI personnel collected a groundwater sample from the referenced temporary monitoring well ("GP-1") for purposes of analytical testing. On March 31, 2006, the samples were transferred to representatives of Prism Laboratories for analytical laboratory testing. Groundwater sampling procedures are discussed in more detail in the *Standard Operating Procedures* presented in **Appendix C**.

The groundwater table was measured in the temporary monitoring well ("GP-1") on March 30, 2006. Groundwater was measured at approximately 2.286 meters (7.51 feet) below the top of casing (TOC). The TOC was level with the ground surface.

5.0 LABORATORY TESTING AND RESULTS

5.1 Subsurface Soil Analytical Methods

A total of 19 soil samples (GP-1 through GP12, GP12-7 through GP16-7, GP17-6 and GP18-4) were submitted for TPH analyses by Method 8015B with preparation methods for the analysis of Diesel Range Organics (DRO) by GC-FID and Gasoline Range Organics (GRO) by GC-FID. The GRO method is utilized to extract volatile fuels such as gasoline, while the DRO method is utilized to extract less volatile petroleum products such as diesel fuel, No. 2 fuel oil, kerosene, and varsol. Samples GP12-7 through GP16-7, GP17-6 and GP18-4 were also submitted for Arsenic analysis by Method 6010. One soil sample (GP-1) was submitted for risk-based analysis consisting of EPA methods 8260, 8270, MADEP EPH and VPH.

5.2 Soil Laboratory Analyses Results

Laboratory analysis of the soil samples collected showed that six (6) of the 19 samples (GP-1, GP-2, GP-9, GP-10, GP-12 and GP18-4) showed concentrations of DRO at concentrations above laboratory detection limits. Five (5) of the six (6) samples showed concentrations of DRO above the North Carolina Department of Environment and Natural Resources (NCDENR) action limits of 10.0 mg/kg.

Analysis of the soil samples collected showed that only one (1) of the twelve (12) samples (GP-1) showed concentrations of GRO at concentrations above method detection limits. The sample reported concentrations of GRO above the North Carolina Department of Environment and Natural Resources (NCDENR) action limits of 10.0 mg/kg.

Risk-Based analysis of one (1) of the samples (GP-1) showed concentrations of VOCs, aliphatics and aromatics at or above the method detection limits with the C9-C10 aromatic fraction just above the Soil-to-Groundwater MSCC clean-up standards. The approximate location of all the borings are depicted in **Figure 2**

The specific results of the analytical testing of the soil samples are tabulated and presented in **Table 1**. The complete laboratory results and Chain-of-Custody Records are presented in **Appendix D**.

5.3 Groundwater Laboratory Analysis

Groundwater sample "TW-1" collected from the referenced temporary well was submitted for VOCs analysis for aromatic and halogenated volatiles by GC/PID-ELCD for EPA Method 601/602, for semivolatile organic compounds by GC/MS for EPA Method 625 and the top ten peaks identified, for EPH by GC/FID by Method MADEP EPH, and for VPH by GC-PID/FID by MADEP VPH.

5.4 Groundwater Laboratory Analysis Results

Analysis of a groundwater sample collected from a temporary monitoring well ("W-1") installed immediately adjacent to the subject USTs approximately 32.5 meters (106.6 feet) north of the centerline of US 19E, detected three (3) concentrations of VOC analytes, one (1) aliphatic analyte, but no concentrations of aromatic analytes or SVOC analytes. Exceedence of the current North Carolina Groundwater Standards (15A NCAC 2L .0202) were shown for only one constituent (MTBE). A summary of the analytical results is tabulated in **Table 2**.

6.0 SUMMARY OF FINDINGS

EI has reviewed information gathered during the Limited PSA study including the site reconnaissance activities, review of NCDOT plan sheets, review of the site investigation including soil collection activities, geophysical report and review of a laboratory analyses report. Compiled below is a summarized list of the significant findings.

- Three (3) 45,420-liter (12,000-gallon) capacity USTs are currently located on the eastern portion of the parcel approximately 29 meters (95 feet) north of the centerline of US 19E.
- Groundwater was encountered beneath the site at a location immediately adjacent to the subject USTs approximately 32.5 meters (106.6 feet) north of the centerline of US 19E at a depth of 2.286 meters (7.51 feet) below the TOC.
- Analyses of two (2) soil samples collected at a depth of approximately 12-14 feet bls (beneath the bottom of the USTs) in the area adjacent the subject USTs, reported concentrations of DRO above the NCDENR action limits of 10.0 mg/kg. One (1) of these samples ("GP-1") also showed concentrations of GRO (34.1 mg/kg) above the action limits of 10.0 mg/kg. Four (4) samples collected from the proposed drainage pipe area showed concentrations of DRO that exceeded either the laboratory method detection limit or the same regulatory standards.
- Risk-Based analysis of one (1) sample (GP-1) collected adjacent to the subject USTs (the sample showing the most elevated concentrations of DRO/GRO), indicated concentrations of aromatics just above the most stringent MSCC Soil-To-Groundwater cleanup standards. VOCs, SVOCs and aliphatics concentrations were shown to be below MSCC Soil-To-Groundwater cleanup standards.
- Analysis of a groundwater sample collected from a temporary monitoring well ("GP-1") installed adjacent to the subject USTs approximately 32.5 meters (106.6 feet) north of the centerline of US 19E, detected three (3) concentrations of VOC analytes, one (1) aliphatic analyte, but no reportable concentrations of aromatic analytes or SVOC analytes. Exceedence of the current North Carolina Groundwater Standards (15A NCAC 2L .0202) were shown for only one constituent (MTBE) at 430.0 µg/L.

7.0 CONCLUSIONS AND RECOMMENDATIONS

EI personnel have reviewed information obtained during the *Limited PSA* at the site (Parcel 115) and present the following conclusions and recommendations.

Based upon the absence of petroleum hydrocarbon field indicators at shallow depths and the presence of DRO and GRO at depths below the bottom of the USTs, it appears that the presence of hydrocarbons may be attributed to an UST leak as opposed to a spill incident, although a spill cannot be ruled out. Most likely a combination of both (leak and spill) has occurred.

Based on the current data, the vadose zone in a localized area located directly adjacent the subject USTs (located within the NCDOT ROW) has been impacted by petroleum hydrocarbon residuals. Furthermore, EI projects that the release/spill has migrated to a distance of approximately 25 meters (82 feet) from the center line of the tank vessels. In addition, based on the groundwater analyses data, it appears that the impact has migrated vertically to the shallow aquifer. In addition to the vadose zone adjacent to the USTs it appears that a small area of impacted soil measuring approximately 15 meters (4.57 feet) by one (1) meter (3.29 feet) is present along Highway 19E in the area between the road and the creek.

The tanks appear to be located outside the proposed right-of-way, the extent of impact could not accurately be determined, thus EI is assuming that some impact, although minor has likely occurred in the same. Thus, based on the projections stated above, EI estimates that a total estimated volume of approximately **152 cubic meters (200 cubic yards) of impacted subsurface soils** are likely present in the vicinity of the USTs within the subsurface and approximately **36 cubic meters (47 cubic yards) of impacted subsurface soils** are likely present in the area along Highway 19E within the subsurface.

Based on the groundwater analysis, the groundwater has been impacted to levels that exceed the regulatory standards. Without additional wells, EI cannot project the extent of impact, although based on the data; the impact does not appear to be significant. In addition, it is unlikely that the impact has migrated beyond the property boundaries, although the possibility cannot be ruled out.

Based on the conclusions, particularly based on the detection of soil concentrations above reportable TPH and risk based levels, the property owner should be notified of this finding. It also should be noted that the detection of contaminants discovered during this investigation normally should be reported to the regulatory agency (NCDENR) by the property owner. At this time, no other recommendations are warranted.

Note: This report does not constitute a guarantee that all potential sources of environmental contamination have been assessed and subsequently analyzed.

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS

Parcel 115
Tom Morgan Property
633 US Highway 19E, Burnsville, NC 28714
State Project No. R-2519A
WBS Element No. 35609.1.1

Sample Identification	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	GP-9	GP-10	GP-11	GP-12	GP-12-7	GP-13-7	GP-14-5	GP-15-7	GP-16-7	GP-17-6	GP-18-4	
	3.66m - 4.57m (12'-14')	0.6	1.22m - 1.83m (4'-6')	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Sample Depth Meters (Feet)	1.83m - 2.44m (6'-8')																			
Sample Date	3/30/2006																			
Field Screening Results-PID (ppm)	151.0																			
Laboratory Analysis	Cleanup Standards (MSCC)																			
	Residential MSCC (mg/kg)	Industrial MSCC (mg/kg)	Commercial MSCC (mg/kg)	Soil-to-GW MSCC (mg/kg)																
MADEP VPH	939	24528	72	<10																
C9-C8 Aliphatics	9386	245280	3255	60																
C9-C10 Aromatics	469	12264	34	35																
MADEP EPH	Cleanup Standards (MSCC)																			
C9-C18 Aliphatics	9386	245280	3255	21																
C19-C36 Aliphatics	469	12264	34	<10																
C11-C22 Aromatics	93860	*	Immobile	<10																
atlie Organic Compound Method 8260B/6035	Cleanup Standards (MSCC)																			
Benzene	22	200	0.0056	Laboratory Results (µmol/mol)																
Toluene	3200	82000	7	BOL																
Ethylbenzene	1560	40000	0.24	BOL																
Total Xylenes	320000	2000000	5	BOL																
2-Butanone (MEK)	9385	245280	0.7	BOL																
Acetone	1564	40880	3	BOL																
Isopropylbenzene (Cum)	1564	40880	2	BOL																
n-Propylbenzene	156	4088	2	BOL																
1,4-Dimethylbenzene	156	4088	2	BOL																
1,3-Dimethylbenzene	156	4088	2	BOL																
sec-Butylbenzene	156	4088	3	BOL																
n-Butylbenzene	156	4088	4	BOL																
Naphthalene	63	1635	0.58	BOL																
Diisopropylether (DIPE)	156	4088	0.37	0.009																
Methyl Tert-butyl Ether	156	4088	0.92	0.219																
Methylene chloride	85	763	0.02	BOL																
p-Isopropyltoluene	NS	NS	NS	BOL																
m-Isopropyltoluene	NS	NS	NS	BOL																
All Remaining Analytes	NA	NA	NA	BOL																
SW846-8270C	Cleanup Standards (MSCC)																			
Naphthalene	63	1635	0.58	Laboratory Results (µmol/mol)																
2-methyl naphthalene	63	1635	3	BOL																
Phenanthrene	469	12264	60	BOL																
All Remaining Analytes	NA	NA	NA	BOL																
Laboratory Analysis																				
(Total Petroleum Hydrocarbons by GC/FID 8015)	NCDENR ¹ (Volume II) Reportable Concentration (mg/kg)																			
Gasoline Range Organics	34.1	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diesel Range Organics	56.3	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Other Organics	10	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
												8.22								17.9

NOTE:
mg/kg denotes parts per million
MSCC = Maximum Soil Contaminant Concentrations
BOL & Italic Font = In Excess of MSCC Cleanup Standards
¹ NCDENR = North Carolina Department of Environment & Natural Resources

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
 Parcel 115 - Tom Morgan Property
 633 US Highway 19E
 Burnsville, NC 28714
 State Project: R-25190A
 WBS Element: 35609.1.1

Sample Identification		W-1
Groundwater Depth (From top of casing (Feet))		7.50
Sample Date		3/30/2006
Volatiles	2L Groundwater Standards (ug/L)	Laboratory Results (ug/L)
GC 601/602		
Isopropyl ether (IPE)	70	15.0
m,p Xylenes	530	7.6
Methyl-tert butyl ether (MTBE)	200	430.0
Remaining Analytes	NA	BQL
MADEP VPH	2L GW Standards (ug/L)	Laboratory Results (ug/L)
C5-C8 Aliphatics	420	200
C9-C12 Aliphatics	4200	<100
C9-C10 Aliphatics	210	<100
MADEP EPH	2L GW Standards (ug/L)	Laboratory Results (ug/L)
C9-C18 Aliphatics	4200	<100
C19-C36 Aliphatics	42000	<100
C11-C22 Aromatics	210	<100
Semivolatiles - GCMS Method 625		Laboratory Results (ug/L)
All Analytes	N/A	BQL

Legend:

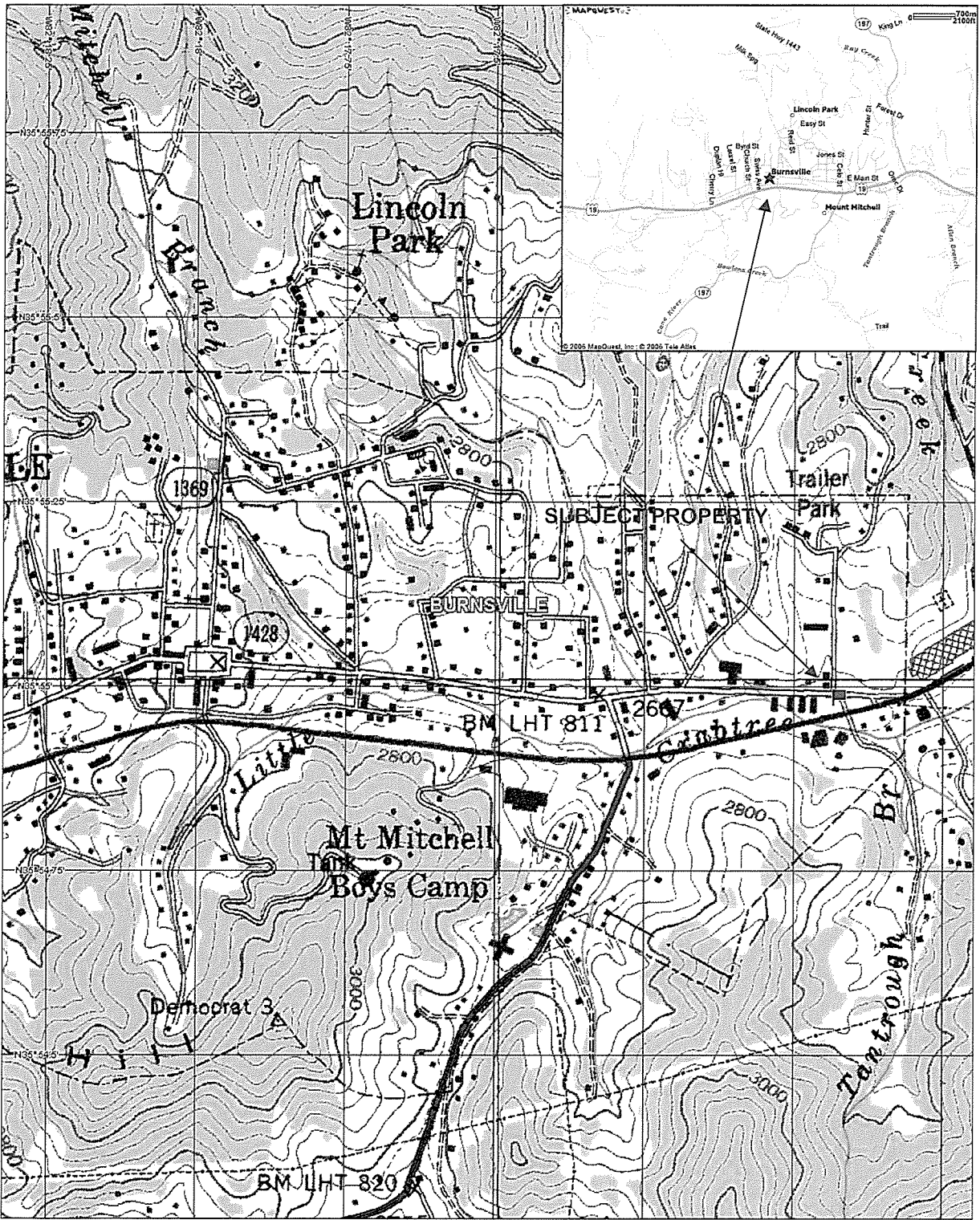
Italics/Bold Font = In Excess of NCAC 2L Class GA Standards

BQL = Below Quantitation Limit

NA = Not Applicable

NS = No Standard

FIGURES



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 350 ft Scale: 1: 12,800 Detail: 14-0 Datum: WGS84



FIGURE NUMBER:	1
QUAD:	Burnsville
PROJECT NUMBER:	ENMO060029
SCALE:	As Shown

SITE LOCATION MAP
 Tom Morgan Property
 633 US Highway 19 E
 Parcel 115
 Burnsville, North Carolina

EI
 ENVIRONMENTAL INVESTIGATIONS, INC

SAMUEL S. STYLES
DB 172
PG 287

1SFB

NAD '83

69.941
9.158

GP

6.4

BSI

SR 1428

CONC

GP-6

GP-5

GP-4

GP-18

115

EXISTING R/W
CONC

ISM&BLK BUS

S.C.W. ENTERPRISES
DB 203 PG 532

MTLCANOPY

5 FUEL
13,249L

200 mm

LITTLE CRABTREE CREEK

GP-3

GP-17

GP-14

GP-16

GP-2

GP-15

GP-12

GP-1

GP-7

GP-13

EXISTING R/W

LEGEND

- GP-1 ● SOIL TEST BORING
- GP-1 ⊕ TEMPORARY MONITORING WELL
- - - - - PROPERTY BOUNDARY
- · · · · EXISTING R/W

GP-8

GP-9

GP-10

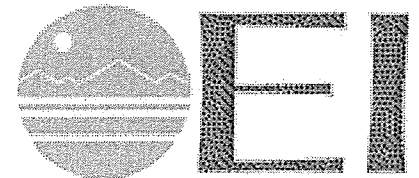
GP-11

US 19E

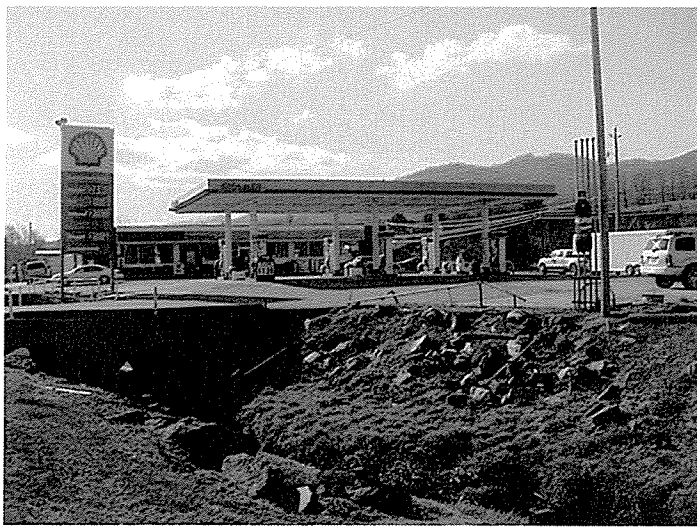


FIGURE:	2
RAWN BY:	NCDOT/RMS
DATE:	APR 2006
PROJ NO:	ENM0060029.00
SCALE:	1 cm = 5m

SITE MAP
PARCEL 115
Tom Morgan Property
633 US HWY 19E
Burnsville, NC 28714
WBS Element: 35609.1.1



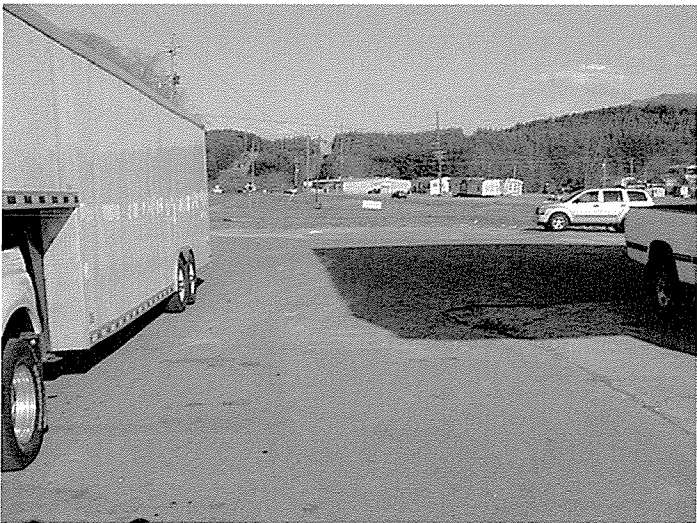
APPENDIX A
SITE PHOTOGRAPHS



Subject Property



Borings GP1-GP3 and GP7 facing south



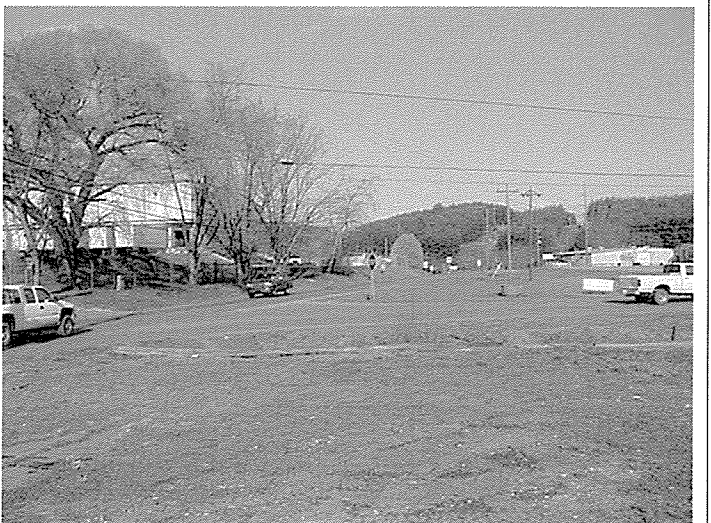
Borings GP4-GP6 facing east



Boring GP8 facing east



Boring GP9-GP11 facing east



Boring GP12 facing east

APPENDIX B

STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURES
Subsurface Assessment Methodology And Sampling Protocol

Parcel 115
Tom Morgan Property
633 US Highway 19E
Burnsville, NC 28714

WBS Element # 35609.1.1
State Project # R-2519A
EI Project No. ENMO060029.00

Prepared For:

Gregory A. Smith
State of North Carolina
Department of Transportation
Geotechnical Unit
GeoEnvironmental Section
1589 Mail Service Center
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Prepared by:

Environmental Investigations, Inc.
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May 2006

STANDARD OPERATING PROCEDURES

(Subsurface Assessment Methodology And Sampling Protocol

INTRODUCTION

Environmental Investigations, Inc. (EI) has prepared this STANDARD OPERATING PROCEDURES - Subsurface Assessment Methodology and Sampling Protocol Plan (SPP) for a residential property owned by Tom Morgan property located at 633 US Highway 19E, Burnsville, Yancey County, North Carolina.

The document presented herein describes the methodology and protocol that was utilized during the *Limited Preliminary Site Assessment* conducted at the above referenced project "site".

SAMPLING DESIGN

Prior to conducting a subsurface assessment, a sampling strategy was developed by EI based on the objectives of the investigation. After designing our soil sampling strategy, the appropriate equipment and techniques were selected to conduct the investigation. Our sampling strategy was based upon the premise of accomplishing the following performance objectives:

- collect soil samples that are representative of conditions as they exist at the study site;
- selecting the appropriate sampling device(s);
- taking measures to avoid introducing contamination as a result of poor sampling and/or poor handling techniques;
- reducing the potential of cross contamination between samples;
- defining sampling site selections and collection procedures for the appropriate individual media;
- defining the quality control assurance procedures;
- analytical requirements and limitations; and
- Data interpretation and assessment.

The sampling plan for this study was developed using the non-probabilistic (directed sampling designs) in nature. The location and frequency was based on this approach, to allow for the flexibility of the field coordinator (Geologist) to determine the number of samples collected for analysis. This approach allowed for the study objectives, properties of the matrix, resource constraints and access to sampling points to be adequately performed. Provision for access, use of sampling equipment, was also pre-determined.

The following section of the SPP discusses the sampling equipment available and collection methods which have been utilized to be technically appropriate.

SITE ORIENTATION

Prior to conducting any soil sampling procedures, the EI Project Geologist/Manager reviewed and presented the Site and Safety Health Plan to all participants involved with the project which was developed based on the EI Safety and Health program. All monitoring, protective equipment (latex gloves, Tyvek® suits, etc.), potential hazards associated with the site and general health and safety standards were discussed.

Site Survey

Prior to conducting specific sampling activities, EI personnel will conduct a limited site survey of the target and surrounding areas. Information discovered during the survey will be utilized to better perform the sampling activities and will provide more insight into establishment of the conclusions of this study. The site survey will consist of the following:

- General site layout (UST system layouts, overhead canopies, dispensers, etc.);
- Site access;
- Soil types and depths;
- Surface water drainage pathways;
- Existing site conditions;
- Visible staining of surface soil;
- Vegetation stress, and
- Possible offsite or non-site related sources.

FIELD INVESTIGATIVE PROCEDURES

Sampling Objectives

The general objective of sampling for this project was to collect a sample representative of subsurface and/or groundwater to reduce the potential bias caused by the sampling equipment used to obtain the sample.

The chosen sample locations were evaluated as discrete samples. A discrete sample is defined as "a discrete aliquot representative of a specific location at a given point in time."

Areas of Environmental Concern

The objectives of choosing the proper sampling methods to collect appropriate samples that are representative of the conditions as they exist at the site were as follows:

- Selecting the appropriate sampling device.
- Taking measures to avoid introducing contamination as a result of poor sampling and/or handling techniques.
- Reducing the potential of cross contamination between samples.

The areas of environmental concern consisted of an existing heating oil UST.

SOIL SAMPLING ACTIVITIES

Manual techniques and equipment, such as hand augers, are usually used for surface or shallow, subsurface soil sampling. Power operated equipment is usually associated with collecting deep samples, but this equipment can also be used for collecting shallow samples when the auger hole begins to collapse, or when the soil is so tight that manual auguring is not practical. Based on the request of the property owner, EI mainly used hand augers and to a lesser extent we utilized Direct Push Technology (DPT). The following section discusses the DPT methods employed during the site study.

Soil Sampling Collection Methods

Soil samples were collected utilizing Direct Push Technology (DPT) methods.

Direct Push Technology Methodology

DPT refers to tools and sensors that are inserted into the subsurface without the use of drilling to remove soil and make a path for the tool. To perform the DPT activities, the contractor utilized a GeoProbe® 6600 machine. The GeoProbe® 6600 is a hydraulically-powered probing machine designed, which uses static force and a percussion hammer to advance small diameter sampling tools into the subsurface to collect soil cores, groundwater samples, and or soil gas samples. A GeoProbe relies on a relatively small amount of static (vehicle) weight combined with percussion as the energy for advancement of a tool string.

The advantages of utilizing DPT drilling methods are described as follows:

- avoids the use of drilling fluids and lubricants during drilling;
- the equipment is highly mobile;
- disturbance of geochemical conditions during installation is minimized; and
- The drilling process does not produce drill cuttings.

DPT Soil Sample Collection Methods

Soil samples utilizing DPT methods were collected from the advanced DPT soil borings continuously in 4.0-foot increments using acetate liners contained in a nickel plated macro sampling tubes. Each soil-filled liner was split for field screening and soil sample collection purposes. Soil samples were collected from the liners with disposable vinyl gloves and utilized for soil vapor screening testing and/or laboratory retention. This sampling method allows for continuous soil sampling from the ground surface to the desired depth. Soil samples selected for analyses are referenced in the text section.

Soil Sample Collection Protocol

The following soil sampling collection procedures were utilized during this study:

- Ensured that all equipment, samplers and tools that will come in contact with the sample media was thoroughly decontaminated.
- Informed driller of sample interval (s) for borehole and oversaw the sampling process.
- Prepared and labeled all sample containers. Samples collected for the analytes of volatiles (if applicable) were sampled first.
- Labeled the containers including the location, depth, analyte, date and time of sampling.
- Delegated the driller to prepare the sample liner by cutting the liner in half.
- Placed liners on a clean sheet of plastic.
- Cut the soil core with a clean decontaminated knife to allow of visual soil classification.
- Sniffed the soil core with a PID/FID and recorded instrument readings volatile organics (VOCs) in a logbook (discussed further below).
- Logged the soil core in a logbook, including borehole identification (ID), sample number, date, time and any pertinent data.

-
- Logged soil classification including: recording percent recovery, color, description of major constituent, soil texture/structure, grading/sorting/plasticity, relative density or hardness consistency, clay, sand, silt, gravel content, grain size, moisture content, odor, staining and the Unified Soil Classification System (USCS) identifier and symbol;
 - Physically collected the selected soil samples and placed these samples into laboratory prepared containers.
 - Ensured the soil sample did not contain twigs, stones, and other debris from the soil.
 - Packed soil samples for shipment, prepared chain-of-custody records and shipping documentation

Soil Vapor Screening

An important tool in performing this study is performing the soil vapor screening or sniffing activities. Field screening is generally performed for a variety of reasons. The technique conducted during this study was used to screen soil samples for measurable levels of volatile organics. The results obtained from this procedure are not quantitative; however the results from several soil samples are relative and allowed the Field Geologist/Project Manager to select samples that are the most contaminated with the contaminated media. Generally, the presence of little or no organic vapor is possibly indicative of non-contaminated soils. Soil samples collected for purposes of soil headspace screening were tested by the following procedures:

- the field instrument was calibrated, prior to use;
- soil samples were collected directly from the DPT soil liners and placed into sealable plastic bags;
- soil samples within the bags were allowed to equilibrate for approximately five minutes;
- the headspace of each bagged sample was screened with the instrument probe for the presence of volatile organic compound (VOCs) with a Mini-RAE Photo-ionization Detector (PID);
- recording the instrument readings (VOCs) in a field logbook; and
- Verified that the FID/PID was reading background levels prior to exposing the probe into another sample.

Collection of Grab Soil Samples

Soil samples may provide two (2) types of soil contamination representation including grab and composite. Samples may be generally collected in random locations from a grid pattern or selected areas believed to be contaminated as evidenced by field indicators (staining, odors and/or measurable volatile organic readings).

For this study, grab samples selected from areas showing field indicators or confirmation soil samples chosen to confirm the absence of volatile organic readings were chosen. The technical definition for a grab sample is as follows: A grab sample is a discrete aliquot representative of a specific location at a given point in time. The sample is collected at one time and at one particular sampling point and depth. Refer to the text or Chain-of-Custody in this study for soil sample selection, date, time and depths of each sample chosen for laboratory analyses.

Sample Handling Procedures

The sample handling procedures were conducted as follows:

- 1) Disposable surgical latex gloves were used to avoid cross contamination of samples. Gloves were discarded in a designated "waste bag after each sample was collected.
- 2) Each confirmation sample upon collection was immediately stored in a cooler containing ice. During the sample collection process, care was taken to insure the samples were not collected in direct sunlight. In addition, during the collection process, no parts of the body without gloves touched any part of the sample.
- 3) Once placed into the cooler, each sample was protected with bubble wrap® and foam was inserted in the base, sides and top of the cooler.

Soil Boring Abandonment Procedures

Due to the fact that holes in the subsurface may act as a conduit for contamination migration, proper sealing of holes is essential for ensuring that a site assessment does not contribute to the spread of contaminants. The objective of hole-sealing is to prevent preferential migration of contaminants through the bore hole. To seal the boreholes advanced during this study, the contractor utilized a method known as surface pouring. Surface pouring entails sealing the boreholes with dry products (e.g., bentonite granules, chips and/or pellets). Once the DPT drive rods have been withdrawn, dry products are physically poured into the bottom of the

borehole and filled vertically up the column to at least two (2) feet from the base of the borehole. Once the dry products have seated into the borehole, the product is hydrated to expand the clay material. After the hydration process has been performed, the remaining portions of the boreholes are backfilled with the soil cores. Due to the nature of DPT, no soil cuttings were generated during soil boring exploration assessment work.

GROUNDWATER INVESTIGATION

The purpose of a monitoring well is to provide an access point for measuring groundwater levels and to collect groundwater samples representing actual in-situ groundwater conditions at that point of access. For the purpose of this investigation, based on the scope of work, EI chose to install temporary groundwater monitoring wells (Type I).

WELL DEVELOPMENT AND GROUNDWATER SAMPLE COLLECTION

Water Development

The groundwater monitor well was purged with a Peristaltic™ pump. Well development allows fresh water from the formation to enter the well and the groundwater samples will more accurately represent actual groundwater conditions. The well was purged of approximately three (3) to five (5) well volumes of water or until dry prior to sampling.

Groundwater Sampling Procedures

After well development activities were performed, groundwater samples were collected from the well(s) with the referenced pump. During the collection process, samples were poured directly from the bailer into the laboratory supplied containers which were placed into an ice chest filled with ice. Under no circumstances were any intermediate sample containers used, i.e. jar, beaker, etc., and then transferred to the sample container. In addition, water samples were not field filtered.

Prior to collecting the water sample, the containers were labeled accordingly. This procedure was performed prior to sampling because sample containers have a tendency to "sweat" when filled with groundwater; this makes it difficult to affix a label to the container after sampling.

The sample label also was covered with a clear piece of tape, which was wrapped around the sample container. This procedure prevented the label from detaching from the container during sample storage and shipment.

Each sample container was labeled indicating the sample location (i.e. GP-1, or MW-1, etc.), date and time of collection, sample location, collector, project site, and analysis identification. Other pertinent information was recorded in the field book.

After the groundwater sample(s) was collected, the containers were immediately placed in a sample cooler containing ice. Upon completion, the samples were transported to Paradigm Analytical Laboratories, located in Wilmington, NC using chain-of-custody documentation.

Soil Boring Abandonment Procedures

Due to the fact that holes in the subsurface may act as a conduit for contamination migration, proper sealing of holes is essential for ensuring that a site assessment does not contribute to the spread of contaminants. The objective of hole-sealing is to prevent preferential migration of contaminants through the bore hole. To seal the boreholes advanced during this study, the contractor utilized a method known as surface pouring. Surface pouring entails sealing the boreholes with dry products (e.g., bentonite granules, chips and/or pellets). Once the DPT drive rods have been withdrawn, dry products are physically poured into the bottom of the borehole and filled vertically up the column to at least two (2) feet from the base of the borehole. Once the dry products have seated into the borehole, the product is hydrated to expand the clay material. After the hydration process has been performed, the remaining portions of the boreholes are backfilled with the soil cores. Due to the nature of DPT, no soil cuttings were generated during soil boring exploration assessment work.

LABORATORY ANALYTICAL METHODS

Soil Analytical Methods

Based upon verbal information provided by NCDOT personnel (Eugene Tarascio), EI selected to analyze the chosen soil samples for total petroleum hydrocarbons (TPH) analyses by Method 8015B with preparation methods for the analysis of Diesel Range Organics (DRO) by GC-FID and Gasoline Range Organics (GRO) by GC-FID. The GRO method is utilized to extract volatile fuels such as gasoline, while the DRO method is utilized to extract less volatile petroleum products such as diesel fuel, fuel oil #2, kerosene, and varsol.

One (1) soil sample from the site was analyzed for volatile organics by SW-846 Method 8260 (5035 Prep), for semi-volatiles (SVOCs) by SW-846 Method 8270, and for aliphatics and aromatics by Massachusetts Department of Environmental Protection's (MADEP) method for volatile petroleum hydrocarbons (VPH) and MADEP's method for extractable

petroleum hydrocarbons (EPH), respectively.

These laboratory analytical methods were utilized as required in the *Guidelines* in order to compare results to the DWM's maximum soil contaminant concentration (MSCC) cleanup standards. The MSCC concentrations are also published in the *Guidelines*.

SAMPLE PACKAGING AND SHIPPING

This section discusses the sample packaging and shipping protocol that shall be used to transport collected samples to the laboratories for analytical testing. Samples collected, prepared, preserved and stored must then be readied for packaging and shipping. It is important that the presented protocol be followed to ensure that the samples reach their destination in sound condition. In addition, the samples must be under strict COC from the time they are sampled until the analysis is complete.

Samples collected for this project were classified as environmental materials samples and were not considered hazardous. In addition, the samples collected for this study were not classified as "dangerous goods".

Environmental samples collected for this field study were packed prior to shipment using the following procedures:

1. Secure drain plug on cooler with tape.
2. Place cushioned layer on bottom of cooler (vermiculite or "bubble-wrap" plastic).
3. Line cooler with large heavy duty plastic bag.
4. Place all sample containers in large plastic bag within the cooler. Be sure the lids on all bottles are tight (will not leak).
5. Cushion containers to prevent breakage.
6. Put ice that has been "double bagged" in heavy duty polyethylene bags and placed on top of and/or between the samples within the large plastic bag. Fill all remaining space between the containers with cushion materials.
7. Securely fasten the top of the large plastic bag with tape or tie.
8. Place the Chain-of-Custody Record into a plastic bag, and tape the bag to the inner side of the cooler lid.
9. Close the cooler and securely tape (preferably with fiber tape) the top of the cooler shut. Custody seals should be affixed to the top and sides of the cooler within the securing tape so that the cooler cannot be opened without breaking the seal.
10. Shipping containers (ice cooler) must be marked "THIS END UP", and arrow labels which indicate the proper upward position of the container should be affixed to the container. A label containing the name and address of the shipper should be placed on the containers exterior. Labels

STANDARD OPERATING PROCEDURES
Subsurface Assessment Methodology And Sampling Protocol

Parcel 115 – Tom Morgan Property
633 US Highway 19E, Burnsville, NC 28714
NCDOT R-2519A – Preliminary Site Assessment (March 2006)

used in the shipment of hazardous materials (e.g., Cargo Only Air Craft, Flammable Solids, etc.) are not permitted to be on the outside of containers used to transport environmental samples.

Shipping Note:

"When samples are to be shipped by common carrier or sent through the United States mail, it must comply with the Department of Transportation Hazardous Materials Regulations (49 CFR 172). The person offering such material for transportation is responsible for ensuring such compliance. For the preservation requirements of 40 CFR, Part 136, Table II, the Office of Hazardous Materials, Materials Transportation Bureau, Department of Transportation has determined that the Hazardous Materials Regulations do not apply to the following materials: Hydrochloric Acid (HCL) in water solutions at concentrations of 0.04% by weight or less (pH about 1.96 or greater); Nitric acid (HN03) in water solutions at concentrations of 0.-15% by weight or less (pH about 1.62 or greater); Sulfuric acid (H2SO4) in water solutions at concentrations of 0.35% by weight or less (pH about 1.15 or greater); and Sodium Hydroxide (Na OH) in water solutions at concentrations of 0.08% by weight or less (pH about 12.30 or less). This footnote is wholly reproduced from 40 CFR 136.3, which is definitive".

Sample Transportation

The cooler(s) containing the collected soil samples was shipped overnight via Federal Express, with COC documentation, to Prism Laboratories, Inc. in Charlotte, NC. The following protocol was used for sample handling and transportation:

- 1) The lids on all bottles were tightened to reduce the potential for leakage.
- 2) The sample identification label on each individual laboratory container was covered with a clear piece of plastic tape. Each container was then placed within an appropriately sized polyethylene bag and sealed.
- 3) The containers were placed into a bubble-wrap® lined rectangular ice chest (cooler).
- 4) Ice was placed on top and surrounding bubble-wrap® sample containers. Some of the remaining spaces between the containers were filled with bubble-wrap® and/or ice.
- 5) The cooler drain plug was secured with clear tape.
- 6) The COC's was double plastic bagged and was taped to the inner side of the cooler lid.
- 7) The cooler was closed and securely taped.
- 8) A label with adhesive tape containing the name and address of the shipper and the address of the laboratory was placed on top of the cooler.

DECONTAMINATION PROCEDURES

Decontamination is the process of washing, rinsing and removing contaminants from exposed surfaces of equipment. Decontamination helps prevent the spread of contamination off-site, and avoids cross-contamination to other samples. The decontamination procedures were performed as follows:

- 1) Disposable surgical latex gloves were used in lieu of decontamination procedures to collect soil samples.

The soil samples retained for laboratory analyses were placed in the appropriate clean laboratory prepared containers, labeled and subsequently delivered with chain-of-custody documentation (COC) for analysis. Dates and times of sampling may be referenced on the COC's. Specific laboratory analysis methods are referenced in the text of this Study.

QUALITY ASSURANCE PROTOCOL

Field and Laboratory Control Samples

The purpose of this section is to describe the standard control sampling program that supported the data quality objectives for this site. These control samples will included field control Quality Assurance (QA) samples used to assess sources of error. To minimize or consider the impact these errors have on the resulting data, a combination of unique field QA/QC protocols and control samples were developed to meet the QA overall objectives.

Field Control Samples

The elements of the sampling and field QA/QC strategy included the following:

- (1) El developed a well thought out sampling strategy for the site. The plan adequately and sufficiently outlined the different types of environmental media and protocol to sample the media.
- (2) Sampling methodologies to obtain true representative samples.
- (3) Used decontamination procedures in order to reduce cross-contamination potential between sampling points.
- (4) Used the proper sample containers, and preservation requirements.
- (5) Used the proper storage, and shipping of samples protocol.

Techniques to verify the inclusion of the QA/QC program included scheduled field control samples consisting of field blanks (trip and temperature). The field control samples were

STANDARD OPERATING PROCEDURES
Subsurface Assessment Methodology And Sampling Protocol

Parcel 115 – Tom Morgan Property
633 US Highway 19E, Burnsville, NC 28714
NCDOT R-2519A – Preliminary Site Assessment (March 2006)

handled similarly as the environmental samples.

Quality Control Samples

A trip and temperature blank were collected during this study.

Laboratory QA/QC Procedures

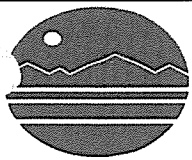
Laboratory QA/QC procedures are implemented in order to prevent, detect, and correct potential errors during the analytical process. The reliability and credibility of analytical laboratories are corroborated by the development and performance of their respective QA/QC programs. For this project, the NCDOT contracted laboratory provided and performed their program as they see fit. Standard practices used by the selected laboratory included the following quality control sample information in their generated reports:

- (a) laboratory method blanks;
- (b) temperature blanks.

INVESTIGATION DERIVED WASTE MANAGEMENT PROTOCOL

The investigation derived waste (IDW) generated during the sampling activities were placed on site. These wastes include any derivative investigative soils leftover from the sampling and backfilling protocol, decontamination water (cleaning of field equipment), bailers, bailer haul-line and PPE equipment, if applicable. The management of IDW for this project complies with applicable or relevant and appropriate requirements (ARAs). The site specific ARAs were followed in consensus with the EPA Standard Operating Procedures (SOP) and Quality Assurance Manual, Region 4 and the *Guidelines For Assessment And Corrective Action*, drafted by the North Carolina Underground Storage Tank Section, effective July 1, 2001.

APPENDIX C
SOIL BORING LOGS



EI

ENVIRONMENTAL INVESTIGATIONS, INC.

2101 Gateway Centre Boulevard, Suite 200
 Morrisville, North Carolina
 919-544-7500

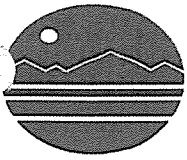
SOIL BORING LOG

Boring No. GP-1
 Date Drilled: 03/29/06

Client:	<u>NCDOT</u>	Logged By:	<u>KDH</u>
Project Name:	<u>Parcel #115</u>	Drilling Company:	<u>SEI</u>
Project/Site Location:	<u>633 US Highway 19E, Burnsville, NC 28714</u>	Drill Device:	<u>GeoProbe 6600</u>
Project Number:	<u>ENMO060029.00</u>	Drill Method:	<u>DPT</u>

Total Boring Depth: 4.57m Weather Conditions: Cool Surface Elevation: _____
 Boring Diameter: 4.0" Boring Location: Delineation boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83				ML	Dark gray sandy SILT (ML), dry to moist.	3.1
8.00	2.44			100%			0.0
10.00	3.05						2.8
12.00	3.66	11:30	x	100%			151.0
14.00	4.27					40.2	
15.00	4.57					2.1	
Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 3.66m - 4.27m (12-14') bls interval collected for laboratory retention.							



E.I.

ENVIRONMENTAL INVESTIGATIONS, INC.

2101 Gateway Centre Boulevard, Suite 200
Morrisville, North Carolina
919-544-7500

SOIL BORING LOG

Boring No. GP-2
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

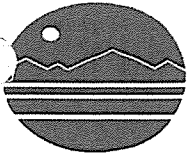
Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 4.57m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Delineation boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83						2.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						0.2
12.00	3.66						0.6
14.00	4.27	11:40	x	100%			NA
15.00	4.57						NA
						Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 3.66m - 4.27m (12-14') bls interval collected for laboratory retention.	



E.I.

ENVIRONMENTAL INVESTIGATIONS, INC.

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Morrisville, North Carolina
919-544-7500

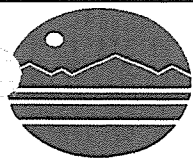
SOIL BORING LOG

Boring No. GP-3
Date Drilled: 03/29/06

Client:	<u>NCDOT</u>	Logged By:	<u>KDH</u>
Project Name:	<u>Parcel #115</u>	Drilling Company:	<u>SEI</u>
Project/Site Location:	<u>633 US Highway 19E, Burnsville, NC 28714</u>	Drill Device:	<u>GeoProbe 6600</u>
Project Number:	<u>ENMO060029.00</u>	Drill Method:	<u>DPT</u>

Total Boring Depth: 4.57m Weather Conditions: Cool Surface Elevation: _____
 Boring Diameter: 4.0" Boring Location: Delineation boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	11:45	x				1.3
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						0.3
12.00	3.66			100%			NA
14.00	4.27						0.1
15.00	4.57						NA
Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 1.22m - 1.83m (4-6') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-4
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

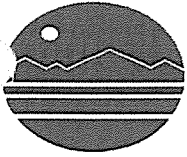
Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 4.57m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Drainage boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	12:00	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
12.00	3.66			100%			NA
14.00	4.27						1.0
15.00	4.57						NA
Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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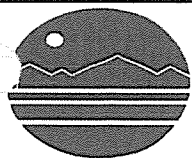
SOIL BORING LOG

Boring No. GP-5
Date Drilled: 03/29/06

Client:	<u>NCDOT</u>	Logged By:	<u>KDH</u>
Project Name:	<u>Parcel #115</u>	Drilling Company:	<u>SEI</u>
Project/Site Location:	<u>633 US Highway 19E, Burnsville, NC 28714</u>	Drill Device:	<u>GeoProbe 6600</u>
Project Number:	<u>ENMO060029.00</u>	Drill Method:	<u>DPT</u>

Total Boring Depth: 4.57m Weather Conditions: Cool Surface Elevation: _____
 Boring Diameter: 4.0" Boring Location: Drainage boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	13:30	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
12.00	3.66			100%			NA
14.00	4.27						1.0
15.00	4.57						NA
Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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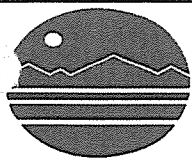
SOIL BORING LOG

Boring No. GP-6
 Date Drilled: 03/29/06

Client:	<u>NCDOT</u>	Logged By:	<u>KDH</u>
Project Name:	<u>Parcel #115</u>	Drilling Company:	<u>SEI</u>
Project/Site Location:	<u>633 US Highway 19E, Burnsville, NC 28714</u>	Drill Device:	<u>GeoProbe 6600</u>
Project Number:	<u>ENMO060029.00</u>	Drill Method:	<u>DPT</u>

Total Boring Depth: 4.57m Weather Conditions: Cool Surface Elevation: _____
 Boring Diameter: 4.0" Boring Location: Drainage boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	15:50	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
12.00	3.66			100%			NA
14.00	4.27						1.0
15.00	4.57						NA
Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-7
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

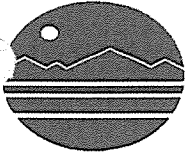
Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 4.57m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Delineation boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	16:00	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
12.00	3.66			100%			NA
14.00	4.27						1.0
15.00	4.57						NA
Boring terminated at 4.57m (15.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

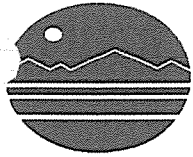
Boring No. GP-8
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m Weather Conditions: Cool Surface Elevation: _____
Boring Diameter: 4.0" Boring Location: Drainage boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	14:50	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-9
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Drainage boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	15:00	x		ML	Dark gray sandy SILT (ML), dry to moist.	0.1
8.00	2.44			100%			0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

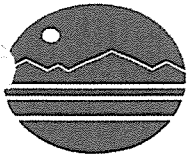
Boring No. GP-10
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m Weather Conditions: Cool Surface Elevation: _____
Boring Diameter: 4.0" Boring Location: Drainage boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	15:10	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

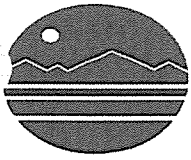
Boring No. GP-11
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m Weather Conditions: Cool Surface Elevation: _____
Boring Diameter: 4.0" Boring Location: Drainage boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	15:30	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
						Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.	



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SOIL BORING LOG

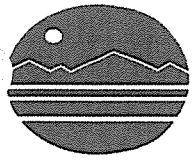
Boring No. GP-12
Date Drilled: 03/29/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: KDH
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m Weather Conditions: Cool Surface Elevation: _____
Boring Diameter: 4.0" Boring Location: Drainage boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	16:30	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-13
Date Drilled: 04/20/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

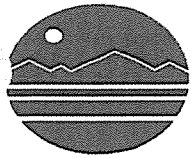
Logged By: RMS
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Delineation Boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	NA	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

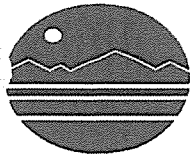
Boring No. GP-14
Date Drilled: 04/20/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: RMS
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m Weather Conditions: Cool Surface Elevation: _____
Boring Diameter: 4.0" Boring Location: Delineation Boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	NA	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

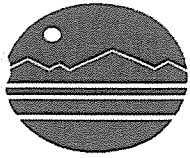
Boring No. GP-15
Date Drilled: 04/20/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: RMS
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m Weather Conditions: Cool Surface Elevation: _____
Boring Diameter: 4.0" Boring Location: Delineation Boring

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	NA	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-16
Date Drilled: 04/20/06

Client:	<u>NCDOT</u>	Logged By:	<u>RMS</u>
Project Name:	<u>Parcel #115</u>	Drilling Company:	<u>SEI</u>
Project/Site Location:	<u>633 US Highway 19E, Burnsville, NC 28714</u>	Drill Device:	<u>GeoProbe 6600</u>
Project Number:	<u>ENMO060029.00</u>	Drill Method:	<u>DPT</u>

Total Boring Depth:	<u>3.05m</u>	Weather Conditions:	<u>Cool</u>	Surface Elevation:	<u> </u>
Boring Diameter:	<u>4.0"</u>	Boring Location:	<u>Delineation Boring</u>		

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	NA	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-17
Date Drilled: 04/20/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

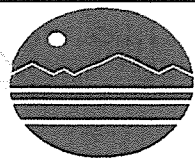
Logged By: RMS
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Delineation Boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	NA	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							



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SOIL BORING LOG

Boring No. GP-18
Date Drilled: 04/20/06

Client: NCDOT
Project Name: Parcel #115
Project/Site Location: 633 US Highway 19E, Burnsville, NC 28714
Project Number: ENMO060029.00

Logged By: RMS
Drilling Company: SEI
Drill Device: GeoProbe 6600
Drill Method: DPT

Total Boring Depth: 3.05m
Boring Diameter: 4.0"

Weather Conditions: Cool
Boring Location: Delineation Boring

Surface Elevation: _____

Depth (Feet)	Depth (meters)	Time	Sample Analyzed	Recovery	Soil Profile	Lithological Description	Sample PID (ppm)
2.00	0.61			100%	CL	Red to light brown sandy CLAY (CL), dry.	NA
4.00	1.22						NA
6.00	1.83	NA	x				0.1
8.00	2.44			100%	ML	Dark gray sandy SILT (ML), dry to moist.	0.0
10.00	3.05						1.0
Boring terminated at 3.05m (10.0') bls. x denotes soil sample at 1.83m - 2.44m (6-8') bls interval collected for laboratory retention.							

APPENDIX D
LABORATORY RESULTS

Case Narrative



Date: 04/20/06

Company: NC Dept. of Transportation
Contact: c/o EI / Bob Shaut
Address: Suite 200
2101 Gateway Centre Blvd.
Morrisville, NC 27560

Client Project ID: Parcel 115/NC DOT-Burnsville NC
Client Project Name or No: WBS# 35609.1.1
Prism COC Group No: G0306858
Collection Date(s): 03/30/06
Lab Submittal Date: 03/31/06

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 14 pages. A chain-of-custody is also attached for the samples submitted to Prism for this project.

Data qualifiers are flagged individually on each sample. A Key Reference for the data qualifiers appears at the bottom of this page. Quality control statements and/or sample specific remarks are included in the sample comments section of the laboratory report for each sample affected.

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

Data Reviewed by: Robbi A. Jones

Signature: Robbi A. Jones
Review Date: 04/20/06

Project Manager: Angela D. Overcash

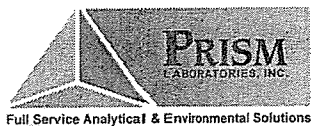
Signature: Robbi A. Jones for Angela Overcash
Approval Date: 04/20/06

Data Qualifier Key Reference:

- #: Result outside of QC Limits
- B: Compound also detected in the method blank
- DO: Compound diluted out.
- E: Estimated concentration, calibration range exceeded
- J: The analyte was positively identified but the value is estimated below the reporting limit
- JH: Estimated concentration with a high bias
- JL: Estimated concentration with a low bias
- M: A matrix effect is present
- T: Tentatively identified compound. The concentration is estimated.

Notes: This report should not be reproduced, except in its entirety, without the written consent of Prism Laboratories, Inc. The results in this report relate only to the samples submitted for analysis.

449 Springbrook Road, P. O. Box 240543, Charlotte, NC 28224-0403
Phone: 704/529-6364 Toll Free: 800/529-6364 Fax: 704/525-0409



NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

04/20/06

Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1
 Sample Matrix: Water

Client Sample ID: W-1
 Prism Sample ID: 146455
 COC Group: G0306858
 Time Collected: 03/30/06 16:00
 Time Submitted: 03/31/06 13:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Purgeable Aromatics by GC-PID									
Benzene	BRL	µg/L	0.50	0.090	1	601/602	04/08/06 21:38	erussell	Q13830
Ethylbenzene	BRL	µg/L	1.0	0.13	1	601/602	04/08/06 21:38	erussell	Q13830
Isopropyl ether (IPE)	15	µg/L	5.0	0.041	1	601/602	04/08/06 21:38	erussell	Q13830
m,p-Xylenes	7.6	µg/L	2.0	0.43	1	601/602	04/08/06 21:38	erussell	Q13830
Methyl t-butyl ether (MTBE)	430	µg/L	50	2.8	10	601/602	04/11/06 11:59	erussell	Q13830
Naphthalene	BRL	µg/L	1.0	0.28	1	601/602	04/08/06 21:38	erussell	Q13830
o-Xylene	BRL	µg/L	1.0	0.29	1	601/602	04/08/06 21:38	erussell	Q13830
Toluene	BRL	µg/L	1.0	0.13	1	601/602	04/08/06 21:38	erussell	Q13830

Surrogate	% Recovery	Control Limits
1,4-Difluorobenzene-PID	104	69 - 140

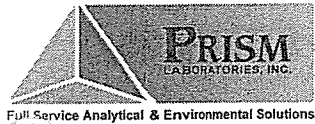
Semivolatile Organic Compounds by GC/MS

1,2,4-Trichlorobenzene	BRL	µg/L	9.7	2.4	1	625	04/07/06 22:41	kelliott	Q13852
1,2-Dichlorobenzene	BRL	µg/L	9.7	2.6	1	625	04/07/06 22:41	kelliott	Q13852
1,3-Dichlorobenzene	BRL	µg/L	9.7	1.8	1	625	04/07/06 22:41	kelliott	Q13852
1,4-Dichlorobenzene	BRL	µg/L	9.7	2.3	1	625	04/07/06 22:41	kelliott	Q13852
2,4,5-Trichlorophenol	BRL	µg/L	9.7	2.5	1	625	04/07/06 22:41	kelliott	Q13852
2,4,6-Trichlorophenol	BRL	µg/L	9.7	1.7	1	625	04/07/06 22:41	kelliott	Q13852
2,4-Dichlorophenol	BRL	µg/L	9.7	1.8	1	625	04/07/06 22:41	kelliott	Q13852
2,4-Dimethylphenol	BRL	µg/L	9.7	0.65	1	625	04/07/06 22:41	kelliott	Q13852
2,4-Dinitrophenol	BRL	µg/L	49	0.65	1	625	04/07/06 22:41	kelliott	Q13852
2,4-Dinitrotoluene	BRL	µg/L	9.7	0.82	1	625	04/07/06 22:41	kelliott	Q13852
2,6-Dinitrotoluene	BRL	µg/L	9.7	1.6	1	625	04/07/06 22:41	kelliott	Q13852
2-Chloronaphthalene	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliott	Q13852
2-Chlorophenol	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliott	Q13852
2-Ethylphenol	BRL	µg/L	9.7	2.7	1	625	04/07/06 22:41	kelliott	Q13852

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NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

04/20/06

North Carolina Department of Transportation
 Attn: Bob Shaut/El
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1
 Sample Matrix: Water

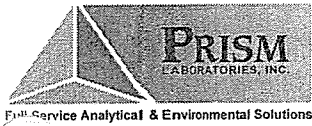
Client Sample ID: W-1
 Prism Sample ID: 146455
 COC Group: G0306858
 Time Collected: 03/30/06 16:00
 Time Submitted: 03/31/06 13:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
2-Nitrophenol	BRL	µg/L	9.7	2.2	1	625	04/07/06 22:41	kelliot	Q13852
3&4-Methylphenol	BRL	µg/L	9.7	3.6	1	625	04/07/06 22:41	kelliot	Q13852
3,3'-Dichlorobenzidine	BRL	µg/L	49	9.1	1	625	04/07/06 22:41	kelliot	Q13852
4,6-Dinitro-2-methylphenol	BRL	µg/L	49	0.85	1	625	04/07/06 22:41	kelliot	Q13852
4-Bromophenylphenylether	BRL	µg/L	9.7	1.9	1	625	04/07/06 22:41	kelliot	Q13852
4-Chloro-3-methylphenol	BRL	µg/L	9.7	1.7	1	625	04/07/06 22:41	kelliot	Q13852
4-Chlorophenylphenylether	BRL	µg/L	9.7	1.6	1	625	04/07/06 22:41	kelliot	Q13852
4-Nitrophenol	BRL	µg/L	49	0.58	1	625	04/07/06 22:41	kelliot	Q13852
Acenaphthene	BRL	µg/L	9.7	1.8	1	625	04/07/06 22:41	kelliot	Q13852
Acenaphthylene	BRL	µg/L	9.7	2.0	1	625	04/07/06 22:41	kelliot	Q13852
Anthracene	BRL	µg/L	9.7	0.95	1	625	04/07/06 22:41	kelliot	Q13852
Benzo(a)anthracene	BRL	µg/L	9.7	0.91	1	625	04/07/06 22:41	kelliot	Q13852
Benzo(a)pyrene	BRL	µg/L	9.7	0.97	1	625	04/07/06 22:41	kelliot	Q13852
Benzo(b)fluoranthene	BRL	µg/L	9.7	1.7	1	625	04/07/06 22:41	kelliot	Q13852
Benzo(g,h,i)perylene	BRL	µg/L	9.7	2.0	1	625	04/07/06 22:41	kelliot	Q13852
Benzo(k)fluoranthene	BRL	µg/L	9.7	1.8	1	625	04/07/06 22:41	kelliot	Q13852
Bis(2-chloroethoxy)methane	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliot	Q13852
Bis(2-chloroethyl)ether	BRL	µg/L	9.7	2.0	1	625	04/07/06 22:41	kelliot	Q13852
Bis(2-chloroisopropyl)ether	BRL	µg/L	9.7	2.3	1	625	04/07/06 22:41	kelliot	Q13852
Bis(2-ethylhexyl)phthalate	BRL	µg/L	9.7	0.69	1	625	04/07/06 22:41	kelliot	Q13852
Butylbenzylphthalate	BRL	µg/L	9.7	0.68	1	625	04/07/06 22:41	kelliot	Q13852
Chrysene	BRL	µg/L	9.7	0.55	1	625	04/07/06 22:41	kelliot	Q13852
Di-n-butylphthalate	BRL	µg/L	9.7	1.4	1	625	04/07/06 22:41	kelliot	Q13852
Di-n-octylphthalate	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliot	Q13852
Dibenzo(a,h)anthracene	BRL	µg/L	9.7	1.1	1	625	04/07/06 22:41	kelliot	Q13852
Dibenzofuran	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliot	Q13852
Dibenzylphthalate	BRL	µg/L	9.7	1.1	1	625	04/07/06 22:41	kelliot	Q13852
Dimethylphthalate	BRL	µg/L	9.7	1.4	1	625	04/07/06 22:41	kelliot	Q13852

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NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Laboratory Report

04/20/06

NC Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1
 Sample Matrix: Water

Client Sample ID: W-1
 Prism Sample ID: 146455
 COC Group: G0306858
 Time Collected: 03/30/06 16:00
 Time Submitted: 03/31/06 13:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Fluoranthene	BRL	µg/L	9.7	0.91	1	625	04/07/06 22:41	kelliot	Q13852
Fluorene	BRL	µg/L	9.7	1.4	1	625	04/07/06 22:41	kelliot	Q13852
Hexachlorobenzene	BRL	µg/L	9.7	1.3	1	625	04/07/06 22:41	kelliot	Q13852
Hexachlorobutadiene	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliot	Q13852
Hexachlorocyclopentadiene	BRL	µg/L	9.7	2.3	1	625	04/07/06 22:41	kelliot	Q13852
Hexachloroethane	BRL	µg/L	9.7	1.7	1	625	04/07/06 22:41	kelliot	Q13852
Indeno(1,2,3-cd)pyrene	BRL	µg/L	9.7	1.7	1	625	04/07/06 22:41	kelliot	Q13852
Isophorone	BRL	µg/L	9.7	1.6	1	625	04/07/06 22:41	kelliot	Q13852
N-Nitrosodi-n-propylamine	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliot	Q13852
Anthracene	BRL	µg/L	9.7	2.1	1	625	04/07/06 22:41	kelliot	Q13852
Nitrobenzene	BRL	µg/L	9.7	1.8	1	625	04/07/06 22:41	kelliot	Q13852
Pentachlorophenol	BRL	µg/L	9.7	1.7	1	625	04/07/06 22:41	kelliot	Q13852
Phenanthrene	BRL	µg/L	9.7	0.87	1	625	04/07/06 22:41	kelliot	Q13852
Phenol	BRL	µg/L	9.7	0.87	1	625	04/07/06 22:41	kelliot	Q13852
Pyrene	BRL	µg/L	9.7	0.88	1	625	04/07/06 22:41	kelliot	Q13852

Sample Preparation: 1030 mL / 1 mL 625 04/03/06 12:00 smanivanh P15033

Surrogate	% Recovery	Control Limits
Terphenyl-d14	81	10 - 154
2,4,6-Tribromophenol	55	27 - 125
Phenol-d5	12	10 - 48
2-Fluorobiphenyl	65	29 - 112
Nitrobenzene-d5	66	22 - 103
2-Fluorophenol	16	10 - 59

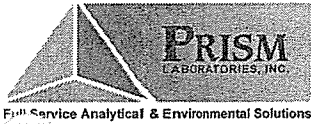
TIC's By 625

Est.Conc	Units
Unknown	13 µg/L

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Laboratory Report

04/20/06

Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1
 Sample Matrix: Water

Client Sample ID: W-1
 Prism Sample ID: 146455
 COC Group: G0306858
 Time Collected: 03/30/06 16:00
 Time Submitted: 03/31/06 13:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Extractable Petroleum Hydrocarbons by GC-FID

C11-C22 Aromatics	BRL	µg/L	100	71	1	MADEP EPH	04/12/06 14:41	grappaccioli	Q13970
C19-C36 Aliphatics	BRL	µg/L	100	31	1	MADEP EPH	04/12/06 14:41	grappaccioli	Q13970
C9-C18 Aliphatics	BRL	µg/L	100	75	1	MADEP EPH	04/12/06 14:41	grappaccioli	Q13970

* Analysis Note for C11-C22 Aromatics: Adjusted value.

Sample Preparation: 1000 mL / 2 mL EPH 04/10/06 8:00 smanivanh P15099

Surrogate	% Recovery	Control Limits
o-Terphenyl	100	40 - 140
1-Chloro-octadecane	116	40 - 140
2-Bromonaphthalene	94	40 - 140
2-Fluorobiphenyl	94	40 - 140

Volatile Petroleum Hydrocarbons by GC-PID/FID

C5-C8 Aliphatics	200	µg/L	100	50	1	MADEP VPH	04/06/06 17:17	javogel	Q13860
C9-C10 Aromatics	BRL	µg/L	100	35	1	MADEP VPH	04/06/06 17:17	javogel	Q13860
C9-C12 Aliphatics	BRL	µg/L	100	50	1	MADEP VPH	04/06/06 17:17	javogel	Q13860

* Analysis Note for C5-C8 Aliphatics: Adjusted value.

* Analysis Note for C9-C12 Aliphatics: Adjusted value.

Surrogate	% Recovery	Control Limits
2,5-Dibromotoluene-FID	103	70 - 130
2,5-Dibromotoluene-PID	79	70 - 130

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NC Certification No. 402
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 NC Drinking Water Cert. No. 37735

Laboratory Report

04/20/06

N.C. Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1
 Sample Matrix: Water

Client Sample ID: W-1
 Prism Sample ID: 146455
 COC Group: G0306858
 Time Collected: 03/30/06 16:00
 Time Submitted: 03/31/06 13:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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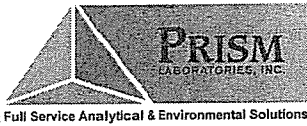
Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

Angela D. Overcash, V.P. Laboratory Services



NC Certification No. 402
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 NC Drinking Water Cert. No. 37735

Level II QC Report

4/20/2006

N. C. Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1

COC Group Number: G0306858
 Date/Time Submitted: 3/31/2006 13:35

Purgeable Aromatics by GC-PID, method 601/602

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Benzene	ND	0.5	<0.25	µg/L	Q13830
Ethylbenzene	ND	1	<0.5	µg/L	Q13830
Isopropyl ether (IPE)	ND	5	<2.5	µg/L	Q13830
m,p-Xylenes	ND	2	<1	µg/L	Q13830
Methyl t-butyl ether (MTBE)	ND	5	<2.5	µg/L	Q13830
Naphthalene	ND	1	<0.5	µg/L	Q13830
o-Xylene	ND	1	<0.5	µg/L	Q13830
Toluene	ND	1	<0.5	µg/L	Q13830

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Benzene	20.6	20	µg/L	103	39 - 150	Q13830
Ethylbenzene	20.0	20	µg/L	100	32 - 160	Q13830
Isopropyl ether (IPE)	20.7	20	µg/L	103	61 - 134	Q13830
m,p-Xylenes	40.7	40	µg/L	102	65 - 130	Q13830
Methyl t-butyl ether (MTBE)	21.2	20	µg/L	106	74 - 130	Q13830
Naphthalene	20.5	20	µg/L	102	60 - 136	Q13830
o-Xylene	18.0	20	µg/L	90	66 - 129	Q13830
Toluene	20.0	20	µg/L	100	46 - 148	Q13830

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
146584	Benzene	83.612	80	µg/L	105	39 - 150	Q13830
	Ethylbenzene	83.560	80	µg/L	104	32 - 160	Q13830
	Isopropyl ether (IPE)	85.780	80	µg/L	107	60 - 132	Q13830
	m,p-Xylenes	166.760	160	µg/L	104	65 - 130	Q13830
	Methyl t-butyl ether (MTBE)	92.360	80	µg/L	110	73 - 130	Q13830
	Naphthalene	83.648	80	µg/L	105	58 - 132	Q13830
	o-Xylene	69.596	80	µg/L	87	66 - 129	Q13830
	Toluene	82.328	80	µg/L	103	46 - 148	Q13830

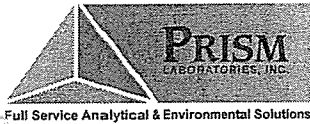
Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
146584	Benzene	80.8	80	µg/L	101	39 - 150	3	0 - 12	Q13830
	Ethylbenzene	79.4	80	µg/L	99	32 - 160	5	0 - 15	Q13830
	Isopropyl ether (IPE)	83.8	80	µg/L	105	60 - 132	2	0 - 16	Q13830
	m,p-Xylenes	161	160	µg/L	101	65 - 130	4	0 - 21	Q13830
	Methyl t-butyl ether (MTBE)	93.2	80	µg/L	111	73 - 130	1	0 - 26	Q13830
	Naphthalene	86.4	80	µg/L	108	58 - 132	3	0 - 28	Q13830
	o-Xylene	71.7	80	µg/L	90	66 - 129	3	0 - 15	Q13830
	Toluene	79.1	80	µg/L	99	46 - 148	4	0 - 14	Q13830

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Level II QC Report

4/20/2006

N. C. Department of Transportation
Attn: Bob Shaut/EI
c/o Environmental Investigations, Inc
2101 Gateway Centre Blvd. Ste 200
Morrisville, NC 27560

Project Name: Burnsville, NC
Project ID: NCDOT Parcel 115
Project No.: WBS# 35609.1.1

COC Group Number: G0306858
Date/Time Submitted: 3/31/2006 13:35

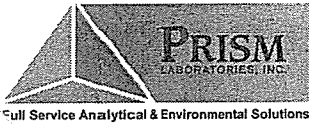
Semivolatile Organic Compounds by GC/MS, method 625

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
1,2,4-Trichlorobenzene	ND	10	<5	µg/L	Q13852
1,2-Dichlorobenzene	ND	10	<5	µg/L	Q13852
1,3-Dichlorobenzene	ND	10	<5	µg/L	Q13852
1,4-Dichlorobenzene	ND	10	<5	µg/L	Q13852
2,4,5-Trichlorophenol	ND	10	<5	µg/L	Q13852
2,4,6-Trichlorophenol	ND	10	<5	µg/L	Q13852
2,4-Dichlorophenol	ND	10	<5	µg/L	Q13852
2,4-Dimethylphenol	ND	10	<5	µg/L	Q13852
2,4-Dinitrophenol	ND	50	<25	µg/L	Q13852
2,4-Dinitrotoluene	ND	10	<5	µg/L	Q13852
2,6-Dinitrotoluene	ND	10	<5	µg/L	Q13852
2-Chloronaphthalene	ND	10	<5	µg/L	Q13852
2-Chlorophenol	ND	10	<5	µg/L	Q13852
2-Methylphenol	ND	10	<5	µg/L	Q13852
2-Nitrophenol	ND	10	<5	µg/L	Q13852
3&4-Methylphenol	ND	10	<5	µg/L	Q13852
3,3'-Dichlorobenzidine	ND	50	<25	µg/L	Q13852
4,6-Dinitro-2-methylphenol	ND	50	<25	µg/L	Q13852
4-Bromophenylphenylether	ND	10	<5	µg/L	Q13852
4-Chloro-3-methylphenol	ND	10	<5	µg/L	Q13852
4-Chlorophenylphenylether	ND	10	<5	µg/L	Q13852
4-Nitrophenol	ND	50	<25	µg/L	Q13852
Acenaphthene	ND	10	<5	µg/L	Q13852
Acenaphthylene	ND	10	<5	µg/L	Q13852
Anthracene	ND	10	<5	µg/L	Q13852
Benzo(a)anthracene	ND	10	<5	µg/L	Q13852
Benzo(a)pyrene	ND	10	<5	µg/L	Q13852
Benzo(b)fluoranthene	ND	10	<5	µg/L	Q13852
Benzo(g,h,i)perylene	ND	10	<5	µg/L	Q13852
Benzo(k)fluoranthene	ND	10	<5	µg/L	Q13852
Bis(2-chloroethoxy)methane	ND	10	<5	µg/L	Q13852
Bis(2-chloroethyl)ether	ND	10	<5	µg/L	Q13852
Bis(2-chloroisopropyl)ether	ND	10	<5	µg/L	Q13852
Bis(2-ethylhexyl)phthalate	ND	10	<5	µg/L	Q13852
Butylbenzylphthalate	ND	10	<5	µg/L	Q13852
Chrysene	ND	10	<5	µg/L	Q13852
Di-n-butylphthalate	ND	10	<5	µg/L	Q13852
Di-n-octylphthalate	ND	10	<5	µg/L	Q13852
Dibenzo(a,h)anthracene	ND	10	<5	µg/L	Q13852
Dibenzofuran	ND	10	<5	µg/L	Q13852
Diethylphthalate	ND	10	<5	µg/L	Q13852
Dimethylphthalate	ND	10	<5	µg/L	Q13852

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 NC Drinking Water Cert. No. 37735

Level II QC Report

4/20/2006

N. C. Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1

COC Group Number: G0306858
 Date/Time Submitted: 3/31/2006 13:35

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Fluoranthene	ND	10	<5	µg/L	Q13852
Fluorene	ND	10	<5	µg/L	Q13852
Hexachlorobenzene	ND	10	<5	µg/L	Q13852
Hexachlorobutadiene	ND	10	<5	µg/L	Q13852
Hexachlorocyclopentadiene	ND	10	<5	µg/L	Q13852
Hexachloroethane	ND	10	<5	µg/L	Q13852
Indeno(1,2,3-cd)pyrene	ND	10	<5	µg/L	Q13852
Isophorone	ND	10	<5	µg/L	Q13852
N-Nitrosodi-n-propylamine	ND	10	<5	µg/L	Q13852
Naphthalene	ND	10	<5	µg/L	Q13852
Nitrobenzene	ND	10	<5	µg/L	Q13852
Pentachlorophenol	ND	10	<5	µg/L	Q13852
Phenanthrene	ND	10	<5	µg/L	Q13852
Phenol	ND	10	<5	µg/L	Q13852
Pyrene	ND	10	<5	µg/L	Q13852

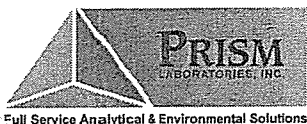
Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
1,2,4-Trichlorobenzene	71.3	100	µg/L	71	44 - 142	Q13852
1,2-Dichlorobenzene	69.9	100	µg/L	70	32 - 129	Q13852
1,3-Dichlorobenzene	68.8	100	µg/L	69	20 - 124	Q13852
1,4-Dichlorobenzene	67.1	100	µg/L	67	20 - 124	Q13852
2,4,6-Trichlorophenol	69.7	100	µg/L	70	37 - 144	Q13852
2,4-Dichlorophenol	62.4	100	µg/L	62	39 - 135	Q13852
2,4-Dimethylphenol	63.2	100	µg/L	63	32 - 119	Q13852
2,4-Dinitrophenol	76.3	100	µg/L	76	10 - 191	Q13852
2,4-Dinitrotoluene	90.9	100	µg/L	91	39 - 139	Q13852
2,6-Dinitrotoluene	96.7	100	µg/L	97	50 - 158	Q13852
2-Chloronaphthalene	80.1	100	µg/L	80	60 - 118	Q13852
2-Chlorophenol	55.7	100	µg/L	56	23 - 134	Q13852
2-Nitrophenol	71.3	100	µg/L	71	29 - 182	Q13852
3,3'-Dichlorobenzidine	97.6	100	µg/L	98	10 - 262	Q13852
4,6-Dinitro-2-methylphenol	86.0	100	µg/L	86	10 - 181	Q13852
4-Bromophenylphenylether	73.1	100	µg/L	73	53 - 127	Q13852
4-Chloro-3-methylphenol	60.9	100	µg/L	61	22 - 147	Q13852
4-Chlorophenylphenylether	77.7	100	µg/L	78	25 - 158	Q13852
4-Nitrophenol	23.8	100	µg/L	24	10 - 132	Q13852
Acenaphthene	77.6	100	µg/L	78	47 - 145	Q13852
Acenaphthylene	83.1	100	µg/L	83	33 - 145	Q13852
Anthracene	72.3	100	µg/L	72	27 - 133	Q13852
Benzo(a)anthracene	62.2	100	µg/L	62	33 - 143	Q13852
Benzo(a)pyrene	90.4	100	µg/L	90	17 - 163	Q13852
Benzo(b)fluoranthene	96.4	100	µg/L	96	24 - 159	Q13852
Benzo(g,h,i)perylene	49.7	100	µg/L	50	10 - 219	Q13852

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NC Certification No. 402
 SC Certification No. 99012
 NC Drinking Water Cert. No. 37735

Level II QC Report

4/20/2006

N. C. Department of Transportation
 Attn: Bob Shaut/EI
 c/o Environmental Investigations, Inc
 2101 Gateway Centre Blvd. Ste 200
 Morrisville, NC 27560

Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1

COC Group Number: G0306858
 Date/Time Submitted: 3/31/2006 13:35

Laboratory Control Sample

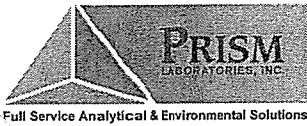
	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Benzo(k)fluoranthene	93.6	100	µg/L	94	11 - 162	Q13852
Bis(2-chloroethoxy)methane	74.3	100	µg/L	74	33 - 184	Q13852
Bis(2-chloroethyl)ether	63.6	100	µg/L	64	12 - 158	Q13852
Bis(2-chloroisopropyl)ether	73.9	100	µg/L	74	36 - 166	Q13852
Bis(2-ethylhexyl)phthalate	95.1	100	µg/L	95	10 - 158	Q13852
Butylbenzylphthalate	91.3	100	µg/L	91	10 - 152	Q13852
Chrysene	59.9	100	µg/L	60	17 - 168	Q13852
Di-n-butylphthalate	83.3	100	µg/L	83	10 - 118	Q13852
Di-n-octylphthalate	102	100	µg/L	102	10 - 146	Q13852
Dibenzo(a,h)anthracene	59.2	100	µg/L	59	10 - 227	Q13852
Diethylphthalate	86.5	100	µg/L	87	10 - 114	Q13852
Dimethylphthalate	66.1	100	µg/L	66	10 - 112	Q13852
Fluoranthene	70.4	100	µg/L	70	26 - 137	Q13852
Fluorene	88.9	100	µg/L	89	59 - 121	Q13852
Hexachlorobenzene	74.6	100	µg/L	75	10 - 152	Q13852
Hexachlorobutadiene	70.3	100	µg/L	70	24 - 116	Q13852
Hexachloroethane	64.6	100	µg/L	65	40 - 113	Q13852
Indeno(1,2,3-cd)pyrene	58.4	100	µg/L	58	10 - 171	Q13852
Isophorone	83.7	100	µg/L	84	21 - 196	Q13852
N-Nitrosodi-n-propylamine	87.0	100	µg/L	87	10 - 230	Q13852
Naphthalene	73.9	100	µg/L	74	21 - 133	Q13852
Nitrobenzene	87.7	100	µg/L	88	35 - 180	Q13852
Pentachlorophenol	86.0	100	µg/L	86	14 - 176	Q13852
Phenanthrene	83.4	100	µg/L	83	54 - 120	Q13852
Phenol	21.7	100	µg/L	22	10 - 112	Q13852
Pyrene	97.4	100	µg/L	97	52 - 115	Q13852

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
146404	1,2,4-Trichlorobenzene	138.627	196.08	µg/L	71	44 - 142	Q13852
	1,2-Dichlorobenzene	132.667	196.08	µg/L	68	32 - 129	Q13852
	1,3-Dichlorobenzene	128.647	196.08	µg/L	66	20 - 124	Q13852
	1,4-Dichlorobenzene	133.294	196.08	µg/L	68	20 - 124	Q13852
	2,4,6-Trichlorophenol	122.294	196.08	µg/L	62	37 - 144	Q13852
	2,4-Dichlorophenol	123.039	196.08	µg/L	63	39 - 135	Q13852
	2,4-Dimethylphenol	113.000	196.08	µg/L	58	32 - 119	Q13852
	2,4-Dinitrophenol	64.784	196.08	µg/L	33	10 - 191	Q13852
	2,4-Dinitrotoluene	187.059	196.08	µg/L	95	39 - 139	Q13852
	2,6-Dinitrotoluene	171.902	196.08	µg/L	88	50 - 158	Q13852
	2-Chloronaphthalene	150.765	196.08	µg/L	77	60 - 118	Q13852
	2-Chlorophenol	109.078	196.08	µg/L	56	23 - 134	Q13852
	2-Nitrophenol	137.294	196.08	µg/L	70	29 - 182	Q13852
	3,3'-Dichlorobenzidine	184.294	196.08	µg/L	94	10 - 262	Q13852
	4,6-Dinitro-2-methylphenol	102.078	196.08	µg/L	52	10 - 181	Q13852

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 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1

COC Group Number: G0306858
 Date/Time Submitted: 3/31/2006 13:35

Matrix Spike

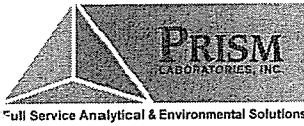
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
4-Bromophenylphenylether	142.451	196.08	µg/L	73	53 - 127	Q13852
4-Chloro-3-methylphenol	127.588	196.08	µg/L	65	22 - 147	Q13852
4-Chlorophenylphenylether	148.765	196.08	µg/L	76	25 - 158	Q13852
4-Nitrophenol	46.353	196.08	µg/L	24	10 - 132	Q13852
Acenaphthene	143.275	196.08	µg/L	73	47 - 145	Q13852
Acenaphthylene	158.216	196.08	µg/L	81	33 - 145	Q13852
Anthracene	145.118	196.08	µg/L	74	27 - 133	Q13852
Benzo(a)anthracene	123.039	196.08	µg/L	63	33 - 143	Q13852
Benzo(a)pyrene	157.588	196.08	µg/L	80	17 - 163	Q13852
Benzo(b)fluoranthene	199.471	196.08	µg/L	102	24 - 159	Q13852
Benzo(g,h,i)perylene	88.980	196.08	µg/L	45	10 - 219	Q13852
Benzo(k)fluoranthene	135.039	196.08	µg/L	69	11 - 162	Q13852
Bis(2-chloroethoxy)methane	142.529	196.08	µg/L	73	33 - 184	Q13852
Bis(2-chloroethyl)ether	120.569	196.08	µg/L	61	12 - 158	Q13852
Bis(2-chloroisopropyl)ether	138.157	196.08	µg/L	70	36 - 166	Q13852
Bis(2-ethylhexyl)phthalate	177.471	196.08	µg/L	91	10 - 158	Q13852
Butylbenzylphthalate	178.569	196.08	µg/L	91	10 - 152	Q13852
Chrysene	113.882	196.08	µg/L	58	17 - 168	Q13852
Di-n-butylphthalate	160.784	196.08	µg/L	82	10 - 118	Q13852
Di-n-octylphthalate	197.627	196.08	µg/L	101	10 - 146	Q13852
Dibenzo(a,h)anthracene	106.667	196.08	µg/L	54	10 - 227	Q13852
Diethylphthalate	158.608	196.08	µg/L	81	10 - 114	Q13852
Dimethylphthalate	140.157	196.08	µg/L	71	10 - 112	Q13852
Fluoranthene	132.647	196.08	µg/L	68	26 - 137	Q13852
Fluorene	167.020	196.08	µg/L	85	59 - 121	Q13852
Hexachlorobenzene	143.216	196.08	µg/L	73	10 - 152	Q13852
Hexachlorobutadiene	138.922	196.08	µg/L	71	24 - 116	Q13852
Hexachloroethane	125.216	196.08	µg/L	64	40 - 113	Q13852
Indeno(1,2,3-cd)pyrene	113.078	196.08	µg/L	58	10 - 171	Q13852
Isophorone	157.647	196.08	µg/L	80	21 - 196	Q13852
N-Nitrosodi-n-propylamine	160.392	196.08	µg/L	82	10 - 230	Q13852
Naphthalene	144.510	196.08	µg/L	74	21 - 133	Q13852
Nitrobenzene	174.765	196.08	µg/L	89	35 - 180	Q13852
Pentachlorophenol	118.176	196.08	µg/L	60	14 - 176	Q13852
Phenanthrene	161.529	196.08	µg/L	82	54 - 120	Q13852
Phenol	57.039	196.08	µg/L	29	10 - 112	Q13852
Pyrene	187.549	196.08	µg/L	96	52 - 115	Q13852

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
146404	124	196.08	µg/L	75	44 - 142	6	0 - 36	Q13852
	137	196.08	µg/L	70	32 - 129	3	0 - 38	Q13852
	142	196.08	µg/L	73	20 - 124	10	0 - 41	Q13852
	139	196.08	µg/L	71	20 - 124	4	0 - 36	Q13852

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Project Name: Burnsville, NC
 Project ID: NCDOT Parcel 115
 Project No.: WBS# 35609.1.1

COC Group Number: G0306858
 Date/Time Submitted: 3/31/2006 13:35

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
2,4,6-Trichlorophenol	129	196.08	µg/L	66	37 - 144	5	0 - 30	Q13852
2,4-Dichlorophenol	135	196.08	µg/L	69	39 - 135	9	0 - 31	Q13852
2,4-Dimethylphenol	117	196.08	µg/L	60	32 - 119	4	0 - 26	Q13852
2,4-Dinitrophenol	69.1	196.08	µg/L	35	10 - 191	6	0 - 30	Q13852
2,4-Dinitrotoluene	175	196.08	µg/L	89	39 - 139	7	0 - 29	Q13852
2,6-Dinitrotoluene	187	196.08	µg/L	96	50 - 158	9	0 - 15	Q13852
2-Chloronaphthalene	153	196.08	µg/L	78	60 - 118	1	0 - 21	Q13852
2-Chlorophenol	120	196.08	µg/L	61	23 - 134	9	0 - 35	Q13852
2-Nitrophenol	144	196.08	µg/L	73	29 - 182	5	0 - 34	Q13852
3,3'-Dichlorobenzidine	196	196.08	µg/L	100	10 - 262	6	0 - 50	Q13852
4,6-Dinitro-2-methylphenol	115	196.08	µg/L	59	10 - 181	12	0 - 19	Q13852
4-Bromophenylphenylether	145	196.08	µg/L	74	53 - 127	2	0 - 18	Q13852
4-Chloro-3-methylphenol	138	196.08	µg/L	71	22 - 147	8	0 - 33	Q13852
4-Chlorophenylphenylether	149	196.08	µg/L	76	25 - 158	0	0 - 19	Q13852
4-Nitrophenol	47.9	196.08	µg/L	24	10 - 132	3	0 - 50	Q13852
Acenaphthene	164	196.08	µg/L	83	47 - 145	13	0 - 20	Q13852
Acenaphthylene	158	196.08	µg/L	81	33 - 145	0	0 - 24	Q13852
Anthracene	141	196.08	µg/L	72	27 - 133	3	0 - 30	Q13852
Benzo(a)anthracene	126	196.08	µg/L	64	33 - 143	2	0 - 26	Q13852
Benzo(a)pyrene	169	196.08	µg/L	86	17 - 163	7	0 - 25	Q13852
Benzo(b)fluoranthene	210	196.08	µg/L	107	24 - 159	5	0 - 29	Q13852
Benzo(g,h,i)perylene	110	196.08	µg/L	56	10 - 219	21	0 - 27	Q13852
Benzo(k)fluoranthene	145	196.08	µg/L	74	11 - 162	7	0 - 11	Q13852
Bis(2-chloroethoxy)methane	143	196.08	µg/L	73	33 - 184	0	0 - 31	Q13852
Bis(2-chloroethyl)ether	137	196.08	µg/L	70	12 - 158	13	0 - 36	Q13852
Bis(2-chloroisopropyl)ether	150	196.08	µg/L	77	36 - 166	8	0 - 40	Q13852
Bis(2-ethylhexyl)phthalate	189	196.08	µg/L	96	10 - 158	6	0 - 17	Q13852
Butylbenzylphthalate	199	196.08	µg/L	101	10 - 152	11	0 - 15	Q13852
Chrysene	114	196.08	µg/L	58	17 - 168	0	0 - 25	Q13852
Di-n-butylphthalate	160	196.08	µg/L	82	10 - 118	0	0 - 27	Q13852
Di-n-octylphthalate	207	196.08	µg/L	106	10 - 146	5	0 - 17	Q13852
Dibenzo(a,h)anthracene	125	196.08	µg/L	64	10 - 227	16	0 - 28	Q13852
Diethylphthalate	175	196.08	µg/L	89	10 - 114	10	0 - 16	Q13852
Dimethylphthalate	154	196.08	µg/L	78	10 - 112	9	0 - 15	Q13852
Fluoranthene	134	196.08	µg/L	68	26 - 137	1	0 - 24	Q13852
Fluorene	174	196.08	µg/L	89	59 - 121	4	0 - 15	Q13852
Hexachlorobenzene	146	196.08	µg/L	74	10 - 152	2	0 - 18	Q13852
Hexachlorobutadiene	147	196.08	µg/L	75	24 - 116	6	0 - 34	Q13852
Hexachloroethane	134	196.08	µg/L	68	40 - 113	7	0 - 38	Q13852
Indeno(1,2,3-cd)pyrene	138	196.08	µg/L	70	10 - 171	20	0 - 29	Q13852
Isophorone	168	196.08	µg/L	86	21 - 196	6	0 - 32	Q13852
N-Nitrosodi-n-propylamine	158	196.08	µg/L	81	10 - 230	2	0 - 36	Q13852
Naphthalene	144	196.08	µg/L	74	21 - 133	0	0 - 42	Q13852
Nitrobenzene	202	196.08	µg/L	103	35 - 180	14	0 - 25	Q13852

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COC Group Number: G0306858
 Date/Time Submitted: 3/31/2006 13:35

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
Pentachlorophenol	125	196.08	µg/L	64	14 - 176	5	0 - 21	Q13852
Phenanthrene	161	196.08	µg/L	82	54 - 120	0	0 - 29	Q13852
Phenol	59.6	196.08	µg/L	30	10 - 112	4	0 - 39	Q13852
Pyrene	204	196.08	µg/L	104	52 - 115	8	0 - 15	Q13852

Volatile Petroleum Hydrocarbons by GC-PID/FID, method MADEP VPH

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
C5-C8 Aliphatics	ND	100	<50	µg/L	Q13860
C9-C10 Aromatics	ND	100	<50	µg/L	Q13860
C9-C12 Aliphatics	ND	100	<50	µg/L	Q13860

Laboratory Control Sample

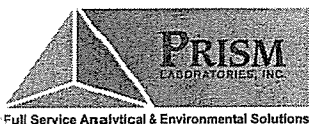
	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
C5-C8 Aliphatics	139	150	µg/L	93	70 - 130	Q13860
C9-C10 Aromatics	38.4	50	µg/L	77	70 - 130	Q13860
C9-C12 Aliphatics	83.5	100	µg/L	84	70 - 130	Q13860

Matrix Spike

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
146456 C5-C8 Aliphatics	147.000	150	µg/L	98	70 - 130	Q13860
C9-C10 Aromatics	38.100	50	µg/L	76	70 - 130	Q13860
C9-C12 Aliphatics	98.600	100	µg/L	99	70 - 130	Q13860

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
146456 C5-C8 Aliphatics	179	150	µg/L	119	70 - 130	20	0 - 25	Q13860
C9-C10 Aromatics	36.6	50	µg/L	73	70 - 130	4	0 - 25	Q13860
C9-C12 Aliphatics	126	100	µg/L	126	70 - 130	24	0 - 25	Q13860



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Extractable Petroleum Hydrocarbons by GC-FID, method MADEP EPH

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
C11-C22 Aromatics	ND	100	<50	µg/L	Q13970
C19-C36 Aliphatics	ND	100	<50	µg/L	Q13970
C9-C18 Aliphatics	ND	100	<50	µg/L	Q13970

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
C11-C22 Aromatics	1830	1700	µg/L	108	40 - 140	Q13970
C19-C36 Aliphatics	529	800	µg/L	66	40 - 140	Q13970
C9-C18 Aliphatics	386	600	µg/L	64	40 - 140	Q13970

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
146849	C11-C22 Aromatics	1505.200	1700	µg/L	89	40 - 140	Q13970
	C19-C36 Aliphatics	683.800	800	µg/L	85	40 - 140	Q13970
	C9-C18 Aliphatics	470.600	600	µg/L	78	40 - 140	Q13970

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
146849	C11-C22 Aromatics	1330	1700	µg/L	78	40 - 140	12	0 - 50	Q13970
	C19-C36 Aliphatics	537	800	µg/L	67	40 - 140	24	0 - 50	Q13970
	C9-C18 Aliphatics	390	600	µg/L	65	40 - 140	19	0 - 50	Q13970

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Environmental Investigations, Inc. Laboratory Name: Prism Laboratories, Inc.
 Project Name: NCDOT Parcel 115 NC Certification # (Lab): 402
 Site Location: Hwy 19E, Burnsville, NC Sample Matrix: Water

Sample Information and Analytical Results						
Method for Ranges: MADEP VPH						
VPH Surrogate Standards: Aliphatic - 2,5-Dibromotoluene / Aromatic - 2,5-Dibromotoluene						
Sample Identification:		146455	NA	NA	NA	NA
Collection Option (for soil*):		NA				
Date Collected:		3/30/06				
Date Received:		3/31/06				
Date Extracted:		NA				
Date Analyzed:		4/6/06				
% Dry Solids:		NA				
Dilution Factor:		1				
Hydrocarbon Ranges in ug/L:		Sample Results	Sample Results	Sample Results	Sample Results	Sample Results
C5-C8 Aliphatics ***		200				
C9-C12 Aliphatics ***		<100				
C9-C10 Aromatics **		<100				
Blank:	C5-C8 Aliphatics	<100	<100	<100	<100	<100
	C9-C12 Aliphatics	<100	<100	<100	<100	<100
	C9-C10 Aromatics	<100	<100	<100	<100	<100
RL:	C5-C8 Aliphatics	100				
	C9-C12 Aliphatics	100				
	C9-C10 Aromatics	100				
MDL:	C5-C8 Aliphatics	50				
	C9-C12 Aliphatics	50				
	C9-C10 Aromatics	35				
Surrogate Acceptance Range:	Blank	70-130 %	70-130 %	70-130 %	70-130 %	70-130 %
Aliphatic Surrogate % Rec. - FID:	97	79				
Aromatic Surrogate % Rec. - PID:	75	103				

- * Option 1 = Established fill line on vial
- * Option 2 = Sampling device (indicate brand, e.g., EnCore TM)
- * Option 3 = Field weight of soil

** Unadjusted value - should exclude the concentration of any surrogate(s), internal standards and/or concentrations of other ranges that elute within the specified range.

*** Adjusted value

MDL = Method Detection Limit RL = Reporting Limit Blank = Laboratory Method Blank or Trip Blank
 (whichever is higher - indicate type)

Were all performance/acceptance standards for required QA/QC procedures achieved?

YES

No - Details Attached

Were any significant modifications to the VPH method made?

NO

Yes - Details Attached

Comments: VPH trip blank was not submitted to the laboratory.

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Environmental Investigations, Inc. Laboratory Name: Prism Laboratories, Inc.
 Project Name: NCDOT Parcel 115 NC Certification # (Lab): 402
 Site Location: Hwy 19E, Burnsville, NC Sample Matrix: Water

Sample Information and Analytical Results						
Method for Ranges: MADEP EPH						
EPH Surrogate Standards: Aliphatic - 1-Chloro-octadecane / Aromatic - o-Terphenyl						
EPH Fractionation Surrogates: #1 - 2-Bromonaphthalene / #2 - Fluorobiphenyl						
Sample Identification:		146455	NA	NA	NA	NA
Date Collected:		3/30/06				
Date Received:		3/31/06				
Date Extracted:		4/10/06				
Date Analyzed:		4/12/06				
% Dry Solids:		NA				
Dilution Factor:		1				
Hydrocarbon Ranges in ug/L:		Sample Results	Sample Results	Sample Results	Sample Results	Sample Results
C9-C18 Aliphatics *		<100				
C19-C36 Aliphatics *		<100				
C11-C22 Aromatics **		<100				
Blank:	C9-C18 Aliphatics	<100	<100	<100	<100	<100
	C19-C36 Aliphatics	<100	<100	<100	<100	<100
	C11-C22 Aromatics	<100	<100	<100	<100	<100
RL:	C9-C18 Aliphatics	100				
	C19-C36 Aliphatics	100				
	C11-C22 Aromatics	100				
MDL:	C9-C18 Aliphatics	75				
	C19-C36 Aliphatics	31				
	C11-C22 Aromatics	71				
Surrogate Acceptance Range:	Blank	40-140 %	40-140 %	40-140 %	40-140 %	40-140 %
Aliphatic Surrogate % Rec.:	98	94				
Aromatic Surrogate % Rec.:	87	100				
Fractionation Surrogate Accep. Range:	Blank	40-140 %	40-140 %	40-140 %	40-140 %	40-140 %
Frac. Surrogate #1 % Rec.:	54	94				
Frac. Surrogate #2 % Rec.:	71	116				

* Unadjusted value - should exclude the concentration of any surrogate(s), internal standards and/or concentrations of other ranges that elute within the specified range.

** Adjusted value

MDL = Method Detection Limit RL = Reporting Limit Blank = Laboratory Method Blank

Were all performance/acceptance standards for required QA/QC procedures achieved?	YES	No - Details Attached
Was blank correction applied as a significant modification of the method?	Yes	NO
Were any significant modifications to the EPH method made?	NO	Yes - Details Attached

Comments:



Mr. Bob Shaut
Environmental Investigations
2101 Gateway Centre Boulevard
Suite 200
Morrisville NC 27560
Report Number: G106-581
Client Project: NCDOT

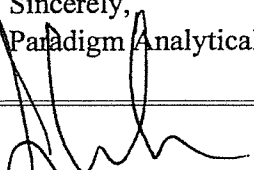
Dear Mr. Shaut:

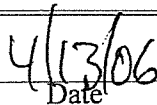
Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period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

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

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.


Laboratory Director
J. Patrick Weaver


Date



Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: GP1
Client Project ID: NCDOT
Lab Sample ID: G106-581-1
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 11:30
Date Received: 4/1/2006
Matrix: Soil
Solids 68.36

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	34.1	7.24	5030	1	04/04/06
Diesel Range Organics	56.3	8.77	3541	1	04/06/06

Comments:

Flags:



Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: GP2
Client Project ID: NCDOT
Lab Sample ID: G106-581-2
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 11:40
Date Received: 4/1/2006
Matrix: Soil
Solids 73.38

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.41	5030	1	04/04/06
Diesel Range Organics	10.3	7.81	3541	1	04/06/06

Comments:

Flags:



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP3
Client Project ID: NCDOT
Lab Sample ID: G106-581-3
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 11:45
Date Received: 4/1/2006
Matrix: Soil
Solids 72.39

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.35	5030	1	04/04/06
Diesel Range Organics	BQL	8.35	3541	1	04/06/06

Comments:

Flags:

Reviewed By: 

TPH_LIMS_v2.0



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP4
Client Project ID: NCDOT
Lab Sample ID: G106-581-4
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 12:00
Date Received: 4/1/2006
Matrix: Soil
Solids 71.88

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.93	5030	1	04/04/06
Diesel Range Organics	BQL	8.19	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP5
Client Project ID: NCDOT
Lab Sample ID: G106-581-5
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 13:30
Date Received: 4/1/2006
Matrix: Soil
Solids 66.83

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.86	5030	1	04/04/06
Diesel Range Organics	BQL	8.99	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP6
Client Project ID: NCDOT
Lab Sample ID: G106-581-6
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 15:50
Date Received: 4/1/2006
Matrix: Soil
Solids 73.31

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	8.09	5030	1	04/04/06
Diesel Range Organics	BQL	8.11	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 



Results for Total Petroleum Hydrocarbons
by GC/FID 8015

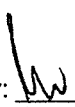
Client Sample ID: GP7
Client Project ID: NCDOT
Lab Sample ID: G106-581-7
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 16:00
Date Received: 4/1/2006
Matrix: Soil
Solids 74.05

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.72	5030	1	04/04/06
Diesel Range Organics	BQL	7.40	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 
TPH_LIMS_v2.0 8 of 24



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP8
Client Project ID: NCDOT
Lab Sample ID: G106-581-8
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 14:50
Date Received: 4/1/2006
Matrix: Soil
Solids 71.04

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.06	5030	1	04/05/06
Diesel Range Organics	BQL	8.33	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 

TPH_LIMS_v2.0



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP9
Client Project ID: NCDOT
Lab Sample ID: G106-581-9
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 15:00
Date Received: 4/1/2006
Matrix: Soil
Solids 72.99

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.09	5030	1	04/05/06
Diesel Range Organics	18.8	8.33	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 

TPH_LIMS_v2.0



Results for Total Petroleum Hydrocarbons
by GC/FID 8015


Client Sample ID: GP10
Client Project ID: NCDOT
Lab Sample ID: G106-581-10
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 15:10
Date Received: 4/1/2006
Matrix: Soil
Solids 67.87

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.77	5030	1	04/05/06
Diesel Range Organics	18.0	8.52	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 

TPH_LIMS_v2.0



Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: GP11
Client Project ID: NCDOT
Lab Sample ID: G106-581-11
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 15:30
Date Received: 4/1/2006
Matrix: Soil
Solids 66.30

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	8.18	5030	1	04/05/06
Diesel Range Organics	BQL	9.21	3541	1	04/07/06

Comments:

Flags:

Reviewed By: 

TPH_LIMS_v2.0



Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: GP12
Client Project ID: NCDOT
Lab Sample ID: G106-581-12
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 3/29/2006 16:30
Date Received: 4/1/2006
Matrix: Soil
Solids 75.16

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.72	5030	1	04/05/06
Diesel Range Organics	8.22	8.16	3541	1	04/07/06

Comments:

Flags:



Results for Volatiles
by GCMS 8260B/5030

Client Sample ID: GP1
Client Project ID: NCDOT
Lab Sample ID: G106-581-1D
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: JTF
Date Collected: 3/29/2006 11:30
Date Received: 4/1/2006
Matrix: Soil
%Solids: 68.4

Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	1830	50	4/6/2006
Benzene	BQL	73.1	50	4/6/2006
Bromobenzene	BQL	73.1	50	4/6/2006
Bromochloromethane	BQL	73.1	50	4/6/2006
Bromodichloromethane	BQL	73.1	50	4/6/2006
Bromoform	BQL	73.1	50	4/6/2006
Bromomethane	BQL	73.1	50	4/6/2006
2-Butanone	BQL	1830	50	4/6/2006
n-Butylbenzene	BQL	73.1	50	4/6/2006
sec-Butylbenzene	181	73.1	50	4/6/2006
tert-Butylbenzene	BQL	73.1	50	4/6/2006
Carbon disulfide	BQL	73.1	50	4/6/2006
Carbon tetrachloride	BQL	73.1	50	4/6/2006
Chlorobenzene	BQL	73.1	50	4/6/2006
Chloroethane	BQL	73.1	50	4/6/2006
Chloroform	BQL	73.1	50	4/6/2006
Chloromethane	BQL	73.1	50	4/6/2006
2-Chlorotoluene	BQL	73.1	50	4/6/2006
4-Chlorotoluene	BQL	73.1	50	4/6/2006
Dibromochloromethane	BQL	73.1	50	4/6/2006
1,2-Dibromo-3-chloropropane	BQL	366	50	4/6/2006
Dibromomethane	BQL	73.1	50	4/6/2006
1,2-Dibromoethane (EDB)	BQL	73.1	50	4/6/2006
1,2-Dichlorobenzene	BQL	73.1	50	4/6/2006
1,3-Dichlorobenzene	BQL	73.1	50	4/6/2006
1,4-Dichlorobenzene	BQL	73.1	50	4/6/2006
trans-1,4-Dichloro-2-butene	BQL	366	50	4/6/2006
1,1-Dichloroethane	BQL	73.1	50	4/6/2006
1,1-Dichloroethene	BQL	73.1	50	4/6/2006
1,2-Dichloroethane	BQL	73.1	50	4/6/2006
cis-1,2-Dichloroethene	BQL	73.1	50	4/6/2006
trans-1,2-dichloroethene	BQL	73.1	50	4/6/2006
1,2-Dichloropropane	BQL	73.1	50	4/6/2006
1,3-Dichloropropane	BQL	73.1	50	4/6/2006
2,2-Dichloropropane	BQL	73.1	50	4/6/2006
1,1-Dichloropropene	BQL	73.1	50	4/6/2006
cis-1,3-Dichloropropene	BQL	73.1	50	4/6/2006
trans-1,3-Dichloropropene	BQL	73.1	50	4/6/2006
Dichlorodifluoromethane	BQL	366	50	4/6/2006
Diisopropyl ether (DIPE)	BQL	73.1	50	4/6/2006
Ethylbenzene	BQL	73.1	50	4/6/2006
Hexachlorobutadiene	BQL	73.1	50	4/6/2006



Results for Volatiles
by GCMS 8260B/5030

Client Sample ID: GP1
Client Project ID: NCDOT
Lab Sample ID: G106-581-1D
Lab Project ID: G106-581
Report Basis: Dry Weight

Analyzed By: JTF
Date Collected: 3/29/2006 11:30
Date Received: 4/1/2006
Matrix: Soil
%Solids: 68.4


Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
2-Hexanone	BQL	366	50	4/6/2006
Iodomethane	BQL	73.1	50	4/6/2006
Isopropylbenzene	BQL	73.1	50	4/6/2006
4-Isopropyltoluene	BQL	73.1	50	4/6/2006
Methylene chloride	BQL	366	50	4/6/2006
4-Methyl-2-pentanone	BQL	366	50	4/6/2006
Methyl-tert-butyl ether (MTBE)	263	73.1	50	4/6/2006
Naphthalene	BQL	73.1	50	4/6/2006
n-Propyl benzene	BQL	73.1	50	4/6/2006
Styrene	BQL	73.1	50	4/6/2006
1,1,1,2-Tetrachloroethane	BQL	73.1	50	4/6/2006
1,1,2,2-Tetrachloroethane	BQL	73.1	50	4/6/2006
Tetrachloroethene	BQL	73.1	50	4/6/2006
Toluene	BQL	73.1	50	4/6/2006
1,2,3-Trichlorobenzene	BQL	73.1	50	4/6/2006
1,2,4-Trichlorobenzene	BQL	73.1	50	4/6/2006
Trichloroethene	BQL	73.1	50	4/6/2006
1,1,1-Trichloroethane	BQL	73.1	50	4/6/2006
1,1,2-Trichloroethane	BQL	73.1	50	4/6/2006
Trichlorofluoromethane	BQL	73.1	50	4/6/2006
1,2,3-Trichloropropane	BQL	73.1	50	4/6/2006
1,2,4-Trimethylbenzene	BQL	73.1	50	4/6/2006
1,3,5-Trimethylbenzene	BQL	73.1	50	4/6/2006
Vinyl chloride	BQL	73.1	50	4/6/2006
m,p-Xylene	BQL	146	50	4/6/2006
o-Xylene	BQL	73.1	50	4/6/2006

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	10.6	105
1,2-Dichloroethane-d4	10	9.32	93
Toluene-d8	10	10.2	102

Comments:

Flags:

BQL = Below Quantitation Limits.

Reviewed By: 



Results for Semivolatiles
by GCMS 8270

Client Sample ID: GP1
Client Project ID: NCDOT
Lab Sample ID: G106-581-1J
Lab Project ID: G106-581
Report Basis: Dry weight

Analyzed By: MRC
Date Collected: 3/29/2006 11:30
Date Received: 4/1/2006
Date Extracted: 4/4/2006
Matrix: Soil
% Solids: 68.36

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	440	1	4/7/2006
Acenaphthylene	BQL	440	1	4/7/2006
Anthracene	BQL	440	1	4/7/2006
Benzo[a]anthracene	BQL	440	1	4/7/2006
Benzo[a]pyrene	BQL	440	1	4/7/2006
Benzo[b]fluoranthene	BQL	440	1	4/7/2006
Benzo[g,h,i]perylene	BQL	440	1	4/7/2006
Benzo[k]fluoranthene	BQL	440	1	4/7/2006
Benzoic Acid	BQL	880	1	4/7/2006
Bis(2-chloroethoxy)methane	BQL	440	1	4/7/2006
Bis(2-chloroethyl)ether	BQL	440	1	4/7/2006
Bis(2-chloroisopropyl)ether	BQL	440	1	4/7/2006
Bis(2-ethylhexyl)phthalate	BQL	440	1	4/7/2006
4-bromophenyl phenyl ether	BQL	440	1	4/7/2006
Butylbenzylphthalate	BQL	440	1	4/7/2006
2-Chloronaphthalene	BQL	440	1	4/7/2006
2-Chlorophenol	BQL	440	1	4/7/2006
4-Chloro-3-methylphenol	BQL	440	1	4/7/2006
4-Chloroaniline	BQL	2200	1	4/7/2006
4-Chlorophenyl phenyl ether	BQL	440	1	4/7/2006
Chrysene	BQL	440	1	4/7/2006
Dibenzo[a,h]anthracene	BQL	440	1	4/7/2006
Dibenzofuran	BQL	440	1	4/7/2006
Di-n-Butylphthalate	BQL	440	1	4/7/2006
1,2-Dichlorobenzene	BQL	440	1	4/7/2006
1,3-Dichlorobenzene	BQL	440	1	4/7/2006
1,4-Dichlorobenzene	BQL	440	1	4/7/2006
3,3'-Dichlorobenzidine	BQL	880	1	4/7/2006
2,4-Dichlorophenol	BQL	440	1	4/7/2006
Diethylphthalate	BQL	440	1	4/7/2006
Dimethylphthalate	BQL	440	1	4/7/2006
2,4-Dimethylphenol	BQL	440	1	4/7/2006
Di-n-octylphthalate	BQL	440	1	4/7/2006
4,6-Dinitro-2-methylphenol	BQL	2200	1	4/7/2006
2,4-Dinitrophenol	BQL	2200	1	4/7/2006
2,4-Dinitrotoluene	BQL	440	1	4/7/2006
2,6-Dinitrotoluene	BQL	440	1	4/7/2006
Diphenylamine *	BQL	440	1	4/7/2006
Fluoranthene	BQL	440	1	4/7/2006
Fluorene	BQL	440	1	4/7/2006
Hexachlorobenzene	BQL	440	1	4/7/2006
Hexachlorobutadiene	BQL	440	1	4/7/2006
Hexachlorocyclopentadiene	BQL	880	1	4/7/2006
Hexachloroethane	BQL	440	1	4/7/2006



Results for Semivolatiles
by GCMS 8270

Client Sample ID: GP1
Client Project ID: NCDOT
Lab Sample ID: G106-581-1J
Lab Project ID: G106-581
Report Basis: Dry weight

Analyzed By: MRC
Date Collected: 3/29/2006 11:30
Date Received: 4/1/2006
Date Extracted: 4/4/2006
Matrix: Soil
% Solids: 68.36

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed	Spike Added	Spike Result	Percent Recovered
Indeno(1,2,3-c,d)pyrene	BQL	440	1	4/7/2006			
Isophorone	BQL	440	1	4/7/2006			
2-Methylnaphthalene	BQL	440	1	4/7/2006			
2-Methylphenol	BQL	440	1	4/7/2006			
3- & 4-Methylphenol	BQL	440	1	4/7/2006			
Naphthalene	BQL	440	1	4/7/2006			
2-Nitroaniline	BQL	440	1	4/7/2006			
3-Nitroaniline	BQL	2200	1	4/7/2006			
4-Nitroaniline	BQL	2200	1	4/7/2006			
Nitrobenzene	BQL	440	1	4/7/2006			
2-Nitrophenol	BQL	440	1	4/7/2006			
4-Nitrophenol	BQL	2200	1	4/7/2006			
N-Nitrosodi-n-propylamine	BQL	440	1	4/7/2006			
Pentachlorophenol	BQL	2200	1	4/7/2006			
Phenanthrene	BQL	440	1	4/7/2006			
Phenol	BQL	440	1	4/7/2006			
Pyrene	BQL	440	1	4/7/2006			
1,2,4-Trichlorobenzene	BQL	440	1	4/7/2006			
2,4,5-Trichlorophenol	BQL	440	1	4/7/2006			
2,4,6-Trichlorophenol	BQL	440	1	4/7/2006			
2-Fluorobiphenyl					10	8.9	89
2-Fluorophenol					10	9.9	99
Nitrobenzene-d5					10	9.7	97
Phenol-d6					10	10.4	104
2,4,6-Tribromophenol					10	9.2	92
4-Terphenyl-d14					10	8.8	88

Comments:

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

Flags:

BQL = Below Quantitation Limits.

Reviewed By:



EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Environmental Investigations


Project Name: NCDOT

Sample Information and Analytical Results	
Sample Identification	GP1
Sample Matrix	Soil
Date Collected	03/29/06
Date Received	04/01/06
Date Extracted	04/04/06
Date Analyzed	04/10/06
Dry Weight	68.4
Dilution Factor	1:1
C ₉ -C ₁₈ Aliphatics*	21 (mg/Kg)
C ₁₉ -C ₃₆ Aliphatics*	< 10 (mg/Kg)
C ₁₁ -C ₂₂ Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	84
Aromatic Surrogate % Recovery	61
Fractionation Surrogate 1 % Recovery	96

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G106-581-1K

Reviewed By: 



EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/28/05

Calibration Ranges and Limits

Range	MDL (2/2004) (µg/L)	ML (µg/L)	RL	
			(µg/L)	(mg/Kg)
C ₉ -C ₁₈ Aliphatics	3.84	12.2	100	10
C ₁₉ -C ₃₆ Aliphatics	0.57	1.8	100	10
C ₁₁ -C ₂₂ Aromatics	4.54	14.4	100	10

Calibration Concentration Levels

Range	Levels (µg/mL)	%RSD or CCC	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	6	24.90	Calibration Factor
	30		
	60		
	120		
	240		
C ₁₉ -C ₃₆ Aliphatics	8	15.4	Calibration Factor
	40		
	80		
	160		
	320		
C ₁₁ -C ₂₂ Aromatics	17	9.8	Calibration Factor
	85		
	170		
	340		
	680		

Calibration Check Date: 04/10/06

Calibration Check

Range	Levels (µg/mL)	RPD
C ₉ -C ₁₈ Aliphatics	120	12.7
C ₁₉ -C ₃₆ Aliphatics	160	5.4
C ₁₁ -C ₂₂ Aromatics	340	0.1

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit

RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Environmental Investigations
Project Name: NCDOT


Sample Information and Analytical Results	
Sample Identification	GP1
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/29/06
Date Received	04/01/06
Date Extracted	03/29/06
Date Analyzed	04/04/06
Dry Weight	68
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 10 (mg/Kg)
C ₉ -C ₁₂ Aliphatics**	60 (mg/Kg)
C ₉ -C ₁₀ Aromatics**	35 (mg/Kg)
Surrogate % Recovery - PID	190***
Surrogate % Recovery - FID	360***

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

***= High surrogate recovery due to matrix interference

Lab Info: g106-581-1a

Reviewed By: 



Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 02/11/06 PID Initial Calibration Date: 02/11/06

Calibration Ranges and Limits

Range	MDL (07/15/2004) (µg/L)	ML (µg/L)	RL	
			(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	4.4	14	100	10
C ₉ -C ₁₂ Aliphatics	3.4	11	100	10
C ₉ -C ₁₀ Aromatics	0.13	0.41	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	%RSD or CCC	Method of Quantitation
C ₅ -C ₈ Aliphatics	40	10.8	Calibration Factor
	1000		
	2000		
	3000		
	4000		
C ₉ -C ₁₂ Aliphatics	10	0.99	Linear Regression
	250		
	500		
	750		
	1000		
C ₉ -C ₁₀ Aromatics	10	19.30	Calibration Factor
	250		
	500		
	750		
	1000		

Calibration Check Date: 04/04/06

Calibration Check

Range	Levels (µg/L)		RPD
	(mg/Kg)		
C ₅ -C ₈ Aliphatics	2000	200	4.3
C ₉ -C ₁₂ Aliphatics	500	50	-7.9
C ₉ -C ₁₀ Aromatics	500	50	6.7

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit

RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve



List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

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

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

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

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

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

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

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

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



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CLIENT: **EI**

CONTACT: **Bob Skout** PHONE NO: **919 657 7550**

PROJECT: **NCDDT** SITE/PWSID#: **Parcel 115**

REPORTS TO: **EI** FAX NO.: **919 657 7550**

INVOICE TO: **NCDDT** QUOTE # **WBS Element 3609.1.1**

P.O. NUMBER **TID# R-2619 A**

SGS Reference: **G106-581**

PAGE **1** OF **2**

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE G= GRAB C= COMB	Preservatives Used Analysis Required	REMARKS
GP1		3/29	1130	S		G	GRO / DRO 8260 8270 EPH VPH	Time 1130/1415
GP2			1140					
GP3			1145					
GP4			1200					
GP5			1330					
GP6			1550					
GP7			1600					
GP8			1450					
GP9			1500					
GP10			1510					

Collected/Relinquished By: (1)		Date	Time	Received By:
Kevin Horton		3/31	8:00am	
Relinquished By: (2)		Date	Time	Received By:
		4/1/04	10:45	

Requested Turnaround Time and Special Instructions:		INTACT	BROKEN	ABSENT
Standard				
Shipping Carrier:		Samples Received Cold? (Circle) YES NO		
FedEx				
Shipping Ticket No: 851607868		Temperature (C): 4.75.2		
Special Deliverable Requirements:		Chain of Custody Seal: (Circle)		
		INTACT		

200 W. Potter Drive Anchoorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1567
 1256 Greenbrier Street Charleston, WV 25311 Tel: (304) 346-0725 Fax: (304) 346-0761

White - Returned By Lab
 Yellow - Return Report
 Pink - Retain Report

APPENDIX E
GEOPHYSICAL REPORT

May 8, 2006

Mr. Robert M. Shaut
EI, Inc.
2101 Gateway Centre Boulevard, Suite 200
Morrisville, NC 27560

Via email (pdf)

RE: State Project: R-2519A, WBS Element 35609.1.1, Yancey County
US 19E from east of SR 1336 (Jacks Creek Road) to SR 1186 (Old US 19)

SUBJECT: Report on Geophysical Surveys for Locating Possible UST's on 14 Parcels
Schnabel Engineering Project No. 05211014.01-07

Dear Mr. Shaut:

This letter contains our report on the geophysical surveys we conducted on the subject properties. This letter report includes one 8.5x11 color figure and thirty-two 11x17 color figures.

1.0 INTRODUCTION

The work described in this report was conducted by Schnabel Engineering under our contract with the NCDOT. The work was conducted at the locations indicated by EI to support their environmental assessment of the subject parcels. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) and associated metal product lines in the accessible areas of the sites.

Schnabel Engineering conducted geophysical surveys on March 13 through 17, 2006, in the accessible areas of the proposed right-of-way (ROW) sections of the parcels: 040, 042, 088, 099, 114, 115, 117, 134, 144, 167, 177, 194, 196 and 214. Photographs of these properties are included on Figures 1 through 4. Photographs of UST locations as marked in the field are included on Figure

5.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies were conducted using a Geophysical Survey Systems SIR-2000 system equipped with a 400 MHz antenna. A Fisher Gemini-3 was used in the conduction mode to trace exposed vent pipes and product lines. Photographs of these instruments are shown in Figure 6.

2.0 FIELD METHODOLOGY

2.1 Location Control

Locations of geophysical data points and site features were obtained using a sub-meter Trimble Pro-XRS DGPS system on Parcels 40, 42, 88, 99, 114, 115, 117, 134, 144, 167, 177, 194, and 214. An X-Y survey grid was set up on Parcel 196. References to direction and location in this report for Parcel 196 are based on this local site grid. References to direction and location in this report for Parcels 40, 42, 88, 99, 114, 115, 117, 134, 144, 167, 177, 194, and 214 are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in meters. The locations of existing site features (building, curbs, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings.

2.2 Data Collection

The EM61 data were collected in the accessible portions of the parcels along parallel survey lines spaced approximately one meter apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one-half to one meter apart in orthogonal directions over areas of reinforced concrete and over anomalous EM readings not attributed to cultural features. The GPR

data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

Preliminary results were sent to Bob Shaut of EI on March 20, 2006.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data are shown on Figures 7 through 34. The EM61 early time gate results are plotted on Figures 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, and 33. The early time gate data provide the most sensitive detection of metal object targets, regardless of size. Figures 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, and 32 show the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

3.1 Parcel 040 - Andrew E. Brown Property (Andy's, Inc.)

The parcel owned by Andrew E. Brown is located approximately 61 meters east of NCSR 1375 on the north side of US Highway 19E. The EM61 results are shown on Figure 7 (early time gate) and Figure 8 (differential). Two vehicles could not be moved at the time of our surveys. The early time gate results show anomalies probably due to reinforced concrete, several small anomalies probably caused by insignificant buried metal objects, several anomalies caused by known site features, and a large linear anomaly probably caused by a buried utility. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were conducted over three areas of reinforced concrete. The GPR data did not indicate the presence of USTs in the areas surveyed.

3.2 Parcel 042 - Danny Hensley Property (Burnsville Independent)

The parcel owned by Danny Hensley is located approximately 244 meters to the east of NCSR 1196

on the south side of US Highway 19E. The EM61 results are shown on Figure 9 (early time gate) and Figure 10 (differential). Several vehicles and trailers could not be moved at the time of our surveys. The early time gate results show several small anomalies probably caused by insignificant buried metal objects, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were not conducted on the site.

3.3 Parcel 088 - Bill Riddle Property (Riddle Fuel Oil Company)

The parcel owned by Bill Riddle is located approximately 488 meters to the west of NC Highway 197 on the north side of US Highway 19E. The EM61 results are shown on Figure 11 (early time gate) and Figure 12 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, linear anomalies probably caused by buried utilities, two linear anomalies probably caused by buried metal culverts, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were not conducted on the site.

3.4 Parcel 099 - Charles Dellinger Property (Texaco)

The parcel owned by Charles Dellinger is located at the southwestern quadrant of the intersection of US Highway 19E and NC 197. The EM61 results are shown on Figure 13 (early time gate) and Figure 14 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, linear anomalies probably caused by buried utilities, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were not conducted on the site.

3.5 Parcel 114 - Arlene Ray, Inc. Property (Burnsville Gas, Inc.)

The parcel owned by Arlene Ray, Inc. is located at the southwest quadrant of US Highway 19E and NCSR 1140. The EM61 results are shown on Figure 15 (early time gate) and Figure 16

(differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, three linear anomalies probably caused by buried metal culverts, an anomaly probably caused by reinforced concrete, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were conducted to investigate the reinforced concrete. The GPR data did not indicate the presence of USTs in the areas surveyed.

3.6 Parcel 115 - Tom Morgan Property (Convenience King 22)

The parcel owned by Tom Morgan is located at the intersection of Main Street and US Highway 19E. The EM61 results are shown on Figure 17 (early time gate) and Figure 18 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, several anomalies probably caused by buried metal culverts, and several anomalies caused by known site features. Some of the observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were conducted to investigate several EM61 differential anomalies on the site. The GPR data did not indicate the presence of USTs in the areas surveyed.

3.7 Parcel 117 - Samuel S. Styles Property (Former Sam's Oil Company)

The parcel owned by Samuel S. Styles is located on the north side of US 19 East Business (East Main Street) just west of SR 1436. The EM61 results are shown on Figure 19 (early time gate) and Figure 20 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, an anomaly probably caused by a buried metal culvert, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were conducted to investigate several EM61 differential anomalies on the site. GPR surveys were not conducted behind the building in the area of the observed fill port because of the presence of large metallic obstructions and debris, and because this area was not within the intended survey area indicated by EI. The GPR data did not indicate the presence of USTs in the areas surveyed. The Gemini-3 was used in the

conduction mode in an attempt to trace out the extent of the vent pipe on the east side of the building. A signal was not detected, which suggests the vent pipe either does not extend very far under the surface beyond the exposed section, or the vent pipe extends beneath the building. A signal would have been detected if the vent pipe connected directly to a UST next to the building.

3.8 Parcel 134 - Keith Presnell Property (Austin Automotive)

The parcel owned by Keith Presnell is located at the northeast quadrant of the intersection of US Highway 19E and NCSR 1329. The EM61 results are shown on Figure 21 (early time gate) and Figure 22 (differential). Several vehicles and trailers could not be moved at the time of our surveys. The early time gate results show several small anomalies probably caused by insignificant buried metal objects, linear anomalies probably caused by utilities, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were not conducted on the site.

3.9 Parcel 144 - Peggy Jones Property (Prives & Perches)

The parcel owned by Peggy Jones is located approximately 305 meters west of NCSR 1141 on the south side of US Highway 19E. The EM61 results are shown on Figure 23 (early time gate) and Figure 25 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, two linear anomalies probably caused by buried metal culverts, an anomaly probably caused by a partially buried metal conduit pipe, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were not conducted on the site. The Gemini-3 was used in the conduction mode to trace out the extent of the metal conduit pipe that was visible in the area of the former pump island, which was then marked out on the ground surface. The conduit pipe was traced to the front of the building, and the owner of the property informed our representative that on the wall inside the building a switch existed that was used to turn the pump off and on. The owner also informed our representative that the USTs and product lines were removed at the same time as the pump island, but the conduit pipe for the electrical was left in place.

3.10 Parcel 167 - Edd Cassida Property (Edd's Independent Station)

The parcel owned by Edd Cassida is located at the southwest quadrant of the intersection of US Highway 19E and NCSR 1142. The EM61 results are shown on Figure 25 (early time gate) and Figure 26 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, two linear anomalies probably caused by buried metal culverts, and several anomalies caused by known site features. The observed anomalies not attributed to known site features are removed in the differential data set. GPR surveys were not conducted on the site.

3.11 Parcel 177 - Johnnie Bennett Property (Former BP Gas Station)

The parcel owned by Johnnie Bennett is located at the southwest quadrant of the intersection of US Highway 19E and NCSR 1143. The EM61 results are shown on Figure 27 (early time gate) and Figure 28 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, an anomaly probably caused by reinforced concrete, and several anomalies caused by known site features. The observed anomalies not attributed to known cultural features are removed in the differential data set. GPR surveys were conducted to investigate the reinforced concrete. The GPR data did not indicate the presence of USTs in the areas surveyed.

3.12 Parcel 194 - William Ira Young Property (Former Gas Station)

The parcel owned by William Ira Young is located at the northwest quadrant of the intersection of SR 1323 and US Highway 19E. The EM61 results are shown on Figure 29 (early time gate) and Figure 30 (differential). Three site visits were required in order to survey the areas of concern because the site owner could only move obstructing trailers around at specific times. The early time gate results show several small anomalies probably caused by insignificant buried metal objects, an anomaly probably caused by a buried metal culvert, a linear anomaly probably caused by a buried utility, vent pipe line, or product line, and several anomalies caused by known site features. Some of

the observed anomalies not attributed to known site features are removed in the differential data set. Information provided by EI indicated a vent pipe at the southwest corner of the building, and three fill ports located southwest of the building. These features could not be located at the time of our surveys. GPR surveys were conducted to investigate the linear anomaly extending from the southwest corner of the building, as well as the areas occupied by trailers to the southwest of the building. The GPR data indicated the presence of one probable UST as shown on Figures 29 and 30, which was marked out on the ground surface as shown on Figure 5. The GPR data indicate that the UST is approximately 1.0 meter in diameter and about 1.5 meters in length, with an approximate capacity of 1100-1200 liters. It appears to be buried 1.0 to 1.5 meters below the ground surface.

3.13 Parcel 196 - Ed Gouge Property (Heritage Tire)

The parcel owned by Ed Gouge is located on the south side of US Highway 19E approximately 60 meters east of SR 1144. A local X-Y site grid was laid out for positioning of the geophysical surveys at this parcel because the steep valley walls at this location did not allow enough satellite visuals to provide a reliable GPS signal to be used for positioning. The EM61 results are shown on Figure 31 (early time gate) and Figure 32 (differential). The early time gate results show several small anomalies probably caused by insignificant buried metal objects, an anomaly probably caused by a buried metal culvert, and several anomalies caused by known site features. Some of the observed anomalies not attributed to known cultural features are removed in the differential data set. GPR surveys were conducted to investigate three EM61 differential anomalies on the site. The GPR data did not indicate the presence of USTs in the areas surveyed.

3.14 Parcel 214 - Charles R. Dellinger

The parcel owned by Charles Dellinger is located at the southwest corner of the intersection of US Highway 19E and SR 1146 (Cane Bridge Road). The EM61 results are shown on Figure 33 (early time gate). A malfunction with the top coil of the EM61 caused it to record random erroneous data, which influenced the differential data set. The differential data set was not used and has not been included in this report. The early time gate results show several small anomalies probably caused by

insignificant buried metal objects, an anomaly probably caused by a reinforced concrete bridge, and several anomalies caused by known site features. GPR surveys were conducted to investigate two EM61 early time gate anomalies on the site. The GPR data did not indicate the presence of USTs in the areas surveyed.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on 14 Parcels on State Project R-2519A in Yancey County, NC indicate the following:

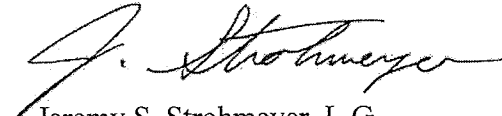
- The geophysical data indicate the presence of one possible UST on parcel 194. The possible UST is about 1.0 meter in diameter and about 1.5 meters in length, with an approximate capacity of 1100 to 1200 liters.
- The geophysical data do not indicate the presence USTs in the areas surveyed on parcels 040, 042, 088, 099, 114, 115, 117, 134, 144, 167, 177, 196, and 214.

5.0 LIMITATIONS

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

Thank you for the opportunity to serve you on this project. Please call if you need additional information or have any questions.

Sincerely,



Jeremy S. Strohmeyer, L.G.
Project Manager

JS/RC
Attachment: Figures (1-33)



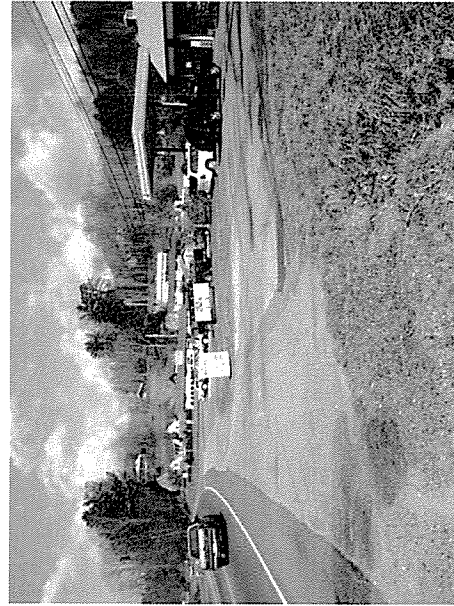
Parcel 114 - Arlene Ray Property, looking southwest



Parcel 115 - Tom Morgan Property, looking southwest



Parcel 117 - Samuel S. Styles Property, looking north



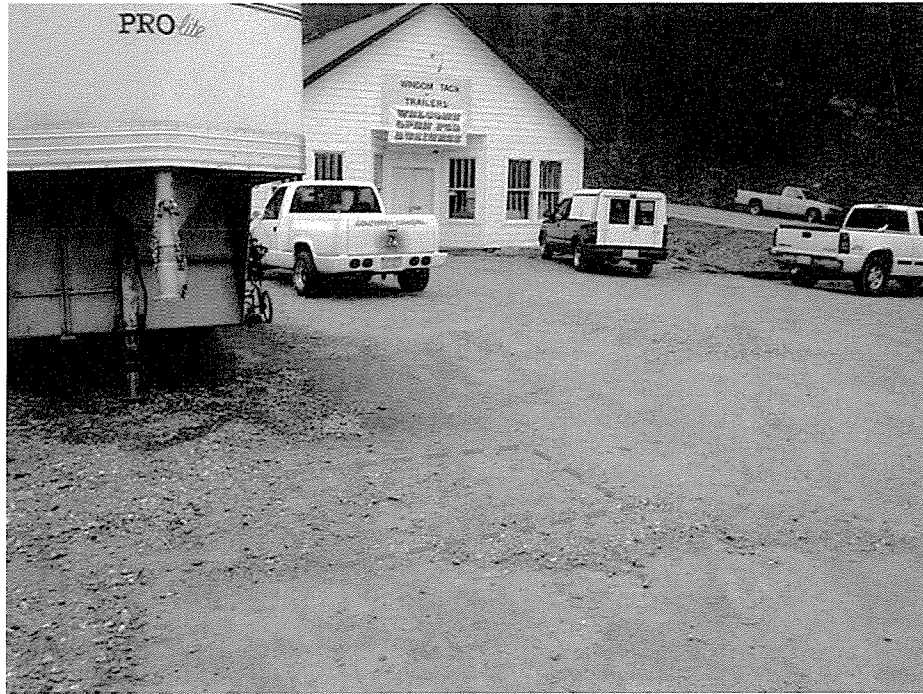
Parcel 134 - Keith Presnell Property, looking northwest



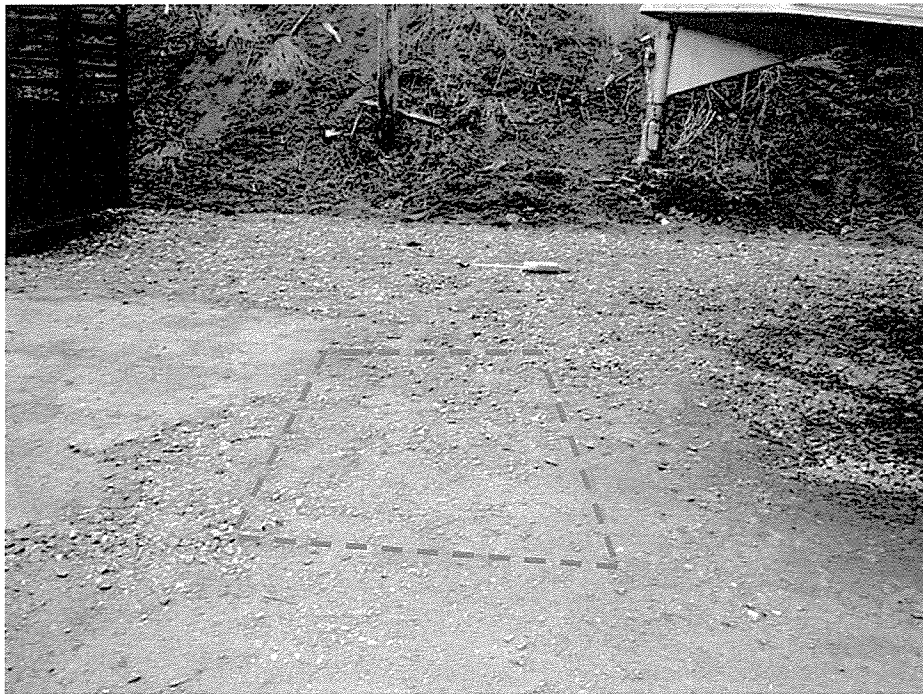
NC Department of Transportation
 Geotechnical Engineering Unit
 State Project No. R-2519A
 Yancey County, North Carolina

SITE PHOTOS

FIGURE 2



Location of possible UST as marked on site, looking northeast



Location of possible UST as marked on site, looking west



NC Department of Transportation
Geotechnical Engineering Unit

State Project No. R-2519A
Yancey County, North Carolina

**PHOTOS OF
POSSIBLE UST
LOCATION**

FIGURE 5



Geonics EM61-MK2



Geophysical Survey Systems SIR-2000 with 400 MHz antenna



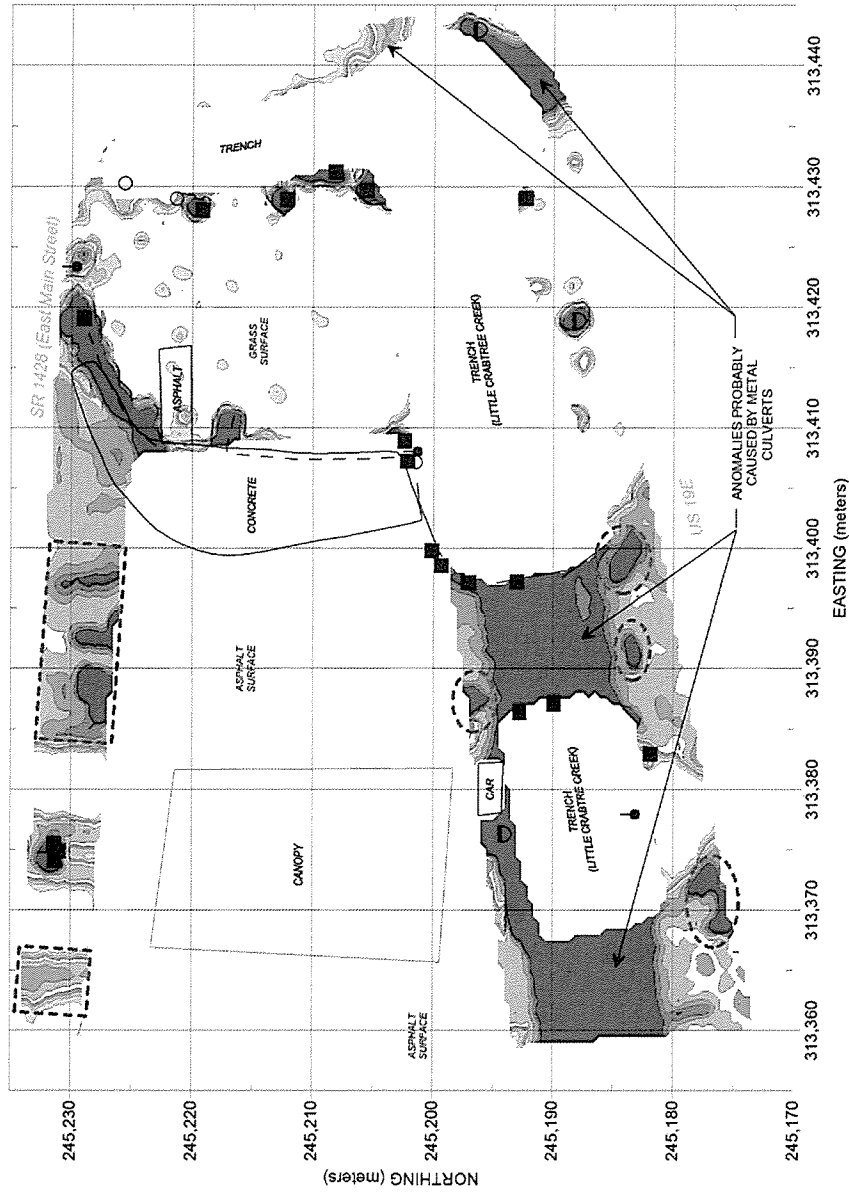
Fisher Gemini-3 used in conduction mode



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PHOTOS OF
 GEOPHYSICAL
 EQUIPMENT

FIGURE 6

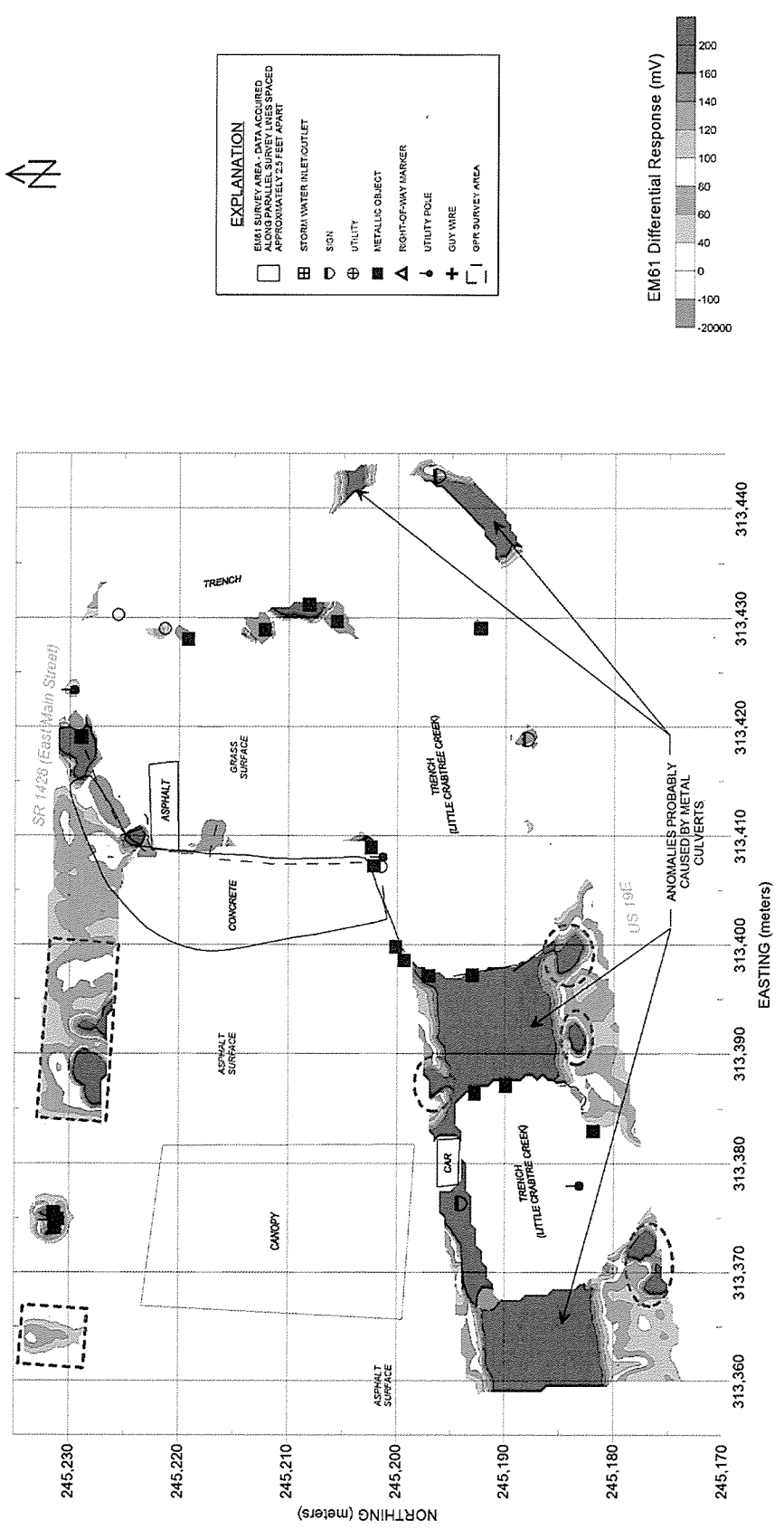


Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on March 13, 2006, using a Geonics EM61-MK2 instrument. Positioning for EM61 survey provided using a submeter Trimble ProXR5 DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on March 16, 2006, using a Geophysical Survey Systems, Inc. SIR-2000 equipped with a 400 MHz antenna.



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PARCEL 115
EM61 EARLY TIME
GATE RESPONSE
FIGURE 17



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as pipes and tanks. The EM data were collected on March 13, 2006, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on March 16, 2006, using a Geophysical Survey Systems, Inc. SIR-2000 equipped with a 400 MHz antenna.



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 EM61 DIFFERENTIAL
 RESPONSE