

North Carolina Department of Transportation

**PRELIMINARY SITE ASSESSMENT
FOR PARCEL 132**

**State Project U-4020, WBS Element 35015.1.1
US 421 (King Street) from US 321 (Hardin Street)
to East of NC 194 (Jefferson Road) in Boone
Watauga County, North Carolina**



May 30, 2008
Revised June 10, 2008
Project Number 07210023.07



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**North Carolina Department of Transportation
PRELIMINARY SITE ASSESSMENT FOR PARCEL 132
State Project U-4020, WBS Element 35015.1.1
US 421 (King Street) from US 321 (Hardin Street) to East of NC 194 (Jefferson Road) in
Boone, Watauga County, North Carolina**

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is widening the existing alignment of US Highway 421 (King Street) in the town of Boone, located in Watauga County, North Carolina. Acquisition of properties within the right-of-way is necessary prior to road construction. Schnabel Engineering conducted Preliminary Site Assessments (PSAs) on six sites (seven parcels) located within the proposed right-of-way that are of concern to the NCDOT.

This report summarizes the results of field activities conducted during the PSA for the proposed property acquisition area (Study Area) identified by NCDOT on Parcel 132. The property is located at 1100 East King Street and is occupied by a Hyundai Dealership, currently owned by Dale and James Greene Investment (Figure 1). The property is located on the south side of East King Street at the Delmar Street intersection. The property line and topography are shown on Figure 2. The approximate NCDOT project limits that delineate the property acquisition area are shown on Figure 3.

The scope of work executed at the site was performed in general accordance with our cost proposal dated March 3, 2008 and was initiated based on a Notice to Proceed issued by the NCDOT Geotechnical Engineering Unit on March 4, 2008 under contract 7000008010, dated May 31, 2007.

2.0 BACKGROUND AND SITE DESCRIPTION

No buildings were located on the right-of-way of Parcel 132. The surface of the right-of-way was covered with grass islands and paved driveways to the Hyundai Dealership. Several utilities cross the right-of-way including buried water lines, sewer pipes, and overhead electric lines. Photographs of the Study Area are presented in Appendix A.

3.0 FIELD METHODOLOGY

Prior to mobilizing to the site to conduct subsurface sampling, Schnabel Engineering contacted North Carolina One Call to locate underground utilities in the study area of the site. Schnabel Engineering mobilized a geophysical crew to the site on March 12, 2008 and performed an electromagnetic survey of the subsurface in the proposed right-of-way area within the parcel. The electromagnetic survey equipment (EM61-MK2) identified various magnetic anomalies within the study area. The Schnabel geophysical crew returned to the Study Area on March 21, 2008 to perform a ground penetrating radar (GPR) survey with a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna. Results of the survey suggested the presence of buried utility lines, conduits, and the presence of a probable UST along East King Street. The report on the geophysical surveys is included in Appendix B and was previously sent to the NCDOT on May 2, 2008.

After reviewing the background information and geophysical data, Schnabel returned to Parcel 132 to obtain soil samples for chemical analysis from within the Study Area. Soil samples were collected to test for total petroleum hydrocarbon gasoline, diesel range volatile organic carbons (TPH-GRO and TPH-DRO), and Oil and Grease. Seven borings designated B-132-01 through B-132-07 were advanced by Subsurface Environmental Investigations of Statesville, NC along East King Street on April 2, 2008. The locations of the seven soil borings are shown on Figure 3. Borings B-132-01 through B-132-07 were advanced to a total depth of eight feet below ground surface. Borings drilled within the Study Area were advanced with a track-mounted Geoprobe[®] (Model 6610-DT) with direct push probe technology. At the completion of the sampling activities, each boring was backfilled with soil removed from the boring during sampling and/or bentonite chips.

Soil samples were obtained from each boring using a MacroCore[®] sampler fitted with a new single-use, four foot long disposable polyvinyl chloride (PVC) liner. Upon retrieval, a portion of each 2-foot interval was placed in a separate resealable plastic bag. These bags were sealed and placed at ambient temperature for field screening with a MiniRAE Plus photo ionization detector (PID). Volatile organic compounds were allowed to accumulate in the headspace of each bag for approximately 15 minutes, and then the headspace of each sealed bag was scanned with the PID. Headspace screening of the soil samples revealed the presence of volatile vapors at low

concentrations in several of the samples screened with the PID. Concentrations ranged from not detected to 170 parts per million (B-132-07, 8-8 ft depth). PID readings were above zero in samples from each boring except B-132-06. Readings were highest at 6 to 8 foot depth sample. The PID was calibrated on March 29, 2008 in general accordance with the manufacturer's recommended calibration procedures. The PID readings were recorded with the soil descriptions and indications of staining or odors, if present. Logs for each boring are presented in Appendix C.

Soil samples for laboratory analysis were collected from each boring at the sample intervals identified in Table 1. These samples were obtained from the bottom of each boring. All soil samples were placed in laboratory-supplied containers and stored on ice pending shipment to Prism Laboratories, Inc. (Prism) in Charlotte, NC. Sample information was recorded on the Chain-of-Custody form and the samples were submitted for chemical analysis of TPH-GRO by Modified EPA Method 5030/8015 and TPH-DRO by Modified EPA Method 3545/8015. An Oil and Grease soil sample was collected at B-132-02 because of its proximity to the probable UST.

Soils collected from borings within the Study Area generally consisted of silty sand (SM) or sandy silt (ML). Probable fill materials were present at depths of 2 to 6 feet. GPS coordinates for each boring are provided in Appendix D. GPS coordinates for each boring were obtained using a Trimble Pro-XRS DGPS system (Appendix D) with coordinates reported in US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet.

4.0 DISCUSSION OF RESULTS

Soil samples were collected from Geoprobe borings at Parcel 132 and analyzed for TPH-DRO, TPH-GRO, and Oil and Grease. TPH-DRO was detected in samples from the 6 to 8 foot depth interval in B-132-01 through B-132-05, and B-132-07 at estimated concentrations of 29 mg/kg, 22 mg/kg, 6.2J mg/kg, 64 mg/kg, 510 mg/kg, and 500 mg/kg, respectively. TPH-GRO was detected in samples from the 6 to 8 ft interval in B-132-01 through B-132-05, and B-132-07 at estimated concentrations of 56 mg/kg, 36 mg/kg, 10 mg/kg, 180 mg/kg, 2,800 mg/kg, and 1,400 mg/kg, respectively. A "J" value indicates that the analyte was positively identified but the value is estimated below the reporting limit.

Field screening with a PID was performed at two foot intervals in each boring, providing an indication of the vertical extent of the contamination. Field screening results were 0 ppm for the 0 to 6 ft interval for all borings except B-132-01 and B-132-04 located near the probable UST. Alternate sources of the contamination are the apparent off site up-gradient Wilco-Hess gas station located to the northeast of Parcel 132, and the apparent cross-gradient Wilco gas station located to the north of Parcel 132. The extent of the horizontal soil contamination may extend to the southeast of the DOT right-of-way on Parcel 132, to the northwest of the soil borings onto East King Street, to the north of soil boring B-132-05, and to the southwest of soil boring B-132-04. The area of petroleum impacted soil has not been completely vertically defined.

Sample B-132-06 from the 6 to 8 foot depth interval had TPH-GRO and TPH-DRO at levels below the laboratory reporting limits. Laboratory analytical results are summarized in Table 2. Laboratory reports for these samples are presented in Appendix E.

5.0 SUMMARY AND CONCLUSIONS

The geophysical survey conducted at the site indicated the presence of a probable UST located on the westernmost grass island of Parcel 132 near soil borings B-132-01 through B-132-04. The geophysical survey also indicated the presence of buried utility lines and conduits. Seven soil borings (B-132-01 through B-132-07) were advanced to evaluate potential petroleum contamination within the Study Area, as well as to document soil conditions. Laboratory results indicated soil contamination at soil borings B-132-01 through B-132-05, and B-132-07.

TPH-GRO was detected in soil samples at a depth of 6 to 8 feet in B-132-01 through B-132-05, and B-132-07 at estimated concentrations of 56 mg/kg, 36 mg/kg, 10 mg/kg, 180 mg/kg, 2,800 mg/kg, and 1,400 mg/kg, respectively. TPH-DRO was detected in soil samples at a depth of 6 to 8 feet in B-132-04, B-132-05, and B-132-07 at estimated concentrations of 64 mg/kg, 510 mg/kg, and 500 mg/kg, respectively. These concentrations exceed the TPH Action Level of 10 mg/kg for GRO and 40 mg/kg for DRO (*UST Section Guidelines for the Investigation and Remediation of Contamination from Non-UST Petroleum Releases, Department of Environment and Natural Resource, Division of Waste Management, UST Section, July, 2007*).

Laboratory results indicate that TPH-DRO was present at depths of 6 to 8 ft in borings B-132-01, B-132-02, and B-132-07. These concentrations of TPH-DRO were below the TPH Action Level of 40 mg/kg in these samples. Laboratory analytical results for TPH-GRO and TPH-DRO were below the laboratory analytical reporting limits for soil boring B-132-06. Oil and Grease was below the laboratory analytical reporting limit for soil boring B-65-01.

6.0 RECOMMENDATIONS

Soil contamination is expected to be encountered during the excavation activities in the right-of-way of Parcel 132. The NCDOT should properly transport and treat the excavated soil in the vicinity of these soil borings. During roadway construction, the NCDOT transportation/disposal contractor may use different criteria for estimating impacted soil.

7.0 LIMITATIONS

This Preliminary Site Assessment was prepared for the use of the North Carolina Department of Transportation. The scope of work performed at the site is limited to the tasks described in our cost proposal dated March 3, 2008. This report is not intended to represent an exhaustive research of all potential hazards that may exist. Schnabel makes no other declarations, or any express or implied warranty, as to the professional services provided under the terms of the agreement.

TABLES

TABLE 1
SAMPLING INTERVALS AND FIELD VOLATILE MEASUREMENTS
PARCEL 132
NCDOT U-4020, WATAUGA COUNTY

Sample Depth Below Ground Surface	Soil Borings						
	B-132-01	B-132-02	B-132-03	B-132-04	B-132-05	B-132-06	B-132-07
	PID (ppm)						
0 - 2 feet	ND	ND	ND	ND	ND	ND	ND
2 - 4 feet	ND	ND	ND	0.7	ND	ND	ND
4 - 6 feet	1	ND	ND	0.6	ND	ND	ND
6 - 8 feet	22.5	3.6	5.9	53.8	170	ND	117

Shaded cells were submitted for laboratory analysis

NS = Not Sampled

ND = Volatiles Not Detected by field measurements (0 ppm headspace reading with PID)

PID readings were obtained using a MiniRae Photo Ionization Detector

ppm = parts per million

**TABLE 2
SUMMARY OF LABORATORY RESULTS
PARCEL 132
NCDOT U-4020, WATAUGA COUNTY**

Boring No.	Depth (ft)	Matrix	TPH-GRO	TPH-DRO	Oil and Grease
B-132-01	0 - 2	Soil	NS	NS	NS
B-132-01	2 - 4	Soil	NS	NS	NS
B-132-01	4 - 6	Soil	NS	NS	NS
B-132-01	6 - 8	Soil	56	29	NS
B-132-02	0 - 2	Soil	NS	NS	BRL
B-132-02	2 - 4	Soil	NS	NS	NS
B-132-02	4 - 6	Soil	NS	NS	NS
B-132-02	6 - 8	Soil	36	22	NS
B-132-03	0 - 2	Soil	NS	NS	NS
B-132-03	2 - 4	Soil	NS	NS	NS
B-132-03	4 - 6	Soil	NS	NS	NS
B-132-03	6 - 8	Soil	10	6.2 J	NS
B-132-04	0 - 2	Soil	NS	NS	NS
B-132-04	2 - 4	Soil	NS	NS	NS
B-132-04	4 - 6	Soil	NS	NS	NS
B-132-04	6 - 8	Soil	180	64	NS
B-132-05	0 - 2	Soil	NS	NS	NS
B-132-05	2 - 4	Soil	NS	NS	NS
B-132-05	4 - 6	Soil	NS	NS	NS
B-132-05	6 - 8	Soil	2,800	510	NS
B-132-06	0 - 2	Soil	NS	NS	NS
B-132-06	2 - 4	Soil	NS	NS	NS
B-132-06	4 - 6	Soil	NS	NS	NS
B-132-06	6 - 8	Soil	BRL	BRL	NS
B-132-07	0 - 2	Soil	NS	NS	NS
B-132-07	2 - 4	Soil	NS	NS	NS
B-132-07	4 - 6	Soil	NS	NS	NS
B-132-07	6 - 8	Soil	1,400	500	NS
Regulatory Concentrations					
TPH Action Level		Soil	10	40	250

Units in mg/kg for soils

J: The analyte was positively identified but the value is estimated below the reporting limit.

mg/kg = parts per million

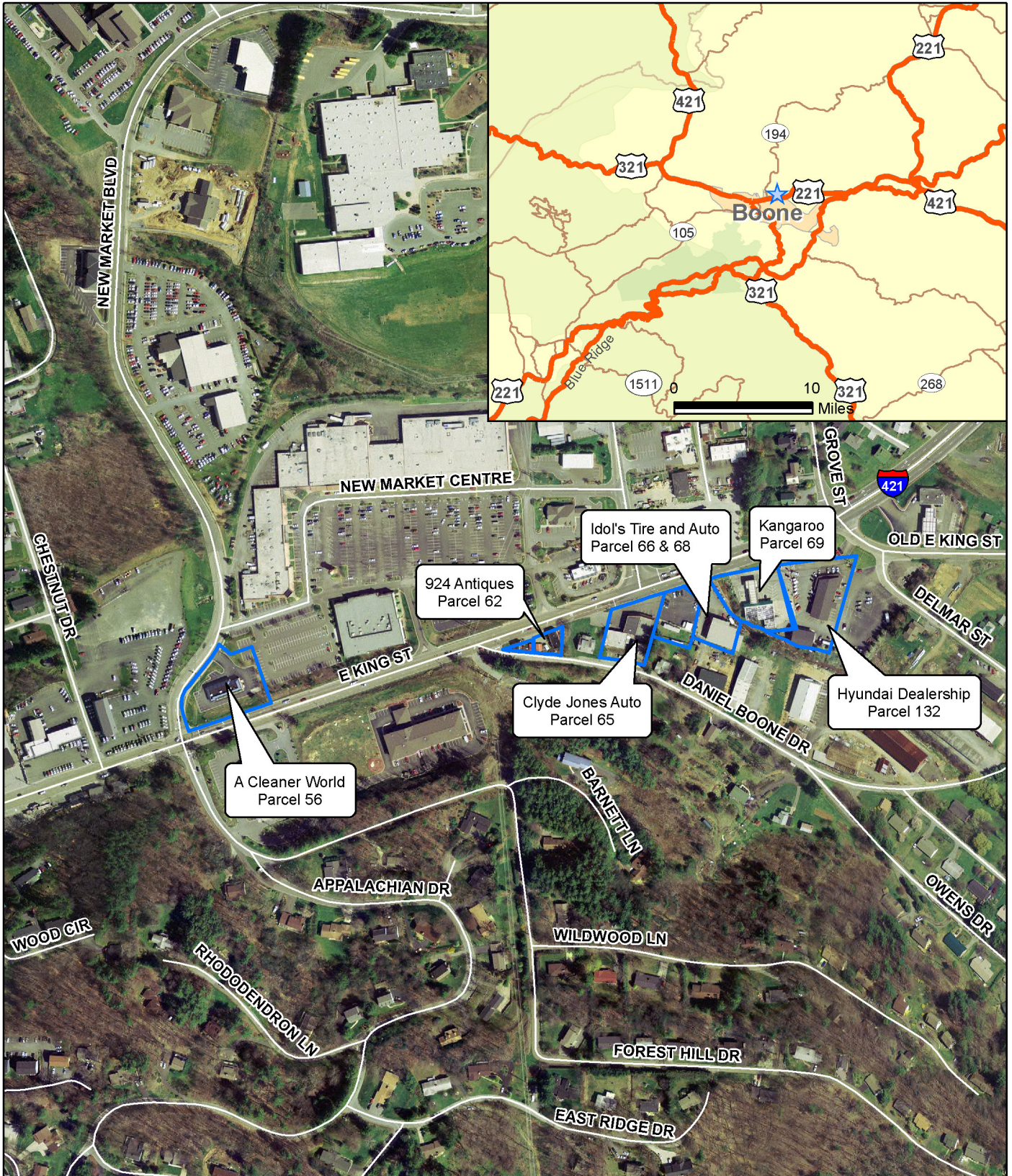
BRL - Below Reporting Limit

NS - Not Sampled

Listed Regulatory Concentrations are from UST Section Guidelines

for the Investigation and Remediation of Contamination from Non-UST Petroleum Releases

FIGURES



Source: 1. Watauga County GIS,
<http://www.wataugacounty.org/gis/index.asp>

400 200 0 400 Feet

Scale: 1:4,800

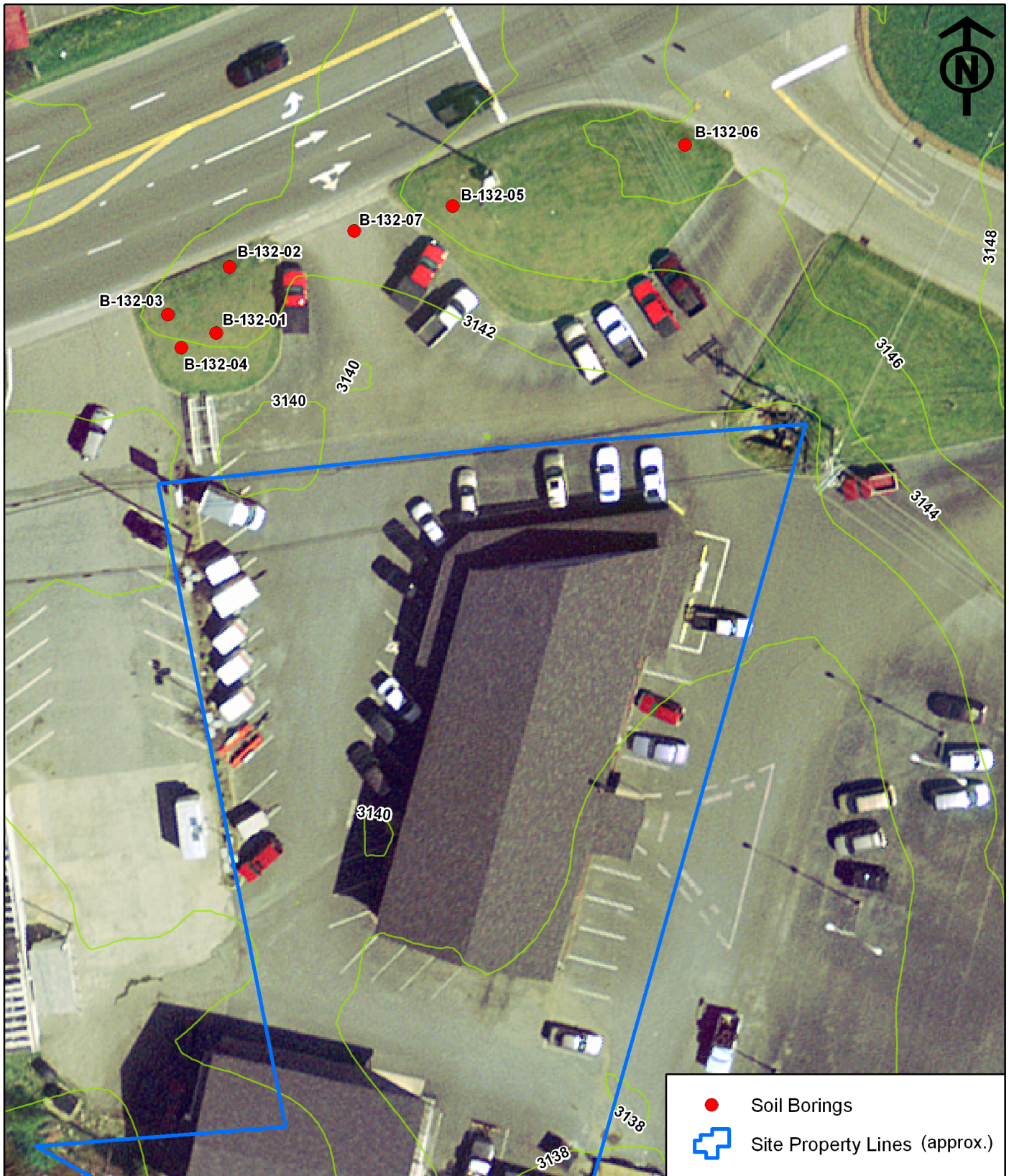


NC Department of Transportation
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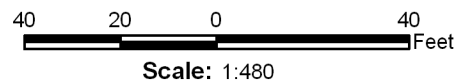
State Project No. U-4020
 Watauga County, North Carolina

VICINITY MAP

Figure 1



Source: 1. Watauga County GIS,
<http://www.wataugacounty.org/gis/index.asp>



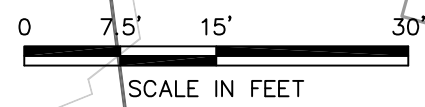
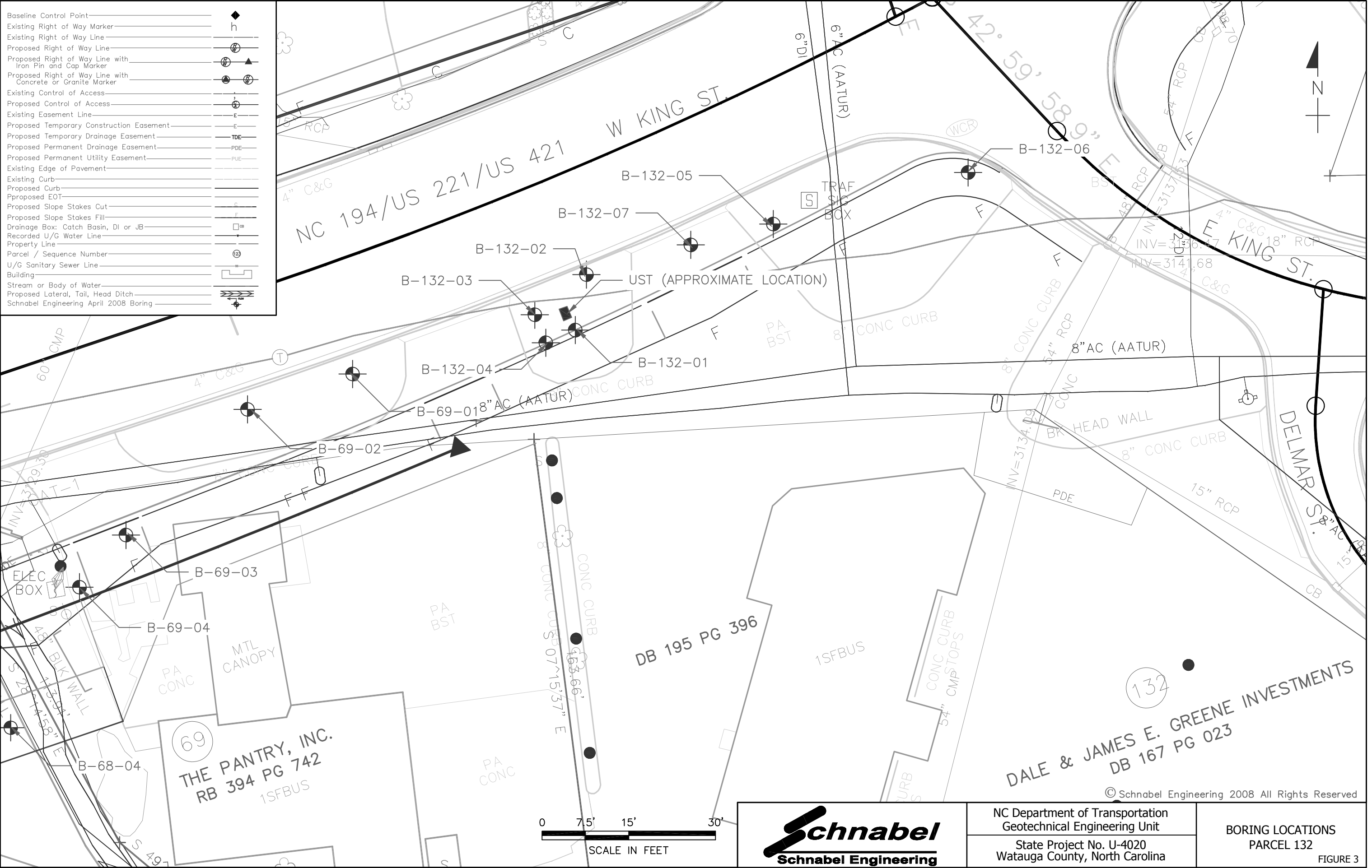
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 Watauga County, North Carolina

SITE MAP
 PARCEL 132

Figure 2

Baseline Control Point	◆
Existing Right of Way Marker	h
Existing Right of Way Line	—
Proposed Right of Way Line	—
Proposed Right of Way Line with Iron Pin and Cap Marker	⊙
Proposed Right of Way Line with Concrete or Granite Marker	⊙
Existing Control of Access	—
Proposed Control of Access	—
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Utility Easement	PUE
Existing Edge of Pavement	—
Existing Curb	—
Proposed Curb	—
Proposed EOT	—
Proposed Slope Stakes Cut	F
Proposed Slope Stakes Fill	F
Drainage Box: Catch Basin, DI or JB	□
Recorded U/G Water Line	—
Property Line	—
Parcel / Sequence Number	Ⓜ
U/G Sanitary Sewer Line	—
Building	—
Stream or Body of Water	—
Proposed Lateral, Tail, Head Ditch	—
Schnabel Engineering April 2008 Boring	—



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 Watauga County, North Carolina

BORING LOCATIONS
 PARCEL 132
 FIGURE 3

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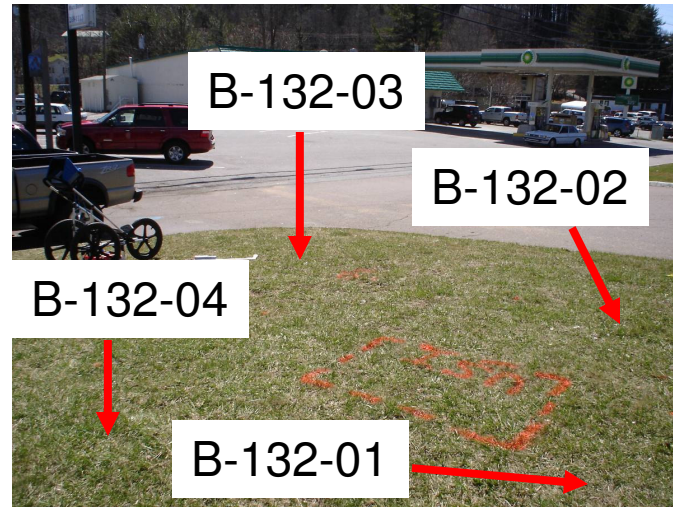
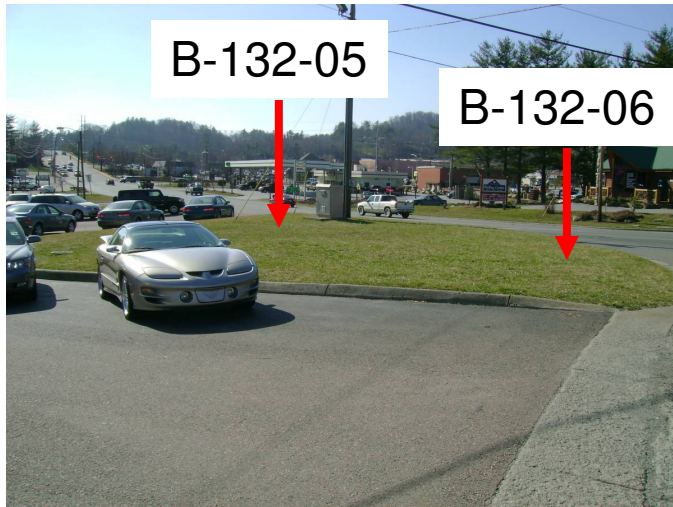
69
 THE PANTRY, INC.
 RB 394 PG 742
 1SFBUS

DB 195 PG 396
 1SFBUS

132
 DALE & JAMES E. GREENE INVESTMENTS
 DB 167 PG 023

APPENDIX A
Photographs

Parcel 132, Hyundai Dealership



APPENDIX B
Geophysics Report

May 2, 2008

Mr. Cyrus Parker
NCDOT, Geotechnical Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

Via email (pdf)

RE: State Project: U-4020
WBS Element: 35015.1.1
County: Watauga
Description: US 421 (King Street) from US 321 (Hardin Street) to east
of NC 194 (Jefferson Road) in Boone

SUBJECT: Report on Geophysical Surveys of Parcel 132
Schnabel Engineering Project No. 07210023.07

Dear Mr. Parker:

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

1.0 INTRODUCTION

Schnabel Engineering conducted geophysical surveys on March 12 and March 21, 2008, in the accessible areas of Parcel 132 (Dale and James Greene Investment Property, Mack Brown Hyundai Dealership) under our 2007 contract with the NCDOT. Parcel 132 is located south corner of US 421 (King Street) and Delmar Street. The work was conducted at the location indicated by the NCDOT to support their environmental assessment of the subject parcel. 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 site.

2.0 FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (building, curbs, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings. The geophysical investigation consisted of an electromagnetic (EM) induction survey using a Geonics EM61-MK2 instrument, and a ground-penetrating radar survey using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna.

The EM61 data were collected along parallel survey lines spaced about 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over anomalous EM readings not attributed to cultural features. A possible UST was located and marked on the ground at this site. Pictures of the location of this possible UST as marked in the field are shown in Figure 1.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data are shown on Figures 2 and 3. The EM61 early time gate results are plotted on Figure 2. The early time gate data provide the most sensitive detection of metal object targets, regardless of size. Figure 3 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show linear anomalies probably caused by buried utilities and anomalies caused by known site features (Figures 2 and 3). GPR surveys over an anomaly located in the grassy island along the western edge of the parcel indicated the presence of a possible UST. An example GPR image showing the reflection from the possible UST is shown on Figures 2

and 3. Figures 2 and 3 also include the location of the possible UST as marked in the field. The GPR data indicate that the possible UST is buried about 3 to 4 feet below ground surface and is about 3 feet in diameter and about 5 feet long, equivalent to a capacity of approximately 270 gallons.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 132 of Project U-4020 in Boone, NC indicates the following:

- The geophysical data indicate the presence of a possible UST on Parcel 132. The possible UST is about 270-gallon capacity and is buried about 3 to 4 feet below ground surface.

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, P.G.
Project Manager



Edward D. Billington, P.G.
Senior Vice President

JW/JS/NB

Attachment: Figures (3)

FILE: G:\2007 PROJECTS\07210023 (NCDOT 2007 GEOPHYSICAL SERVICES)\PHASE 07 (U-4020 - WATAUGA COUNTY)\REPORT\NCDOT (GOEPHYSICS & PSA)\PARCEL 132\REPORT ON PARCEL 132.DOC



Parcel 132 – Mack Brown Hyundai, looking southeast
 UST: 3' x 5'



Parcel 132 – Mack Brown Hyundai, looking southwest
 UST: 3' x 5'

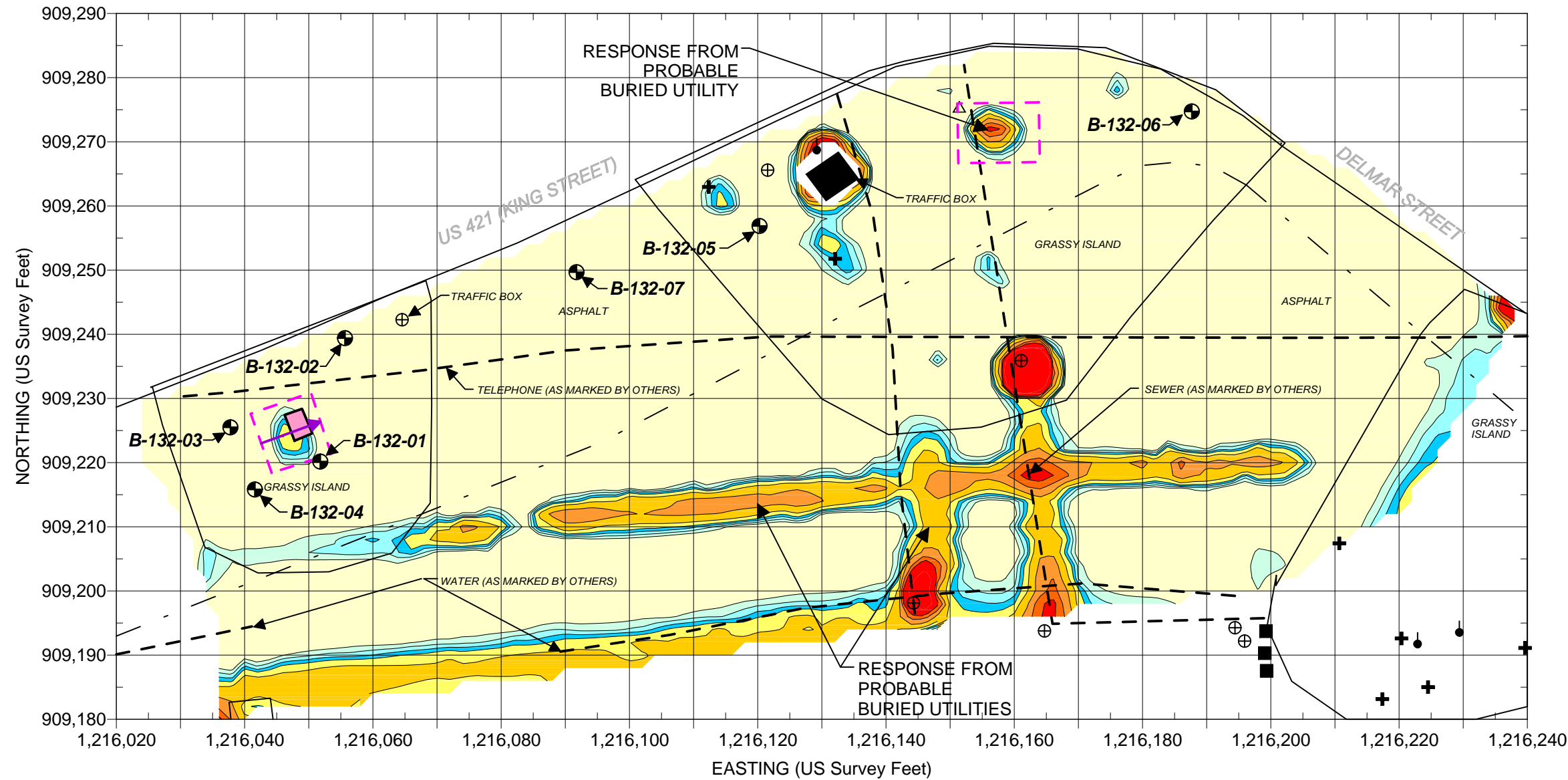


NC Department of Transportation
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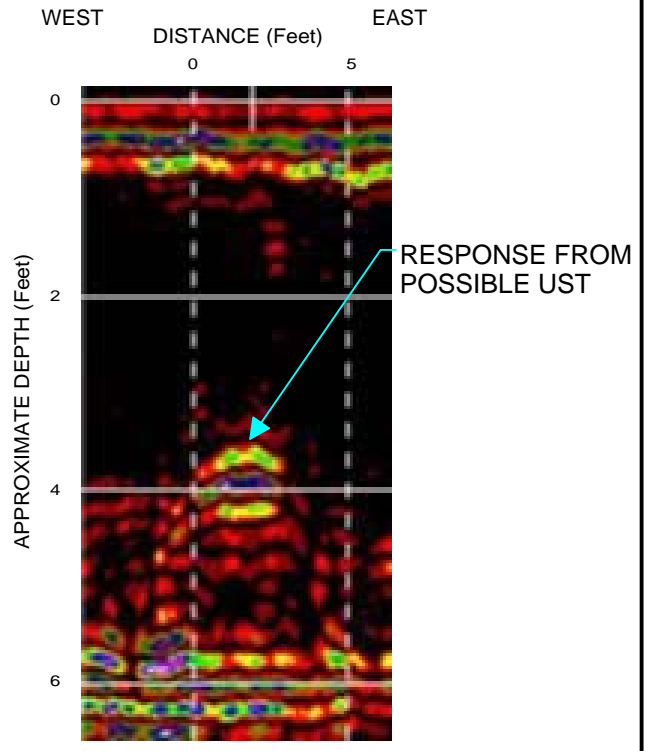
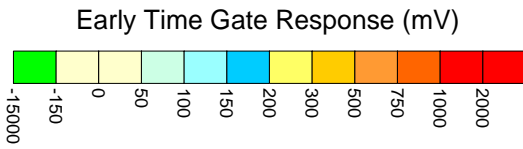
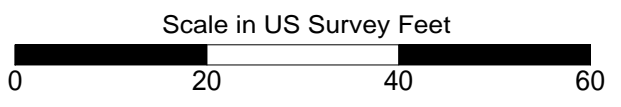
State Project No. U-4020
 Watauga County, North Carolina

PARCEL 132
PHOTOS OF POSSIBLE
UST LOCATIONS

FIGURE 1



- EXPLANATION**
- EM61 SURVEY AREA - DATA ACQUIRED ALONG PARALLEL SURVEY LINES SPACED APPROXIMATELY 2.5 FEET APART
 - BORING LOCATION
 - GUY WIRE
 - SIGN
 - METALLIC OBJECT
 - NCDOT MARKER
 - UTILITY POLE
 - STORMWATER GRATE
 - UTILITY MANHOLE
 - MONITORING WELL
 - LIGHTPOLE
 - GPR SURVEY AREA
 - LOCATION OF GPR SURVEY LINE SHOWN
 - APPROXIMATE LOCATION OF POSSIBLE UTILITY (SOME MARKED IN FIELD)
 - APPROXIMATE LOCATION OF POSSIBLE BURIED UST AS MARKED IN FIELD
 - APPROXIMATE LIMITS OF NCDOT PROJECT



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 12, 2008, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on March 21, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

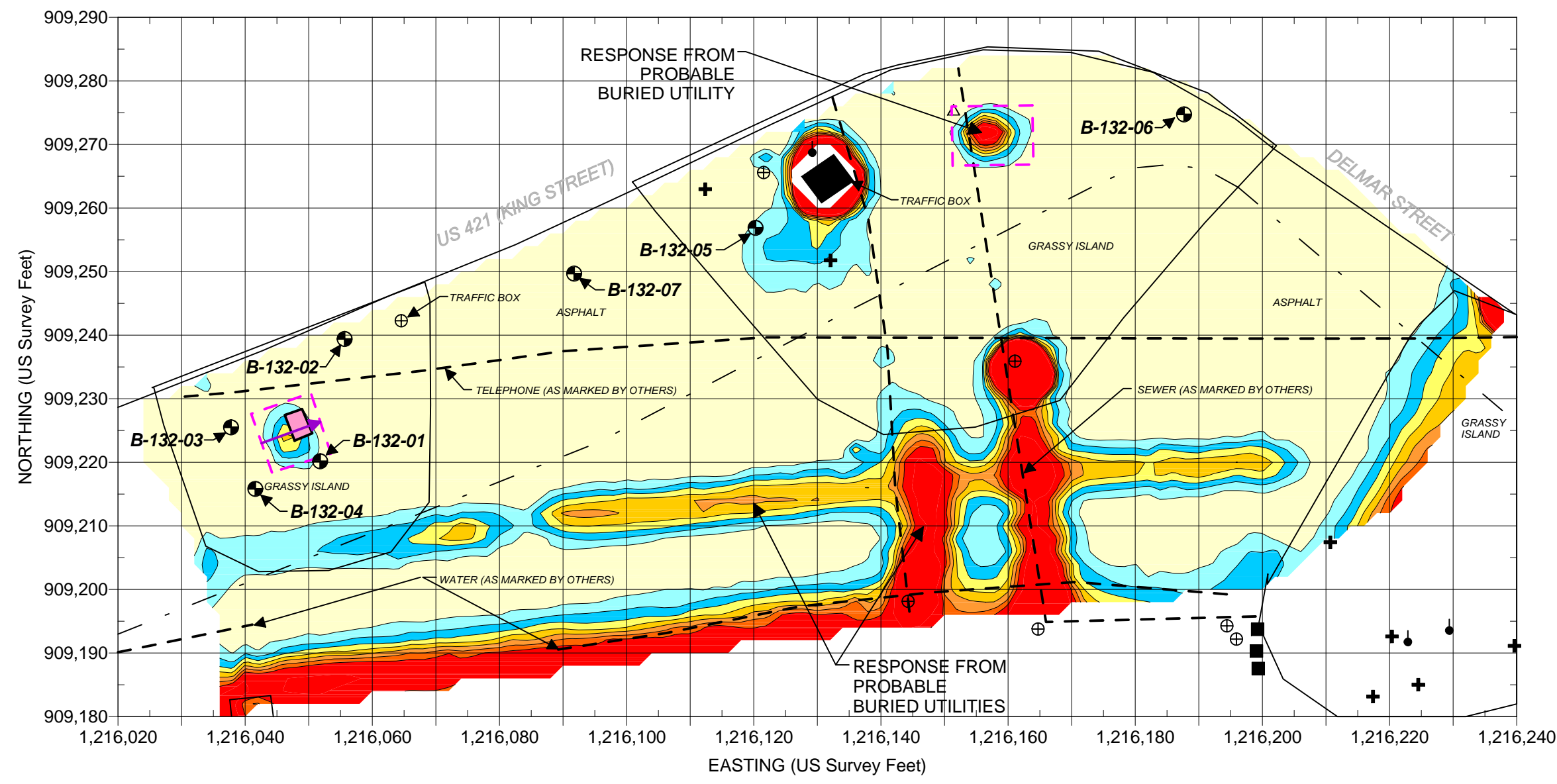


NC Department of Transportation
Geotechnical Engineering Unit

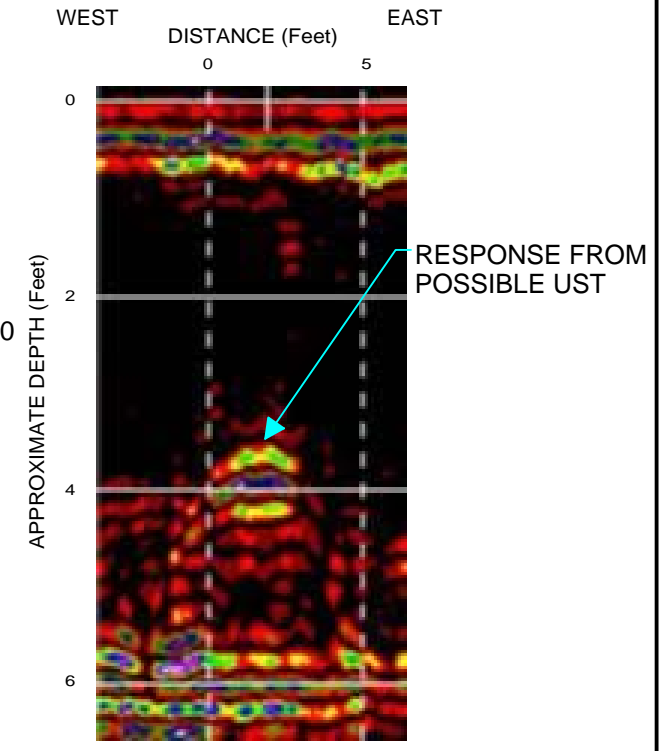
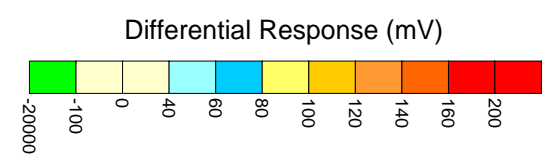
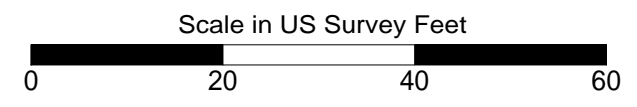
State Project No. U-4020
Watauga County, North Carolina

PARCEL 132
EM61 EARLY TIME
GATE RESPONSE

FIGURE 2



- EXPLANATION**
- EM61 SURVEY AREA - DATA ACQUIRED ALONG PARALLEL SURVEY LINES SPACED APPROXIMATELY 2.5 FEET APART
 - BORING LOCATION
 - GUY WIRE
 - SIGN
 - METALLIC OBJECT
 - NCDOT MARKER
 - UTILITY POLE
 - STORMWATER GRATE
 - UTILITY MANHOLE
 - MONITORING WELL
 - LIGHTPOLE
 - GPR SURVEY AREA
 - LOCATION OF GPR SURVEY LINE SHOWN
 - APPROXIMATE LOCATION OF POSSIBLE UTILITY (SOME MARKED IN FIELD)
 - APPROXIMATE LOCATION OF POSSIBLE BURIED UST AS MARKED IN FIELD
 - APPROXIMATE LIMITS OF NCDOT PROJECT



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 12, 2008, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on March 21, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



NC Department of Transportation
Geotechnical Engineering Unit

State Project No. U-4020
Watauga County, North Carolina

**PARCEL 132
EM61 DIFFERENTIAL
RESPONSE**

FIGURE 3

APPENDIX C
Soil Boring Logs



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: **B-132-01**
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC

Contractor Foreman: Walt Davis

Schnabel Representative: Ben Bradley

Equipment: Geoprobe 6610DT

Method: Geoprobe,
Macrocore

Hammer Type: NA

Dates Started: 4/2/08 **Finished:** 4/2/08

X: 1215377 ft **Y:** 908944 ft

Ground Surface Elevation: 3142± (ft) **Total Depth:** 8.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
After Drilling	4/2	11:51 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3141.8					
	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL						
2.0	PROBABLE FILL, sampled as sandy silt, moist, brown, estimated 5 - 10% fine to coarse grained sand	FILL	3140.1				PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3138.1		5		PID = 0 ppm	
6.0	SANDY SILT, moist, gray, probable RESIDUAL material, petroleum odor recognized	ML	3136.1				PID = 1.0 ppm	
8.0			3134.1			S-1	PID = 22.5 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GPJ SCHNABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: B-132-02
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC

Contractor Foreman: Walt Davis

Schnabel Representative: Ben Bradley

Equipment: Geoprobe 6610DT

Method: Geoprobe,
Macrocore

Hammer Type: NA

Dates Started: 4/2/08 **Finished:** 4/2/08

X: 1215312 ft **Y:** 908983 ft

Ground Surface Elevation: 3142± (ft) **Total Depth:** 8.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
After Drilling	4/2	11:59 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3141.9					
	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL						
2.0	PROBABLE FILL, sampled as sandy silt, moist, brown, estimated 5 - 10% fine to coarse grained sand	FILL	3140.2			S-1	PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3138.2		5		PID = 0 ppm	
6.0	SANDY SILT, moist, gray, probable RESIDUAL material, petroleum odor recognized	ML	3136.2				PID = 0 ppm	
8.0			3134.2			S-2	PID = 3.6 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GPJ SCHNABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: **B-132-03**
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: Walt Davis
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 4/2/08 **Finished:** 4/2/08
X: 1215223 ft **Y:** 908953 ft
Ground Surface Elevation: 3142± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
Date	Time	Depth	Casing	Caved	
4/2	11:08 AM	Dry	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DATA		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3141.8					
2.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3140.1				PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, moist, brown, estimated 5 - 10% fine to coarse grained sand	FILL	3138.1		5		PID = 0 ppm	
6.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3136.1				PID = 0 ppm	
8.0	SANDY SILT, moist, gray, probable RESIDUAL material, petroleum odor recognized	ML	3134.1			S-1	PID = 5.9 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GFJ SCHINABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: B-132-04
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: Walt Davis
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 4/2/08 **Finished:** 4/2/08
X: 1214306 ft **Y:** 908751 ft
Ground Surface Elevation: 3142± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
Date	Time	Depth	Casing	Caved	
4/2	11:28 AM	Dry	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3141.6					
2.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3139.9				PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, moist, brown, estimated 5 - 10% fine to coarse grained sand	FILL	3137.9		5		PID = 0.7 ppm	
6.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3135.9				PID = 0.6 ppm	
8.0	SANDY SILT, moist, gray, probable RESIDUAL material, petroleum odor recognized	ML	3133.9			S-1	PID = 53.8 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GPJ SCHNABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: B-132-05
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: Walt Davis
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 4/2/08 **Finished:** 4/2/08
X: 1214303 ft **Y:** 908815 ft
Ground Surface Elevation: 3144± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
Date	Time	Depth	Casing	Caved	
4/2	1:03 PM	Dry	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3143.9					
2.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3142.2				PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, moist, brownish gray, estimated <5% organics	FILL	3140.2				PID = 0 ppm	
6.0	SANDY SILT, moist, gray, probable RESIDUAL material	ML	3138.2		5		PID = 0 ppm	
8.0	SANDY SILT, moist, brownish gray, probable RESIDUAL material, petroleum odor recognized	ML	3136.2			S-1	PID = 170 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GPJ SCHNABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: B-132-06
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: Walt Davis
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 4/2/08 **Finished:** 4/2/08
X: 1214352 ft **Y:** 908883 ft
Ground Surface Elevation: 3156± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
Date	Time	Depth	Casing	Caved	
4/2	12:38 PM	Dry	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3155.8					
2.0	PROBABLE FILL, sampled as sandy silt, moist, brown	FILL	3154.1				PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, moist, brownish gray, estimated <5% organics	FILL	3152.1		5		PID = 0 ppm	
6.0	PROBABLE FILL, sampled as sandy silt, moist, brown, estimated <5% organics	FILL	3150.1				PID = 0 ppm	
8.0	SANDY SILT, moist, brown, estimated <5% terra cotta, probable RESIDUAL material	ML	3148.1			S-1	PID = 0 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GPJ SCHINABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08



**GEO
PROBE
LOG**

Project: NCDOT Preliminary Site Assessments
Watauga County
Boone, North Carolina

Geo Probe Number: **B-132-07**
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: Walt Davis
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 4/2/08 **Finished:** 4/2/08
X: 1214370 ft **Y:** 908904 ft
Ground Surface Elevation: 3143± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
	Date	Time	Depth	Casing	Caved
After Drilling	4/2	2:16 PM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.6	Asphalt		3142.4					
0.6	PROBABLE FILL, sampled as sandy silt, moist, gray, estimated <5% rock fragments		3141.0					
2.0	SANDY SILT, moist, gray, probable RESIDUAL material		3137.0				PID = 0 ppm	
6.0	SANDY SILT, moist, yellowish brown, probable RESIDUAL material, petroleum odor recognized		3135.0				PID = 0 ppm	
8.0						S-1	PID = 117 ppm	

Bottom of Geo Probe at 8.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG BORELOGS:GPJ SCHNABEL DATA TEMPLATE 2008_04_01.GDT 5/29/08

APPENDIX D
Soil Boring GPS Coordinates

**Soil Boring GPS Coordinates
NCDOT U-4020, WATAUGA COUNTY**

Soil Boring GPS Coordinates		
Boring Identification	Easting	Northing
	X	Y
B-132-01	1215377	908944
B-132-02	1215312	908983
B-132-03	1215223	908953
B-132-04	1214306	908751
B-132-05	1214303	908815
B-132-06	1214352	908883
B-132-07	1214370	908904

* NC State Plane 1983 System, NC 3200 Zone,
NAD 83 Datum, US Survey Feet

APPENDIX E
Prism Lab Report

Date: 04/18/08
Company: N. C. Department of Transportation
Contact: Ben Bradley
Address: c/o Schnabel Engineering
11 A Oak Branch Drive
Greensboro, NC 27407

Client Project ID: NCDOT Parcel 132
Prism COC Group No: G0408094
Collection Date(s): 04/02/08
Lab Submittal Date(s): 04/03/08
Client Project Name Or No: Hyundai, Boone, NC WBS

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 9 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 end of this case narrative. Quality control statements and/or sample specific remarks are included in the sample comments section of the laboratory report for each sample affected.

Semi Volatile Analysis

No Anomalies Reported

Volatile Analysis

See laboratory report for additional comments.

Metals Analysis

N/A

Wet Lab and Micro Analysis

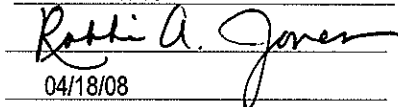
N/A

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

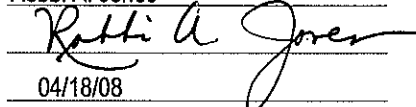
Date Reviewed by: Robbi A. Jones

Project Manager: Robbi A. Jones

Signature:



Signature:



Review Date:

04/18/08

Approval Date:

04/18/08

Data Qualifiers Key Reference:

- B: Compound also detected in the method blank.
- #: Result outside of the QC limits.
- 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.
- H: Estimated concentration with a high bias.
- L: Estimated concentration with a low bias.
- M: A matrix effect is present.

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.



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

Laboratory Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-01
 Prism Sample ID: 210418
 COC Group: G0408094
 Time Collected: 04/02/08 11:50
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	72.1	%			1	SM2540 G	04/08/08 12:35	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	29	mg/kg	9.5	1.5	1	8015B	04/10/08 16:08	joegel	Q31647
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Sample Preparation: 25.5 g / 1 mL 3545 04/09/08 10:00 wconder P21297

Surrogate	% Recovery	Control Limits
o-Terphenyl	62	49 - 124

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	56	mg/kg	6.9	4.3	50	8015B	04/08/08 23:01	wbradley	Q31561
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Surrogate	% Recovery	Control Limits
aaa-TFT	84	55 - 129

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Laboratory Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-02
 Prism Sample ID: 210419
 COC Group: G0408094
 Time Collected: 04/02/08 12:15
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID						
Percent Solids Determination															
Percent Solids	79.2	%			1	SM2540 G	04/08/08 12:35	mbarber							
Oil and Grease by Soxhlet Extraction															
Oil and Grease	BRL	mg/kg	44	44	1	9071A	04/17/08 10:00	smanivanh	Q31844						
Diesel Range Organics (DRO) by GC-FID															
Diesel Range Organics (DRO)	22	mg/kg	8.7	1.4	1	8015B	04/10/08 16:44	javogel	Q31647						
Sample Preparation:			25.43 g	/	1 mL	3545	04/09/08 10:00	wconder	P21297						
<table border="1"> <thead> <tr> <th>Surrogate</th> <th>% Recovery</th> <th>Control Limits</th> </tr> </thead> <tbody> <tr> <td>o-Terphenyl</td> <td>69</td> <td>49 - 124</td> </tr> </tbody> </table>										Surrogate	% Recovery	Control Limits	o-Terphenyl	69	49 - 124
Surrogate	% Recovery	Control Limits													
o-Terphenyl	69	49 - 124													
Gasoline Range Organics (GRO) by GC-FID															
Gasoline Range Organics (GRO)	36	mg/kg	6.3	4.0	50	8015B	04/08/08 23:32	wbradley	Q31561						
<table border="1"> <thead> <tr> <th>Surrogate</th> <th>% Recovery</th> <th>Control Limits</th> </tr> </thead> <tbody> <tr> <td>aaa-TFT</td> <td>98</td> <td>55 - 129</td> </tr> </tbody> </table>										Surrogate	% Recovery	Control Limits	aaa-TFT	98	55 - 129
Surrogate	% Recovery	Control Limits													
aaa-TFT	98	55 - 129													

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Laboratory Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-03
 Prism Sample ID: 210420
 COC Group: G0408094
 Time Collected: 04/02/08 11:30
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	80.2	%			1	SM2540 G	04/08/08 12:35	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	6.2 J	mg/kg	8.6	1.4	1	8015B	04/10/08 17:20	javogel	Q31647
Sample Preparation:			25.4 g	/	1 mL	3545	04/09/08 10:00	wconder	P21297
					Surrogate	% Recovery	Control Limits		
					o-Terphenyl	81	49 - 124		
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	10	mg/kg	6.2	3.9	50	8015B	04/09/08 0:04	wbradley	Q31561
					Surrogate	% Recovery	Control Limits		
					aaa-TFT	118	55 - 129		

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Laboratory Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-04
 Prism Sample ID: 210421
 COC Group: G0408094
 Time Collected: 04/02/08 11:00
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	72.1	%			1	SM2540 G	04/08/08 12:35	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	64	mg/kg	9.6	1.5	1	8015B	04/10/08 18:31	jbogel	Q31647
Sample Preparation:			25.31 g	/	1 mL	3545	04/09/08 10:00	wconder	P21297
					Surrogate		% Recovery	Control Limits	
					o-Terphenyl		86	49 - 124	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	180	mg/kg	6.9	4.3	50	8015B	04/09/08 0:35	wbradley	Q31561
					Surrogate		% Recovery	Control Limits	
					aaa-TFT		109	55 - 129	

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Laboratory Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-05
 Prism Sample ID: 210422
 COC Group: G0408094
 Time Collected: 04/02/08 13:15
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	57.8	%			1	SM2540 G	04/08/08 12:35	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	510	mg/kg	61	9.8	5	8015B	04/11/08 7:48	jvogel	Q31647
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Sample Preparation: 25.14 g / 1 mL 3545 04/09/08 10:00 wconder P21297

Surrogate	% Recovery	Control Limits
o-Terphenyl	68	49 - 124

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	2800	mg/kg	350	220	2000	8015B	04/09/08 12:12	wbradley	Q31561
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Surrogate	% Recovery	Control Limits
aaa-TFT	DO #	55 - 129

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Laboratory Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-06
 Prism Sample ID: 210423
 COC Group: G0408094
 Time Collected: 04/02/08 12:45
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
-----------	--------	-------	--------------	-----	-----------------	--------	--------------------	---------	----------

Percent Solids Determination

Percent Solids	78.7	%			1	SM2540 G	04/08/08 12:35	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	8.8	1.4	1	8015B	04/10/08 19:43	jvoget	Q31647
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Sample Preparation: 25.13 g / 1 mL 3545 04/09/08 10:00 wconder P21297

Surrogate	% Recovery	Control Limits
o-Terphenyl	83	49 - 124

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	1.3	0.026	1	8015B	04/04/08 23:06	wbradley	Q31508
-------------------------------	-----	-------	-----	-------	---	-------	----------------	----------	--------

Surrogate	% Recovery	Control Limits
aaa-TFT	57	55 - 129

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Level II QC Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07

COC Group Number: G0408094
 Date/Time Submitted: 4/3/2008 8:30

Gasoline Range Organics (GRO) by GC-FID, method 8015B

Method Blank							QC Batch ID
	Result	RL	Control Limit	Units			
Gasoline Range Organics (GRO)	ND	1	<0.5	mg/kg			Q31508

Laboratory Control Sample							QC Batch ID
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
Gasoline Range Organics (GRO)	1.945	2	mg/kg	97	64-124		Q31508

Matrix Spike							QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
210407 Gasoline Range Organics (GRO)	1.868	2	mg/kg	93	37-126		Q31508

Matrix Spike Duplicate									QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %		
210407 Gasoline Range Organics (GRO)	1.862	2	mg/kg	93	37-126	0	0 - 34		Q31508

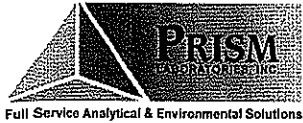
Gasoline Range Organics (GRO) by GC-FID, method 8015B

Method Blank							QC Batch ID
	Result	RL	Control Limit	Units			
Gasoline Range Organics (GRO)	ND	1	<0.5	mg/kg			Q31561

Laboratory Control Sample							QC Batch ID
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
Gasoline Range Organics (GRO)	1.603	2	mg/kg	80	64-124		Q31561

Matrix Spike							QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
210434 Gasoline Range Organics (GRO)	1.659	2	mg/kg	83	37-126		Q31561

Matrix Spike Duplicate									QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %		
210434 Gasoline Range Organics (GRO)	1.367	2	mg/kg	68	37-126	19	0 - 34		Q31561



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

Level II QC Report

04/18/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07

COC Group Number: G0408094
 Date/Time Submitted: 4/3/2008 8:30

Diesel Range Organics (DRO) by GC-FID, method 8015B

Method Blank							QC Batch ID		
	Result	RL	Control Limit	Units					
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg			Q31647		
Laboratory Control Sample							QC Batch ID		
	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
Diesel Range Organics (DRO)	84.2	80		mg/kg	105	55-109	Q31647		
Matrix Spike							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
210414 Diesel Range Organics (DRO)	69.4	80		mg/kg	87	50-117	Q31647		
Matrix Spike Duplicate							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
210414 Diesel Range Organics (DRO)	77.5	80		mg/kg	97	50-117	11	0 - 24	Q31647

Oil and Grease by Soxhlet Extraction, method 9071A

Method Blank							QC Batch ID		
	Result	RL	Control Limit	Units					
Oil and Grease	ND	35	<17.5	mg/kg			Q31844		
Laboratory Control Sample							QC Batch ID		
	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
Oil and Grease	5259	5249		mg/kg	100	80-120	Q31844		
Matrix Spike							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
210408 Oil and Grease	24951	24793		mg/kg	101	80-120	Q31844		
Matrix Spike Duplicate							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
210408 Oil and Grease	25235	24504		mg/kg	103	80-120	1	0 - 20	Q31844

#-See Case Narrative



Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/529-6364 • Fax: 704/525-0409

Client Company Name: Scanned
Report To/Contact Name: Ben Bradley
Reporting Address:

Phone: 336-274-0156 Fax (Yes) (No):
Email (Yes) (No) Email Address: bradley@prism-lab.com
EDD Type: PDF Excel Other
Site Location Name: Hwy 101A
Site Location Physical Address: Boone, NC

CHAIN OF CUSTODY RECORD

PAGE OF QUOTE # TO ENSURE PROPER BILLING:
Project Name: 7210023-07
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To:
Address:

Purchase Order No./Billing Reference
Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
"Working Days" 6-9 Days Standard 10 days Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES
RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY
Samples INTACT upon arrival? YES NO N/A
Received ON WET ICE? Temp 4.9
PROPER PRESERVATIVES indicated?
Received WITHIN HOLDING TIMES?
CUSTODY SEALS INTACT?
VOLATILES rec'd W/OUT HEADSPACE?
PROPER CONTAINERS used?

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
Certification: NELAC USACE FL NC
SC OTHER N/A
Water Chlorinated: YES NO
Sample Iced Upon Collection: YES NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
B-132-01	4-2-08	1150	Soil	G	3			X	X	210413
B-132-02	"	1215	"	"	3			X	X	210414
B-132-03	"	1130	"	"	3			X	X	210420
B-132-04	"	1100	"	"	3			X	X	210421
B-132-05	"	1315	"	"	3			X	X	210422
B-132-06	"	1245	"	"	3			X	X	210423

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature: Ben Bradley Affiliation: PRISM
 Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.
 Relinquished By: (Signature) Ben Bradley Date: 4-2-08 Military/Hours: 1335
 Relinquished By: (Signature) Ben Bradley Date: 4-3-08 8:30
 Relinquished By: (Signature) Ben Bradley Date: 4-3-08 8:30
 Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
 Fed Ex UPS Hand-delivered Prism Field Service Other
 NPDES: NC SC NC SC NC SC NC SC NC SC
 DRINKING WATER: NC SC NC SC NC SC
 SOLID WASTE: NC SC NC SC
 RCRA: NC SC NC SC
 CERCLA: NC SC NC SC
 LANDFILL: NC SC NC SC
 OTHER: NC SC NC SC
 *CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

PRISM USE ONLY
 Site Arrival Time:
 Site Departure Time:
 Field Tech Fee:
 Mileage:
 Additional Comments:
 SEE TRAILER



Case Narrative

Date: 04/17/08
Company: N. C. Department of Transportation
Contact: Ben Bradley
Address: c/o Schnabel Engineering
11 A Oak Branch Drive
Greensboro, NC 27407

Client Project ID: NCDOT Parcel 132
Prism COC Group No: G0408139
Collection Date(s): 04/02/08
Lab Submittal Date(s): 04/03/08

Client Project Name Or No: Hyundai, Boone, NC WBS

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 3 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 end of this case narrative. Quality control statements and/or sample specific remarks are included in the sample comments section of the laboratory report for each sample affected.

Semi Volatile Analysis

No Anomalies Reported

Volatile Analysis

See laboratory report for additional comments.

Metals Analysis

N/A

Wet Lab and Micro Analysis

N/A

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

Date Reviewed by: Robbi A. Jones

Project Manager: Robbi A. Jones

Signature:

Signature:

Review Date: 04/17/08

Approval Date: 04/17/08

Data Qualifiers Key Reference:

- B: Compound also detected in the method blank.
- #: Result outside of the QC limits.
- 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.
- H: Estimated concentration with a high bias.
- L: Estimated concentration with a low bias.
- M: A matrix effect is present.

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.



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

Laboratory Report

04/17/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07
 Sample Matrix: Soil

Client Sample ID: B-132-07
 Prism Sample ID: 210546
 COC Group: G0408139
 Time Collected: 04/02/08 14:13
 Time Submitted: 04/03/08 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	65.5	%			1	SM2540 G	04/08/08 12:35	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	500	mg/kg	53	8.6	5	8015B	04/14/08 17:39	jbvogel	Q31720
Sample Preparation:			25.17 g	/	1 mL	3545	04/10/08 17:15	wconder	P21301
						Surrogate	% Recovery	Control Limits	
						o-Terphenyl	83	49 - 124	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	1400	mg/kg	150	95	1000	8015B	04/09/08 12:44	wbradley	Q31561
						Surrogate	% Recovery	Control Limits	
						aaa-TFT	DO #	55 - 129	

Sample Comment(s):

GRO/5035 vials contained too much soil so laboratory used DRO sample to perform GRO/5030.

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.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services



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

Level II QC Report

04/17/08

N. C. Department of Transportation
 Attn: Ben Bradley
 c/o Schnabel Engineering
 11 A Oak Branch Drive
 Greensboro, NC 27407

Project Name: Hyundai, Boone, NC
 Project ID: NCDOT Parcel 132
 Project No.: WBS #7210023.07

COC Group Number: G0408139
 Date/Time Submitted: 4/3/2008 14:45

Gasoline Range Organics (GRO) by GC-FID, method 8015B

Method Blank					QC Batch ID
	Result	RL	Control Limit	Units	
Gasoline Range Organics (GRO)	ND	1	<0.5	mg/kg	Q31561

Laboratory Control Sample							QC Batch ID
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
Gasoline Range Organics (GRO)	1.603	2	mg/kg	80	64-124		Q31561

Matrix Spike							QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
210434 Gasoline Range Organics (GRO)	1.659	2	mg/kg	83	37-126		Q31561

Matrix Spike Duplicate									QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %		
210434 Gasoline Range Organics (GRO)	1.367	2	mg/kg	68	37-126	19	0 - 34		Q31561

Diesel Range Organics (DRO) by GC-FID, method 8015B

Method Blank					QC Batch ID
	Result	RL	Control Limit	Units	
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg	Q31720

Laboratory Control Sample							QC Batch ID
	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
Diesel Range Organics (DRO)	57.7	80	mg/kg	72	55-109		Q31720

Matrix Spike							QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %		
210631 Diesel Range Organics (DRO)	52.2	80	mg/kg	65	50-117		Q31720

Matrix Spike Duplicate									QC Batch ID
Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %		
210631 Diesel Range Organics (DRO)	54.8	80	mg/kg	69	50-117	5	0 - 24		Q31720

#-See Case Narrative

PRISM

LABORATORIES, INC.

Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
 Phone: 704/529-6364 • Fax: 704/525-0409

Client Company Name: Sungabel
 Report To/Contact Name: Ben Bradley
 Reporting Address:

CHAIN OF CUSTODY RECORD

PAGE OF QUOTE # TO ENSURE PROPER BILLING: 72002307
 Project Name: UST Project: (Yes) (No)
 Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No) I III IV
 *Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements
 Invoice To:
 Address:

Phone: 320-274-9456 Fax (Yes) (No):
 Email (Yes) (No) Email Address: zbradley@prism.com
 EDD Type: PDF X Excel Other: Other
 Site Location Name: Hyundai Dealership
 Site Location Physical Address: Doone, NC

Purchase Order No./Billing Reference
 Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
 "Working Days" 6-9 Days Standard 10 days Pre-Approved
 Samples received after 15:00 will be processed next business day.
 Turnaround time is based on business days, excluding weekends and holidays.
 (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY

Samples INTACT upon arrival? YES NO N/A
 Received ON WET ICE? Temp 50
 PROPER PRESERVATIVES indicated?
 Received WITHIN HOLDING TIMES?
 CUSTODY SEALS INTACT?
 VOLATILES rec'd W/OUT HEADSPACE?
 PROPER CONTAINERS used?

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
 Certification: NELAC USACE FL NC
 SC OTHER N/A
 Water Chlorinated: YES NO
 Sample Iced Upon Collection: YES NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER		PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO. SIZE				
B-13207	4-2-08	1413	Soil	G	3		TL, RCRA, CERCLA		210546

Sampler's Signature: Ben Bradley Sampled By (Print Name): Ben Bradley Affiliation:
 Upon relinquishing this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) Alex Kassin Date: 4/3/08 Military/Hours: 1215
 Relinquished By: (Signature) Alex Kassin Date: 4/3/08 Date: 4/3/08 Military/Hours: 1415
 Relinquished By: (Signature) Alex Kassin Date: 4/3/08 Date: 4/3/08 Military/Hours: 1415
 Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC RECEIVED AT THE LABORATORY.
 Fed Ex UPS Hand-delivered Prism Field Service Other

Additional Comments:
PRISM USE ONLY
 Site Arrival Time:
 Site Departure Time:
 Field Tech Fee:
 Mileage:
SEE REVERSE FOR TERMS & CONDITIONS
ORIGINAL

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)