

North Carolina Department of Transportation

**PRELIMINARY SITE ASSESSMENT
FOR PARCEL 62**

**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 62
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 62. The property is located at 924 East King Street and is occupied by 924 Antiques, currently owned by Charles Wallace (Figure 1). This property is located on the south side of King Street at the Daniel Boone Drive 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

A two-story brick building, metal shed, and wood paneled antique store are located on Parcel 62. The surface of the site is covered with a gravel parking area, a garden, an asphalt parking area, and antique items associated with the antique shop. Several utilities cross the site including buried water 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 proposed property acquisition areas (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 on 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 or conduits, but did not indicate the presence of potential USTs within the Study Area. 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 62 to obtain soil samples for chemical analysis from within the Study Area. Soil samples were collected to test for total petroleum hydrocarbon gasoline and diesel range volatile organic carbons (TPH-GRO and TPH-DRO), Oil and Grease, and RCRA Metals. Four borings (designated B-62-01 through B-62-04) were advanced by Subsurface Environmental Investigation of Statesville, NC on Parcel 62 on March 31, 2008. The locations of the four soil borings are shown on Figure 3. Borings B-62-01, B-62-02, and B-62-04 were each advanced to a total depth of eight feet below ground surface and B-62-03 was advanced to twelve feet below ground surface. Borings drilled within the Study Area were advanced utilizing 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 photo ionization detector (PID). Volatile organic compounds were allowed to accumulate in the headspace of each bag for approximately 15 minutes, after which time the headspace of each sealed bag was scanned with the PID. Headspace screening of

the soil samples indicated a concentration of 0 ppm at each boring location at intervals of two, four, six, and eight feet below ground surface. The PID was calibrated on March 29, 2008 in general accordance with the manufacturer's recommended calibration procedures. The PID readings are included on the GeoProbe Logs (Appendix C) along with soil descriptions and other observations of the samples such as staining or odors, if present.

Soil samples for laboratory analysis were collected from each boring at the sample intervals identified in Table 1. Samples to be analyzed for Total Petroleum Hydrocarbons Gasoline Range Organics (TPH-GRO) and Diesel Range Organics (TPH-DRO) were obtained from the bottom of each boring. Samples to be analyzed for metals were collected from ground surface to two feet depth. 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, TPH-DRO by Modified EPA Method 3545/8015, and RCRA Metals. An Oil and Grease soil sample was collected at B-62-02 where the garden is located adjacent to the wood paneled building.

Soils collected from borings within the Study Area generally consisted of silty sand (SM) or sandy silt (ML). Probable fill material was encountered in B-62-02 from 0.2 to 4.0 ft and in B-62-03 from 0.2 to 6.0 ft. These borings are located on the north side of Daniel Boone Drive on the higher elevation part of the site.

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 62 and analyzed for TPH-DRO, TPH-GRO, Oil and Grease, and Metals. The samples submitted for analysis did not reveal the presence of TPH-GRO, TPH-DRO, or Oil and Grease at levels above the laboratory analytical reporting limits. Laboratory results indicated that metals were present in the samples from 0 to 2 feet depth in each soil boring. The laboratory analytical results showed that Mercury, Arsenic, Barium, Cadmium, Chromium, Lead and Selenium were present in the soil samples at low levels (Table 2). The concentration of metals in the samples were compared to the NCDENR non-UST petroleum release guidelines (*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*). Concentrations of Barium, Chromium, and Lead were below the soil to groundwater Maximum Contaminant Concentrations (MSSC) and the Commercial/Industrial Cleanup levels. Concentrations of Mercury, Arsenic, Cadmium, and Silver do not have listed regulatory limits in the NCDENR non-UST petroleum release guidelines so the laboratory analytical results were compared to the NCDENR Inactive Hazardous Sites Branch Health-Based Soil Remediation Goals (<http://www.wastenotnc.org/soiltable.pdf>). Except for Arsenic, metal concentrations in the samples were below the listed Remediation Goals. Arsenic was detected in each of the four samples at values ranging from 7.3 to 12 mg/kg, above the Remediation Goal of 4.4 mg/kg.

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 that there was no evidence of potential USTs in the areas surveyed within the Study Area. The geophysical survey did indicate the presence of buried utility lines and conduits.

Four soil borings (B-62-01 through B-62-04) were advanced to evaluate potential petroleum, oil and grease, and metal contamination within the Study Area, and to document soil conditions. The laboratory analytical results from soil samples taken from these borings showed that TPH-GRO, TPH-DRO, and Oil and Grease were below the laboratory analytical reporting limits in the submitted samples. The laboratory analytical results also showed that Mercury, Barium, Cadmium, Chromium, Lead, and Selenium were present in the soil samples from 0 to 2 ft depth at levels below the listed NCDENR Maximum Soil Contaminant Concentration (MSCC) levels listed in the NCDENR non-UST petroleum release guidelines or the NCDENR Inactive Hazardous Sites Branch Health-Based Soil Remediation Goals. Arsenic was detected in all soils samples at levels exceeding the NCDENR Inactive Hazardous Sites Branch Health-Based Soil Remediation Goals. Geochemical background levels of Arsenic in the Eastern United States show that the mean range of Arsenic in soil is 4.8 mg/kg and the range is 0.1 to 73 mg/kg, suggesting that the concentration of Arsenic encountered on Parcel 62 is naturally occurring and is at background levels (*Element Concentrations in Soils and Other Surficial Material of the Conterminous United States, Hansford Shacklette and Josephine Boerngen, US Geological Survey Professional Paper 1270, 1984*). The NCDENR has also published a document which lists naturally occurring elements in the soils of western North Carolina showing that the mean range of Arsenic is 1.6 to 180 mg/kg, further indicating that the Arsenic values found in the soil samples at the site are within the expected naturally occurring background range (*Concentrations of Metals in Soil, Karen Connell, PG, NCDENR, Groundwater in North Carolina, September, 1999*).

6.0 RECOMMENDATIONS

No remedial measures are recommended for petroleum compounds or metals other than Arsenic. Arsenic levels were higher than some regulatory guidelines, so consideration should be made for controlling dust during construction by keeping the exposed soils moist.

NCDOT may choose to 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. Concentration of the VOC's selected for laboratory analyses were below the laboratory analytical reporting limit, so excavation and treatment of soils for these constituents is not recommended.

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 62
NCDOT U-4020, WATAUGA COUNTY

Sample Depth	Soil Borings			
	B-62-01	B-62-02	B-62-03	B-62-04
Surface	PID (ppm)			
0 - 2 feet	ND	ND	ND	ND
2 - 4 feet	ND	ND	ND	ND
4 - 6 feet	ND	ND	ND	ND
6 - 8 feet	ND	ND	ND	ND
8 - 10 feet	NS	NS	ND	NS
10 - 12 feet	NS	NS	ND	NS

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 62
NCDOT U-4020, WATAUGA COUNTY**

Boring No.	Depth (ft)	Matrix	TPH-GRO	TPH DRO	Oil and Grease	Mercury	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver
B-62-01	0 - 2	Soil	NS	NS	NS	0.014 J	7.3	130	0.25 J	0.016 J	130	BRL	BRL
B-62-01	2 - 4	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-01	4 - 6	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-01	6 - 8	Soil	BRL	BRL	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-02	0 - 2	Soil	NS	NS	BRL	0.012 J	11	150	0.57	BRL	8.6	BRL	BRL
B-62-02	2 - 4	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-02	4 - 6	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-02	6 - 8	Soil	BRL	BRL	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-03	0 - 2	Soil	NS	NS	NS	0.019 J	12	130	0.38	0.035 J	31	BRL	BRL
B-62-03	2 - 4	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-03	4 - 6	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-03	6 - 8	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-03	8 - 10	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-03	10 - 12	Soil	BRL	BRL	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-04	0 - 2	Soil	NS	NS	NS	0.011 J	7.3	480	1.3	BRL	1.6	BRL	BRL
B-62-04	2 - 4	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-04	4 - 6	Soil	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-62-04	6 - 8	Soil	BRL	BRL	NS	NS	NS	NS	NS	NS	NS	NS	NS
Regulatory Concentrations													
TPH Action Level			10	40	250								
MSCC-Soil-to-Water Maximum Contaminant Concentration		Soil	NA	NA	NA	Any amount above MDL	Any amount above MDL	848	Any amount above MDL	27	270	Any amount above MDL	0.23
Commercial/Industrial Soil Cleanup Levels		Soil	NA	NA	NA	Any amount above MDL	Any amount above MDL	28,616	Any amount above MDL	1226	400	Any amount above MDL	2,044

Units in mg/kg for soils

NA- Not Applicable

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

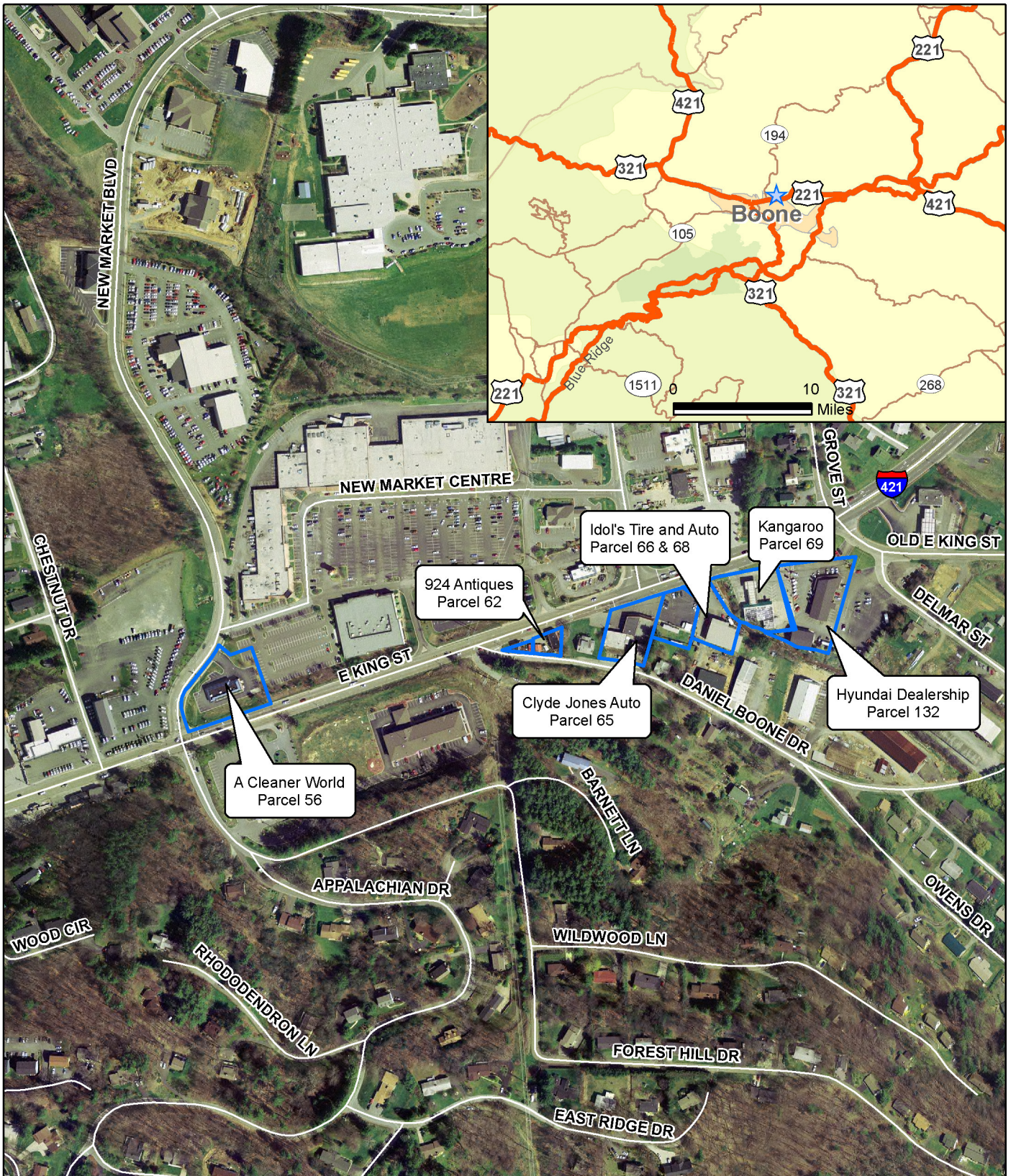
mg/kg = parts per million

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
 Geotechnical Engineering Unit

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>

40 20 0 40
 Feet
 Scale: 1:480



NC Department of Transportation
 Geotechnical Engineering Unit

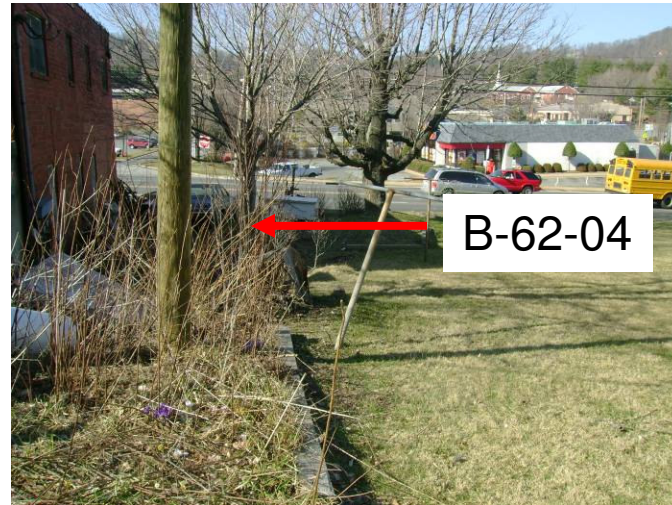
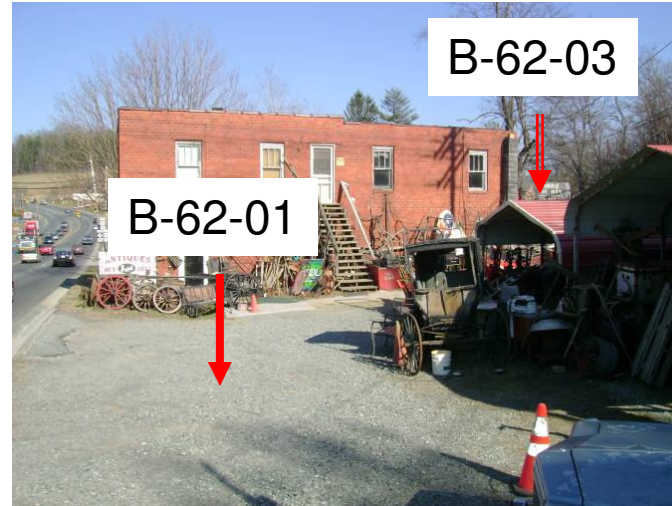
State Project No. U-4020
 Watauga County, North Carolina

SITE MAP
 PARCEL 62

Figure 2

APPENDIX A
Photographs

Parcel 62, 924 Antiques



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 62
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 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 62 (Charlie Wallace Property, 924 Antiques) under our 2007 contract with the NCDOT. Parcel 62 is located at the southeast corner of the intersection of US 421 (King Street) and Daniel Boone Drive, in Boone, NC. 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 two feet apart in orthogonal directions over anomalous EM readings in the accessible areas of the site.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data are shown on Figures 1 and 2. The EM61 early time gate results are plotted on Figure 1. The early time gate data provide the most sensitive detection of metal object targets, regardless of size. Figure 2 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 indicate several anomalies probably caused by known cultural features. Accessible areas with anomalous EM readings were investigated using GPR. The GPR data did not indicate the presence of UST's in the areas surveyed on Parcel 62.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 62 of Project U-4020 in Boone, NC indicates the following:

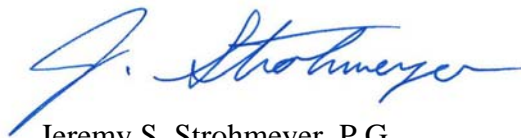
- The geophysical data do not indicate the presence of UST's in the areas surveyed.

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

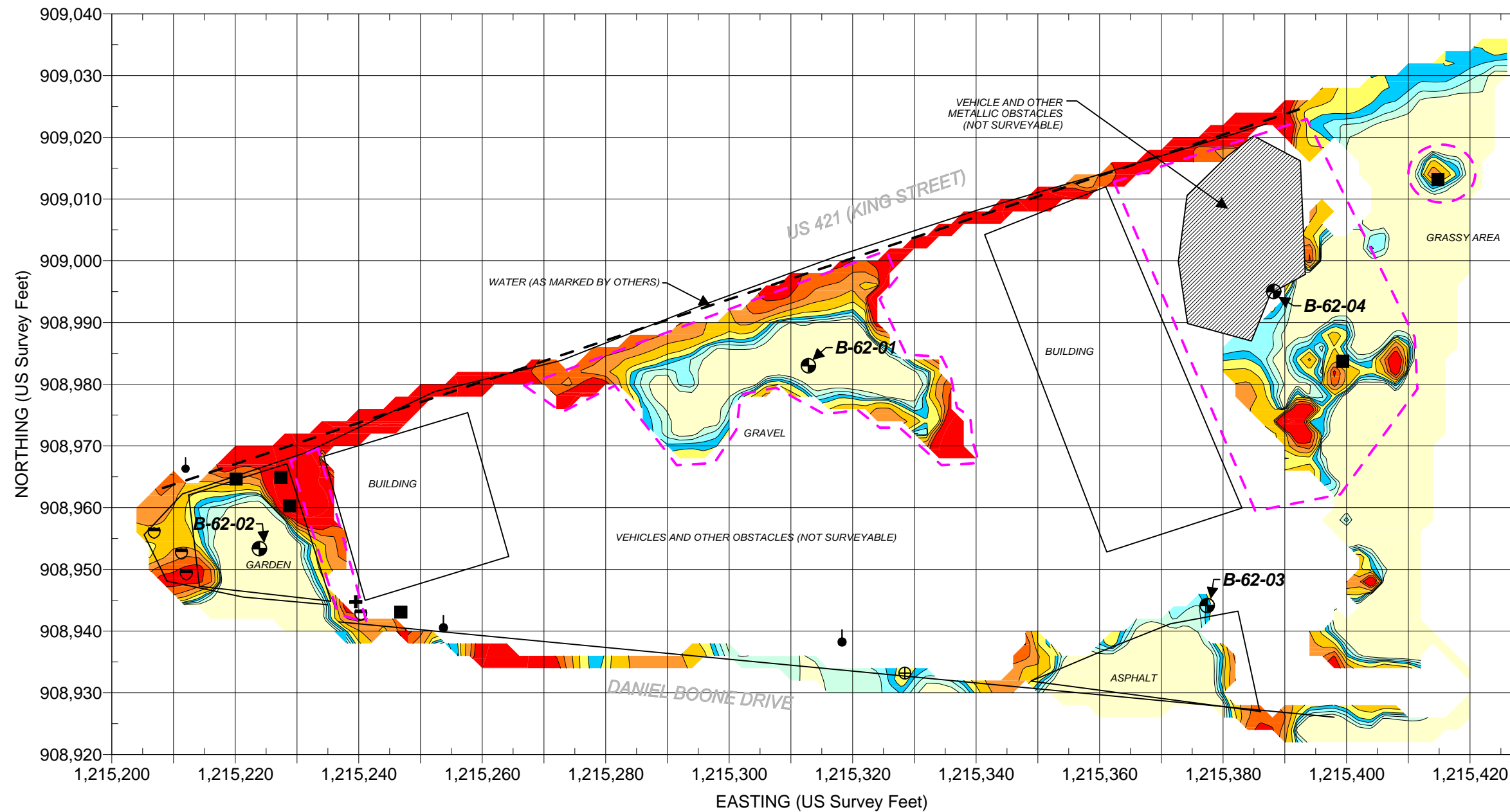


Edward D. Billington, P.G.
Senior Vice President

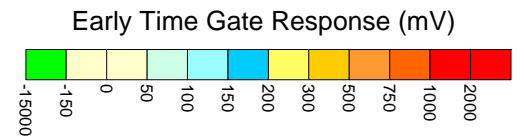
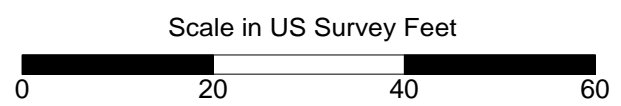
JW/JS/NB

Attachment: Figures (2)

FILE: G:\2007 PROJECTS\07210023 (NCDOT 2007 GEOPHYSICAL SERVICES)\PHASE 07 (U-4020 - WATAUGA COUNTY)\REPORT\NCDOT (GOEPHYSICS & PSA)\PARCEL 62\REPORT ON PARCEL 62.DOC



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.

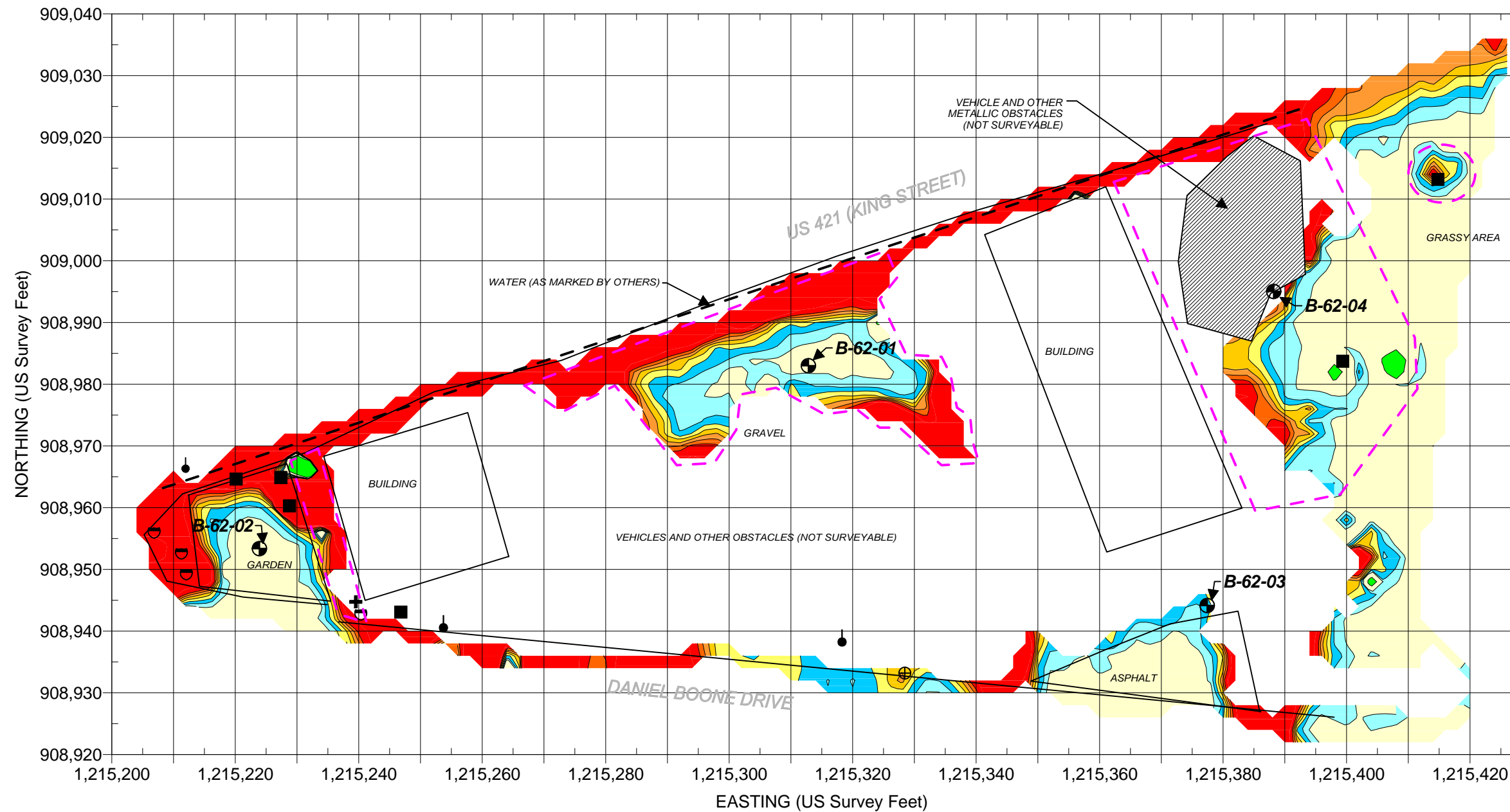


NC Department of Transportation
Geotechnical Engineering Unit

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

**PARCEL 62
EM61 EARLY TIME
GATE RESPONSE**

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 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 62
EM61 DIFFERENTIAL
RESPONSE**

FIGURE 2

APPENDIX C
Soil Boring Logs



**GEO
PROBE
LOG**

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

Geo Probe Number: **B-62-01**
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: RJ Craner
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 3/31/08 **Finished:** 3/31/08
X: 1216091 ft **Y:** 909249 ft
Ground Surface Elevation: 3159± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
Date	Time	Depth	Casing	Caved	
3/31	3:04 PM	Dry	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.2	Crushed stone, Gravelly SILTY SAND, moist, light brown, estimated <5% fine gravel	SM	3158.8			S-1	PID = 0 ppm	
4.0	SILTY SAND, moist, grayish red, estimated 5 - 10% fine gravel, probable RESIDUAL material, rock fragments	SM	3155.0		5		PID = 0 ppm	
6.0	SANDY SILT, moist, yellowish brown, probable RESIDUAL material	ML	3153.0				PID = 0 ppm	
7.0	SILTY SAND, moist, brownish gray, estimated <5% rock fragments, probable RESIDUAL material	SM	3152.0					
8.0			3151.0			S-2	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 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-62-02**
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC

Contractor Foreman: RJ Craner

Schnabel Representative: Ben Bradley

Equipment: Geoprobe 6610DT

Method: Geoprobe,
Macrocore

Hammer Type: NA

Dates Started: 3/31/08 **Finished:** 3/31/08

X: 1216120 ft **Y:** 909256 ft

Ground Surface Elevation: 3168± (ft) **Total Depth:** 8.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
After Drilling	3/31	3:26 PM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.2	Topsoil		3168.0					
	PROBABLE FILL, sampled as silty sand, moist, olive brown, estimated <5% fine to coarse gravel	FILL						
2.0	PROBABLE FILL, sampled as sandy silt, moist, grayish brown, estimated <5% organics	FILL	3166.2			S-1, S-2	PID = 0 ppm	
4.0	SANDY SILT, moist, yellowish brown, probable RESIDUAL material	ML	3164.2		5		PID = 0 ppm	
6.0	SILTY SAND, moist, yellowish brown, probable RESIDUAL material, rock powder	SM	3162.2				PID = 0 ppm	
8.0			3160.2			S-3	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 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-62-03**
Contract Number: 7210023.07
Sheet: 1 of 2

Contractor: Subsurface Environmental Investigations
Statesville, NC

Contractor Foreman: RJ Craner

Schnabel Representative: Ben Bradley

Equipment: Geoprobe 6610DT

Method: Geoprobe,
Macrocore

Hammer Type: NA

Dates Started: 3/31/08 **Finished:** 3/31/08

X: 1216187 ft **Y:** 909274 ft

Ground Surface Elevation: 3162± (ft) **Total Depth:** 12.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
After Drilling	3/31	3:40 PM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DATA		TESTS	REMARKS
					DEPTH	DATA		
0.3	Topsoil		3161.7					
	PROBABLE FILL, sampled as silty sand, dry, dark gray	FILL						
2.0	PROBABLE FILL, sampled as sandy silt, dry, brown	FILL	3160.0			S-1	PID = 0 ppm	
4.0	PROBABLE FILL, sampled as sandy silt, dry, dark brown, estimated 5 - 10% fine to coarse grained sand	FILL	3158.0		5		PID = 0 ppm	
6.0	SILTY SAND, dry, light brown, probable RESIDUAL material	SM	3156.0				PID = 0 ppm	
8.0	SILTY SAND, dry, light brown, estimated 5 - 10% silt, probable RESIDUAL material	SM	3154.0				PID = 0 ppm	
10.0	SILTY SAND, dry, light brown, estimated 5 - 10% silt, estimated <5% rock fragments, probable RESIDUAL material	SM	3152.0		10		PID = 0 ppm	

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

(continued)



**GEO
PROBE
LOG**

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

Geo Probe Number: **B-62-03**
Contract Number: 7210023.07
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		

12.0

3150.0

S-2

PID = 0 ppm

Bottom of Geo Probe at 12.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.



**GEO
PROBE
LOG**

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

Geo Probe Number: **B-62-04**
Contract Number: 7210023.07
Sheet: 1 of 1

Contractor: Subsurface Environmental Investigations
Statesville, NC
Contractor Foreman: RJ Craner
Schnabel Representative: Ben Bradley
Equipment: Geoprobe 6610DT
Method: Geoprobe,
Macrocore
Hammer Type: NA
Dates Started: 3/31/08 **Finished:** 3/31/08
X: 1215974 ft **Y:** 909204 ft
Ground Surface Elevation: 3156± (ft) **Total Depth:** 8.0 ft

Groundwater Observations					
Date	Time	Depth	Casing	Caved	
3/31	4:01 PM	Dry	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.6	Topsoil		3154.9					
2.0	SANDY SILT, moist, dark gray, estimated <5% organics	ML	3153.5			S-1	PID = 0 ppm	
4.0	SILTY SAND, dry, light brown, estimated 5 - 10% silt, estimated <5% rock fragments, probable RESIDUAL material	SM	3151.5				PID = 0 ppm	
6.0	SANDY SILT, dry, brown, probable RESIDUAL material	ML	3149.5		5		PID = 0 ppm	
8.0	SANDY SILT, moist, dark gray, probable RESIDUAL material	ML	3147.5			S-2	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

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-62-01	1216091	909249
B-62-02	1216120	909256
B-62-03	1216187	909274
B-62-04	1215974	909204

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

APPENDIX E
Prism Lab Report

Case Narrative



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 62
Prism COC Group No: G0408091
Collection Date(s): 03/31/08
Lab Submittal Date(s): 04/03/08
Client Project Name Or No: 924 Antiques, 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 12 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

No Anomalies Reported

Metals Analysis

Analysis Note for Q31529 MS Barium: MS and MSD: Sample concentration too high for recovery evaluation.

Analysis Note for Q31529 MS Lead: MS/MSD: Sample concentration too high for recovery evaluation.

Analysis Note for Q31529 MS Selenium: MS/MSD recovery outside of the control limits. Matrix interference is suspected. Post-digestion spike recovery (75%) is within the acceptance limits (75-125%).

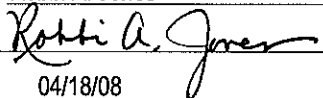
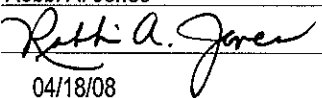
Analysis Note for Q31529 MSD Arsenic: MSD recovery outside the control limits.

Analysis Note for Q31529 MSD Cadmium: MSD recovery outside the control limits.

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: 924 Antiques, Boone, NC Client Sample ID: B-62-01
 Project ID: NCDOT Parcel 62 Prism Sample ID: 210407
 Project No.: WBS #7210023.07 COC Group: G0408091
 Sample Matrix: Soil Time Collected: 03/31/08 15:10
 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	88.7	%			1	SM2540 G	04/04/08 13:30	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	7.8	1.3	1	8015B	04/09/08 1:08	jbvogel	Q31590
-----------------------------	-----	-------	-----	-----	---	-------	---------------	---------	--------

Sample Preparation: 25.27 g / 1 mL 3545 04/07/08 16:00 Wconder P21277

Surrogate	% Recovery	Control Limits
o-Terphenyl	81	49 - 124

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	1.1	0.023	1	8015B	04/04/08 17:50	wbradley	Q31508
-------------------------------	-----	-------	-----	-------	---	-------	----------------	----------	--------

Surrogate	% Recovery	Control Limits
aaa-TFT	77	55 - 129

Mercury by CVAA

Mercury	0.014 J	mg/kg	0.023	0.0038	1	7471A	04/04/08 12:48	jhoppel	Q31501
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Sample Preparation: 0.6 g / 50 mL 7471A 04/04/08 11:00 jhoppel P21250

Metals by ICP

Arsenic	7.3	mg/kg	0.55	0.073	1	6010B	04/07/08 22:41	mcampbell	Q31529
Barium	130	mg/kg	0.55	0.048	1	6010B	04/07/08 22:41	mcampbell	Q31529
Cadmium	0.25 J	mg/kg	0.28	0.0066	1	6010B	04/07/08 22:41	mcampbell	Q31529
Chromium	0.016 J	mg/kg	0.28	0.015	1	6010B	04/07/08 22:41	mcampbell	Q31529
Lead	130	mg/kg	0.28	0.018	1	6010B	04/07/08 22:41	mcampbell	Q31529
Selenium	BRL	mg/kg	0.55	0.11	1	6010B	04/07/08 22:41	mcampbell	Q31529
Silver	BRL	mg/kg	0.28	0.018	1	6010B	04/07/08 22:41	mcampbell	Q31529

Sample Preparation: 2.04 g / 50 mL 3050B 04/04/08 7:40 mbarber P21247

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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: 924 Antiques, Boone, NC Client Sample ID: B-62-01
Project ID: NCDOT Parcel 62 Prism Sample ID: 210407
Project No.: WBS #7210023.07 COC Group: G0408091
Sample Matrix: Soil Time Collected: 03/31/08 15:10
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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Sample Comment(s):

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

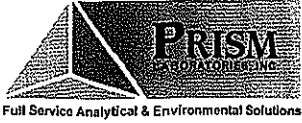
BRL = Below Reporting Limit

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: 924 Antiques, Boone, NC Client Sample ID: B-62-02
 Project ID: NCDOT Parcel 62 Prism Sample ID: 210408
 Project No.: WBS #7210023.07 COC Group: G0408091
 Sample Matrix: Soil Time Collected: 03/31/08 15:31
 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	89.2	%			1	SM2540 G	04/04/08 13:30	mbarber	
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Oil and Grease by Soxhlet Extraction

Oil and Grease	BRL	mg/kg	39	39	1	9071A	04/17/08 10:00	smanivanh	Q31844
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	7.8	1.3	1	8015B	04/09/08 1:44	jvogel	Q31590
-----------------------------	-----	-------	-----	-----	---	-------	---------------	--------	--------

Sample Preparation: 25.22 g / 1 mL 3545 04/07/08 16:00 Wconder P21277

Surrogate	% Recovery	Control Limits
o-Terphenyl	84	49 - 124

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	1.1	0.023	1	8015B	04/04/08 18:21	wbradley	Q31508
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Surrogate	% Recovery	Control Limits
aaa-TFT	76	55 - 129

Mercury by CVAA

Mercury	0.012 J	mg/kg	0.022	0.0038	1	7471A	04/04/08 13:11	jhoppel	Q31501
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Sample Preparation: 0.6 g / 50 mL 7471A 04/04/08 11:00 jhoppel P21250

Metals by ICP

Arsenic	11	mg/kg	0.56	0.074	1	6010B	04/07/08 23:05	mcampbell	Q31529
Barium	150	mg/kg	0.56	0.048	1	6010B	04/07/08 23:05	mcampbell	Q31529
Cadmium	0.57	mg/kg	0.28	0.0068	1	6010B	04/07/08 23:05	mcampbell	Q31529
Chromium	BRL	mg/kg	0.28	0.016	1	6010B	04/07/08 23:05	mcampbell	Q31529
Lead	8.6	mg/kg	0.28	0.018	1	6010B	04/07/08 23:05	mcampbell	Q31529
Selenium	BRL	mg/kg	0.56	0.11	1	6010B	04/07/08 23:05	mcampbell	Q31529
Silver	BRL	mg/kg	0.28	0.018	1	6010B	04/07/08 23:05	mcampbell	Q31529

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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: 924 Antiques, Boone, NC Client Sample ID: B-62-02
 Project ID: NCDOT Parcel 62 Prism Sample ID: 210408
 Project No.: WBS #7210023.07 COC Group: G0408091
 Sample Matrix: Soil Time Collected: 03/31/08 15:31
 Time Submitted: 04/03/08 8:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Preparation:				1.99 g	/ 50 mL	3050B	04/04/08 7:40	mbarber	P21247

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
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 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: 924 Antiques, Boone, NC Client Sample ID: B-62-03
 Project ID: NCDOT Parcel 62 Prism Sample ID: 210409
 Project No.: WBS #7210023.07 COC Group: G0408091
 Sample Matrix: Soil Time Collected: 03/31/08 15:45
 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	90.1	%			1	SM2540 G	04/04/08 13:30	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	7.7	1.2	1	8015B	04/09/08 2:20	jbvogel	Q31590
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Sample Preparation: 25.12 g / 1 mL 3545 04/07/08 16:00 Wconder P21277

Surrogate	% Recovery	Control Limits
o-Terphenyl	78	49 - 124

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	1.1	0.023	1	8015B	04/04/08 18:53	wbradley	Q31508
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Surrogate	% Recovery	Control Limits
aaa-TFT	76	55 - 129

Mercury by CVAA

Mercury	0.019 J	mg/kg	0.022	0.0038	1	7471A	04/04/08 13:15	jhoppel	Q31501
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Sample Preparation: 0.6 g / 50 mL 7471A 04/04/08 11:00 jhoppel P21250

Metals by ICP

Arsenic	12	mg/kg	0.54	0.071	1	6010B	04/07/08 23:13	mcampbell	Q31529
Barium	130	mg/kg	0.54	0.047	1	6010B	04/07/08 23:13	mcampbell	Q31529
Cadmium	0.38	mg/kg	0.27	0.0065	1	6010B	04/07/08 23:13	mcampbell	Q31529
Chromium	0.035 J	mg/kg	0.27	0.015	1	6010B	04/07/08 23:13	mcampbell	Q31529
Lead	31	mg/kg	0.27	0.017	1	6010B	04/07/08 23:13	mcampbell	Q31529
Selenium	BRL	mg/kg	0.54	0.11	1	6010B	04/07/08 23:13	mcampbell	Q31529
Silver	BRL	mg/kg	0.27	0.017	1	6010B	04/07/08 23:13	mcampbell	Q31529

Sample Preparation: 2.05 g / 50 mL 3050B 04/04/08 7:40 mbarber P21247

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 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: 924 Antiques, Boone, NC Client Sample ID: B-62-03
 Project ID: NCDOT Parcel 62 Prism Sample ID: 210409
 Project No.: WBS #7210023.07 COC Group: G0408091
 Sample Matrix: Soil Time Collected: 03/31/08 15:45
 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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Sample Comment(s):

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

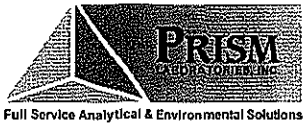
BRL = Below Reporting Limit

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: 924 Antiques, Boone, NC Client Sample ID: B-62-04
 Project ID: NCDOT Parcel 62 Prism Sample ID: 210410
 Project No.: WBS #7210023.07 COC Group: G0408091
 Sample Matrix: Soil Time Collected: 03/31/08 16:10
 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	75.9	%			1	SM2540 G	04/04/08 13:30	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	BRL	mg/kg	9.1	1.5	1	8015B	04/09/08 2:56	jvogel	Q31590
Sample Preparation:			25.33 g	/	1 mL	3545	04/07/08 16:00	Wconder	P21277
					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	0.027	1	8015B	04/04/08 19:25	wbradley	Q31508
					Surrogate	% Recovery	Control Limits		
					aaa-TFT	79	55 - 129		
Mercury by CVAA									
Mercury	0.011 J	mg/kg	0.026	0.0045	1	7471A	04/04/08 13:20	jhoppel	Q31501
Sample Preparation:			0.6 g	/	50 mL	7471A	04/04/08 11:00	jhoppel	P21250
Metals by ICP									
Arsenic	7.3	mg/kg	0.65	0.086	1	6010B	04/07/08 23:21	mcampbell	Q31529
Barium	480	mg/kg	6.5	0.56	10	6010B	04/09/08 1:12	mcampbell	Q31529
Cadmium	1.3	mg/kg	0.32	0.0078	1	6010B	04/07/08 23:21	mcampbell	Q31529
Chromium	BRL	mg/kg	0.32	0.018	1	6010B	04/07/08 23:21	mcampbell	Q31529
Lead	1.6	mg/kg	0.32	0.021	1	6010B	04/07/08 23:21	mcampbell	Q31529
Selenium	BRL	mg/kg	0.65	0.13	1	6010B	04/07/08 23:21	mcampbell	Q31529
Silver	BRL	mg/kg	0.32	0.021	1	6010B	04/07/08 23:21	mcampbell	Q31529
Sample Preparation:			2.03 g	/	50 mL	3050B	04/04/08 7:40	mbarber	P21247

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NC Certification No. 402
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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: 924 Antiques, Boone, NC Client Sample ID: B-62-04
Project ID: NCDOT Parcel 62 Prism Sample ID: 210410
Project No.: WBS #7210023.07 COC Group: G0408091
Sample Matrix: Soil Time Collected: 03/31/08 16:10
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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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: 924 Antiques, Boone, NC
 Project ID: NCDOT Parcel 62 & 64
 Project No.: WBS #7210023.07

COC Group Number: G0408091
 Date/Time Submitted: 4/3/2008 8:30

Mercury by CVAA, method 7471A

Method Blank							QC Batch ID		
	Result	RL	Control Limit	Units					
Mercury	0.00937	0.02	<0.01	mg/kg			Q31501		
Laboratory Control Sample							QC Batch ID		
	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
Mercury	0.37387	0.417		mg/kg	90	80-120	Q31501		
Matrix Spike							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
210407 Mercury	0.34519	0.3897		mg/kg	85	80-120	Q31501		
Matrix Spike Duplicate							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
210407 Mercury	0.38355	0.3909		mg/kg	95	80-120	11	0 - 20	Q31501

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 %	QC Batch ID
210407 Gasoline Range Organics (GRO)	1.862	2		mg/kg	93	37-126	0	0 - 34	Q31508



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: 924 Antiques, Boone, NC
 Project ID: NCDOT Parcel 62 & 64
 Project No.: WBS #7210023.07

COC Group Number: G0408091
 Date/Time Submitted: 4/3/2008 8:30

Metals by ICP, method 6010B

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Arsenic	-0.0008	0.5	<0.25	mg/kg	Q31529
Barium	0.1271	0.5	<0.25	mg/kg	Q31529
Cadmium	0.0007	0.25	<0.125	mg/kg	Q31529
Chromium	0.0757	0.25	<0.125	mg/kg	Q31529
Lead	0.0676	0.25	<0.125	mg/kg	Q31529
Selenium	0.0622	0.5	<0.25	mg/kg	Q31529
Silver	-0.0026	0.25	<0.125	mg/kg	Q31529

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	QC Batch ID
Arsenic	21.5628	25	mg/kg	86	80-120	Q31529
Barium	22.8534	25	mg/kg	91	80-120	Q31529
Cadmium	21.4143	25	mg/kg	86	80-120	Q31529
Chromium	22.6777	25	mg/kg	91	80-120	Q31529
Lead	21.9755	25	mg/kg	88	80-120	Q31529
Selenium	20.2788	25	mg/kg	81	80-120	Q31529
Silver	22.3582	25	mg/kg	89	80-120	Q31529

Matrix Spike

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	QC Batch ID
210407 Arsenic	25.8769	25	mg/kg	78	75-125	Q31529
Barium	170	25	mg/kg	230 #	75-125	Q31529
Cadmium	19.3251	25	mg/kg	76	75-125	Q31529
Chromium	19.6174	25	mg/kg	78	75-125	Q31529
Lead	155	25	mg/kg	157 #	75-125	Q31529
Selenium	13.4277	25	mg/kg	69 #	75-125	Q31529
Silver	20.0225	25	mg/kg	86	75-125	Q31529

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
210407 Arsenic	23.317	24.390	mg/kg	69 #	75-125	10	0 - 20	Q31529
Barium	127.593	24.390	mg/kg	61 #	75-125	21 #	0 - 20	Q31529
Cadmium	17.9139	24.390	mg/kg	73 #	75-125	8	0 - 20	Q31529
Chromium	18.5619	24.390	mg/kg	76	75-125	6	0 - 20	Q31529
Lead	150	25	mg/kg	137 #	75-125	3	0 - 20	Q31529
Selenium	12.3742	24.390	mg/kg	67 #	75-125	8	0 - 20	Q31529
Silver	18.8354	24.390	mg/kg	83	75-125	6	0 - 20	Q31529

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449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543

Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409



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: 924 Antiques, Boone, NC
 Project ID: NCDOT Parcel 62 & 64
 Project No.: WBS #7210023.07

COC Group Number: G0408091
 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			Q31590		
Laboratory Control Sample							QC Batch ID		
	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
Diesel Range Organics (DRO)	65.96	80		mg/kg	82	55-109	Q31590		
Matrix Spike							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %			
210361 Diesel Range Organics (DRO)	63.3	80		mg/kg	79	50-117	Q31590		
Matrix Spike Duplicate							QC Batch ID		
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	
210361 Diesel Range Organics (DRO)	60.6	80		mg/kg	76	50-117	4	0 - 24	Q31590

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 %	
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: Schnabel
Report To/Contact Name: Ben Bradley
Reporting Address: 11-A Oak Branch Dr.
Greensboro, NC 27407

Phone: 336-274-9456 Fax (No):
Email (Yes) (No) Email Address: Bradley@Schnabel.com
EDD Type: PDF Excel Other
Site Location Name: 924 Antiques
Site Location Physical Address: 924 E. King St. Boone, NC

CHAIN OF CUSTODY RECORD

PAGE OF QUOTE # TO ENSURE PROPER BILLING: 7210023.07
Project Name: UST Project: (Yes) (No)
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:

LAB USE ONLY
Samples INTACT upon arrival? YES NO N/A
Received ON WET ICE? Temp 3-7
PROPER PRESERVATIVES Indicated?
Received WITHIN HOLDING TIMES?
CUSTODY SEALS INTACT?
VOLATILES rec'd W/OUT HEADSPACE?
PROPER CONTAINERS used?

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 Rush Work Must Be 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)

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 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-62-01	3-31-08	1510	Soil	6	3		X		210457
B-62-02	3-31-08	1531	Soil	6	4		X		210453
B-62-03	3-31-08	1545	Soil	6	3		X		210459
B-62-04	3-31-04	1610	Soil	6	3		X		210410
B-62-04 02 per Ben Bradley									

PRESS DOWN FIRMLY - 3 COPIES

PRISM USE ONLY
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

Additional Comments:
Date 4/2/08 Milliday/Hours 1335
Time 4:13 PM Date 4/2/08 Date 4/2/08 Time 0830
COC Group No. 60403061
Received By (Signature) Ben Bradley
Received By (Signature) Ben Bradley
Received For Prism Laboratories By: Ben Bradley
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 Other

NPDES: NC SC NC SC NC SC NC SC
UST: NC SC NC SC NC SC NC SC
GROUNDWATER: NC SC NC SC NC SC
DRINKING WATER: NC SC NC SC
SOLID WASTE: NC SC NC SC
RCRA: NC SC NC SC
GERCLA: 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)

SEE REVERSE FOR TERMS & CONDITIONS
ORIGINAL