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**UST Closure Report  
R-Way II, Property  
6414 US Highway 158  
Guilford County, North Carolina  
Facility ID: 0-009763**

Prepared for:

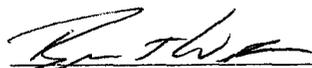
**NCDENR DWM UST Section  
1637 Mail Service Center  
Raleigh, North Carolina 27699**

Prepared by:

**Solutions-IES, Inc.  
3722 Benson Drive  
Raleigh, North Carolina 27609**

**Solutions - IES Project No. 2561.05A3.DENR**

**July 18, 2005**



Brian J. Wright, P.G.  
Staff Geologist



Brian Rebar  
Project Manager

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## 1.0 INTRODUCTION

Solutions-IES, Inc. (Solutions-IES) was retained by the UST Section of the North Carolina Department of Environment & Natural Resources (NCDENR) to oversee the closure of two abandoned 4,000-gallon underground storage tanks (USTs) at the R-Way II facility, located at 6414 US Highway 158 in Summerfield, Guilford County, North Carolina (Figure 1). The property is located on the north side of US Highway 158 approximately one mile east of the intersection of US Highway 158 and US Highway 220. This report documents the UST closure activities and has been prepared following the required NCDENR GW/UST-12 format.

## 2.0 GENERAL INFORMATION

### 2.1 FACILITY INFORMATION

The USTs were located at 6414 US Highway 158 in Summerfield, Guilford County, NC. According to the NCDENR UST Database, the facility ID number is 0-009763, the tanks were installed on October 5, 1971, and the stated UST owner/operator is BBC Ventures, Inc. According to the Guilford County Geographic Information System (GIS), Barham Enterprises, Inc. currently owns the property. According to the store operations manager, the former tanks have not been in service for many years; however, a separate UST system currently operates at the site. The State of North Carolina has assumed responsibility for the proper closure of the unused tanks.

### 2.2 CONTACTS

The following list identifies the key contacts involved with closure of the two USTs:

1. Primary Contact Person: Mr. Bruce Ramaekers  
North Carolina DENR  
DWM, UST Section  
1637 Mail Service Center  
Raleigh, NC 27699  
(919) 733-1325
2. Primary Consultant: Solutions-IES, Inc.  
3722 Benson Drive  
Raleigh, NC 27609  
(919) 873-1060

3. Closure Subcontractor: Soil Solutions, Inc.  
1703 Vargrave Street  
Winston Salem, NC 27107  
(336) 725-5844
4. Analytical Laboratory: Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078  
(704) 875-9092

### 2.3 UST INFORMATION

Table 1 summarizes the information known about the two USTs that were removed from the R-Way II facility.

### 2.4 SITE CHARACTERISTICS

#### 2.4.1 Past Release Information

There are no known releases associated with the subject site.

#### 2.4.2 Facility Status

The site currently contains an operational gasoline service station / convenience store and two residences. The main building contains a residence and the convenience store. A mobile home residence occupies the site to the west of the store / house. An operating UST system including two USTs, associated product piping, dispenser islands with two dispensers, and a canopy is located on the south side of the site in front of the store. The south side of the site also consists of asphalt and concrete parking areas, and there are grassy areas west, north, and east of the main site building. The property was reportedly a gasoline station since at least the late 1950's.

Figure 2 shows the site features and locations of the USTs. Both USTs (UST-1 and UST-2) were located approximately 40 feet west of the store. When these tanks were taken out of service, the product lines extending from this tank pit were cut and capped near the dispenser pumps. Vent pipes extending from these tanks were previously removed.

### 2.4.3 Surrounding Property

The surrounding property is rural and is summarized as follows:

- North – grassy area, beyond which is a forested area
- South – US Highway 158, and residential houses
- East – residential properties
- West – residential properties

Figure 1 shows the site location with respect to nearby highways and topographic landmarks. The figure was developed from the 1971 USGS topographic map for Ellisboro, NC and the 1969 USGS topographic map for Summerfield, NC with 1994 photo-revisions. The land surface topography at the site slopes downward towards the east.

### 2.4.4 Site Geology/Hydrogeology

According to the 1985 Geologic Map of North Carolina, the site is located within igneous metamorphic rocks of the Milton Belt that are described on the map as (CZbg) biotite gneiss and schist. Soil cover in the area is formed from residual weathering of the underlying bedrock. The soil cover varies in thickness depending on the degree of weathering of the bedrock and relative topographic position. The surficial soils are predominately reddish brown to brown clays and silts, which transition with depth to more silty and sandy sub-soils. The water table occurs either within the soil overburden or bedrock depending on local conditions. Topographic highs typically act as local recharge areas for groundwater, and groundwater flow is generally from higher elevations to lower elevations, eventually discharging to the closest stream depression. Based on site topography and nearby drainage features, groundwater in the vicinity of the site would be expected to flow towards the east to the drainage tributaries of Troublesome Creek.

### 2.4.5 Receptor Survey Results

A detailed receptor survey is not typically performed until after a release has been documented as part of a Limited Site Assessment (LSA). However, Solutions-IES conducted a cursory review of the general area surrounding the site during the tank closure activities. Water supply wells were identified on the subject property and adjacent properties. The closest well is the on-site well, which is located approximately 100 feet north of the former tank pit. The well appears to be operational and serving the residential portion of the store/house. Underground openings or structures beneath the buildings that would be available for the possible accumulation of hydrocarbon vapors were not identified. The closest surface water body is an intermittent small pond that feeds a tributary of Troublesome Creek located

approximately 1,600 feet to the northwest.

### **3.0 CLOSURE PROCEDURES**

#### **3.1 PREPARATION FOR CLOSURE**

Notice of UST closure activities was provided to the NCDENR, Winston-Salem Regional Office on June 9, 2005 by submitting a UST-3, Notice of Intent: UST Permanent Closure of Change-in-Service form (Appendix A) by facsimile. Soil Solutions, Inc. (Soil Solutions) notified the Guilford County Fire Department prior to the start of work and obtained the necessary permits. Solutions-IES contacted the NC One Call center to locate subsurface utilities prior to mobilization to the site for the UST closure activities. Also, KCI of Raleigh, NC was contracted to mark utilities in the UST area. Solutions-IES met with the subcontractor, Soil Solutions, on June 20, 2005 to begin work. Photographs taken during the closure activities are presented in Appendix B.

In order to allow removal of the tanks, a vacuum truck was used to remove any residual liquids contained in the tanks and the tanks were then uncovered using a track hoe. Both USTs were uncovered at a depth of approximately 4 feet below land surface (ft bls). The overburden material did not contain signs of petroleum impact (i.e., no odors or elevated FID readings) and was stockpiled on site for later use as backfill.

After removing the residual liquids, the USTs were purged of explosive vapors by adding dry ice to the tanks. The tanks were monitored for explosive vapors using an explosimeter that measures the lower explosive limit (LEL) and percentage of oxygen. The following readings were measured before the tanks were removed from the former tank pit:

- UST-1 – 20% LEL, 5.7% oxygen
- UST-2 – 19% LEL, 4.7% oxygen

A member of the Guilford County Fire Marshal's Office (Mr. Garrett Stonesifer) was on site to oversee the tank removals; and, at these concentrations, he indicated that the tanks could be safely removed.

#### **3.2 RESIDUAL MATERIAL REMOVED**

Approximately 34 gallons of residual liquids consisting of a mixture of gasoline and water were removed from the USTs by Soil Solutions using a vacuum truck. Samples of the liquid in the vacuum truck were not

collected or analyzed. Soil Solutions transported the liquids to the HOH, Inc. facility located in Winston-Salem, NC for disposal. A copy of the manifest is provided in Appendix C.

### 3.3 EXCAVATION

The tanks were removed using the track-hoe bucket with a chain attached to eyelets on the USTs. Upon removal from the ground, the USTs were visually inspected for exterior damage and signs of leakage and the soil was checked for signs of petroleum impact. Soil samples were collected as described in Section 4.0. Figure 2 shows the tank locations and site layout.

UST-1 and UST-2 were oriented side by side in an east/west direction in the tank pit located approximately 40 feet from the west side of the convenience store. These tanks were excavated on June 21, 2005. The tanks were covered with approximately 4 feet of soil and were both approximately 5.5 feet in diameter and 24 feet long. After removing the tanks, the resulting excavation was approximately 9.5 feet deep. Visual inspection of the tanks upon their removal revealed that they were both in generally good condition, free of holes, and both showed only minor corrosion.

Product lines extending from the tank pit were cut and capped at the limits of the excavation. These lines did not appear to contain residual product. The store operations manager indicated that the lines had been cut and capped near the dispenser island and that the work had been done during the installation of the current UST system. Vent pipes were not identified during the excavation.

Petroleum-impacted soil was not identified upon removal of the tanks from the excavation (i.e., no odors and/or low FID readings). The excavations were backfilled on June 21, 2005 with the overburden soil that originally covered the tanks and additional clean soil provided by Soil Solutions. The backfill was compacted in 12-inch lifts with the track-hoe bucket and leveled to a depth of 8-inches bls. Crushed stone was placed within the top 8-inches of the excavation and leveled to match the existing asphalt grade. The property owner plans to have this area repaved with asphalt.

### 3.4 LOCATION AND METHOD OF TANK DISPOSAL

Upon removal from the ground, the two USTs were loaded onto a trailer and were transported to Soil Solutions' facility located in Winston-Salem, NC for cleaning. The tanks were then transported to Atlantic Scrap and Processing in Winston-Salem, NC for destruction and recycling. The Tank Disposal Certificate is

in Appendix C.

## **4.0 SITE INVESTIGATION**

### **4.1 FIELD SCREENING OF SOILS**

Soils were screened in the field using a Foxboro 128 OVA flame ionization detector (FID). The FID was calibrated at the start of each workday using 100-ppm methane calibration gas, and the calibration of the instrument was re-checked periodically over the course of the day. Discrete soil samples collected from the excavation were placed in resealable plastic bags. The bags were sealed, and the headspace within the bag was allowed to equilibrate for approximately 20 minutes out of direct sunlight. The probe of the FID was then inserted into the headspace of the bag and the concentration of volatile organic compounds (VOCs) present in the headspace was read in parts per million (ppm) on the FID display. Sample locations and FID readings were recorded in the field logbook. The FID readings are summarized in Table 2. The recorded concentrations were not indicative of a release from the tanks.

### **4.2 SOIL SAMPLING LOCATIONS AND SAMPLING PROCEDURES**

A total of six closure samples were collected upon removal of the two tanks. Based on the size of the tanks, three closure samples were collected beneath each tank, UST-1 and UST-2. All of the closure samples were collected within 1 to 2 feet of the tank bottoms.

The closure samples were collected from soil in the excavator bucket. The samples were collected in laboratory-supplied glassware and were placed on ice in an insulated cooler for delivery to Pace Analytical Services, Inc. (Pace) in Huntersville, NC. The closure samples were analyzed for gasoline and diesel range total petroleum hydrocarbons (TPH) by EPA Methods 5030/8015 Modified and 3545/8015 Modified, respectively.

### **4.3 SOIL SAMPLING RESULTS**

The soil sampling results for the TPH analyses are summarized in Table 2, and copies of the analytical laboratory reports are provided in Appendix D. TPH was not detected above the method detection limits for the collected samples submitted to the laboratory.

#### 4.4 GROUNDWATER OR SURFACE WATER SAMPLING ACTIVITIES

Groundwater was not encountered in the excavation. Groundwater samples were not collected.

#### 4.5 QUALITY CONTROL MEASURES

Soil samples for laboratory analysis were collected using NCDENR-approved methods. The samples were transferred to laboratory-supplied containers immediately upon collection. The containers were labeled with the sample location information, including date, time of collection, and requested analyses. The filled containers were placed on ice in an insulated cooler pending delivery to the laboratory. The samples were collected on June 21, 2005, and were delivered to the laboratory under chain-of-custody procedures on June 23, 2005. Pace is approved by North Carolina (Laboratory Certification Number 402) for the analyses required for tank closure. Copies of their internal QC reports are included with the analytical results. The NCDENR authorized scope of work did not specify collection of additional field QC samples (*e.g.*, duplicates, trip blanks, etc.) for tank closure activities.

#### 5.0 CONCLUSIONS

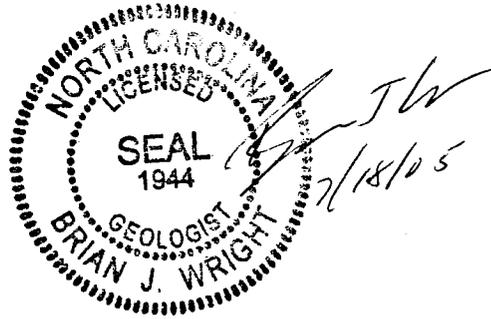
Two underground storage tanks were permanently closed on June 21, 2005. The UST closures were performed on behalf of NCDENR UST Section at the property located at 6414 US Highway 158 in Summerfield, Guilford County, North Carolina. Based upon field observations, the tanks appeared to be in generally good condition (free of holes and only minor corrosion). There was no visual, olfactory, or field screening evidence of a release, and closure samples collected beneath UST-1 and UST-2 did not contain detectable concentrations of TPH.

For regulated USTs, NCDENR requires submittal of a Site Investigation Report for Permanent Closure or Change-in Service of UST (form GW/UST-2). A copy of this form, which Solutions-IES has signed as an authorized agent of the NCDENR UST Section, is contained in Appendix A.

## 6.0 SIGNATURE AND SEAL OF PROFESSIONAL ENGINEER OR LICENSED GEOLOGIST

This report was prepared under my direction.

Brian J. Wright, P.G.  
Staff Geologist



**TABLES**

**TABLE 1**  
**SUMMARY OF UNDERGROUND STORAGE TANK INFORMATION**  
**R-Way II Facility**  
**6414 US Highway 158, Guilford County, North Carolina**  
**Solutions-IES Project No. 2561.05A3.DENR**

Tank			Installation Date	Calculated Size in Gallons	Suspected Contents
Designation	Construction	Dimensions			
UST-1	Steel	5.5 ft x 24 ft	10/5/1971	4,265	Gasoline / Diesel
UST-2	Steel	5.5 ft x 24 ft	10/5/1971	4,265	Gasoline / Diesel

**TABLE 2**  
**SUMMARY OF FIELD SCREENING AND LABORATORY TPH RESULTS**  
**R-Way II Facility**  
**6414 US Highway 158, Guilford County, North Carolina**  
**Solutions-IES Project No. 2561.05A3.DENR**

Sample Information				Laboratory Analyses		Field Screening
Sample Number	Sample Date	Location	Depth (ft bls)	Gasoline Range TPH (mg/kg)	Diesel Range TPH (mg/kg)	FID (ppm)
T1-CL1	6/21/05	East End of Tank 1	9.5	<4.7	<6.1	0.0
T1-CL2	6/21/05	Center of Tank 1	9.5	<5.6	<5.9	0.0
T1-CL3	6/21/05	West End of Tank 1	9.5	<5.4	<5.9	0.0
T2-CL1	6/21/05	East End of Tank 2	9.5	<5.0	<5.8	0.0
T2-CL2	6/21/05	Center of Tank 2	9.5	<6.3	<6.3	0.0
T2-CL3	6/21/05	West End of Tank 2	9.5	<5.8	<5.6	0.0

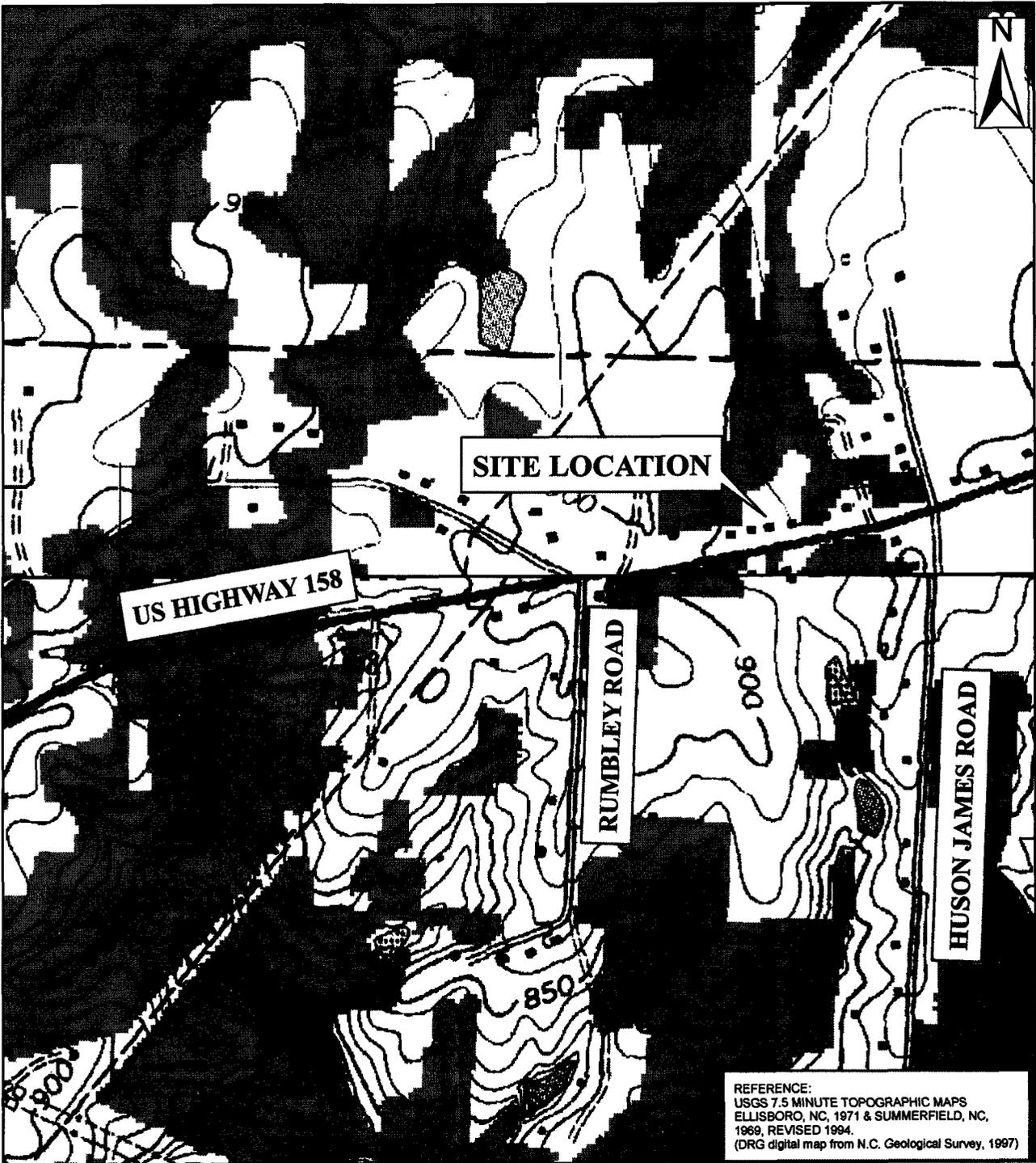
TPH = Total Petroleum Hydrocarbons (Method 5030/8015MOD - Gasoline Range Hydrocarbons,  
 Method 3545/8015MOD - Diesel Range Hydrocarbons)

ft bls = feet below land surface

ppm = parts per million

mg/kg = milligram per kilogram

**FIGURES**



1:10,000  
 500 250 0 500 1,000 1,500  
 Feet

**SITE LOCATION MAP**  
**R-WAY II PROPERTY**  
**6414 US HIGHWAY 158**  
**GUILFORD COUNTY, NORTH CAROLINA**

**Solutions-IES**  
**Industrial & Environmental Services**

3722 Benson Drive, Raleigh, NC 27609 Phone (919) 873-1060, Fax (919) 873-1074	
Created by: KBB	Project: 2561.05A3.DENR
Checked by: BR	Date: 07/12/05
File: FIG1.mxd	
Software: ESRI ArcMap 9.0	<b>FIGURE</b> 1

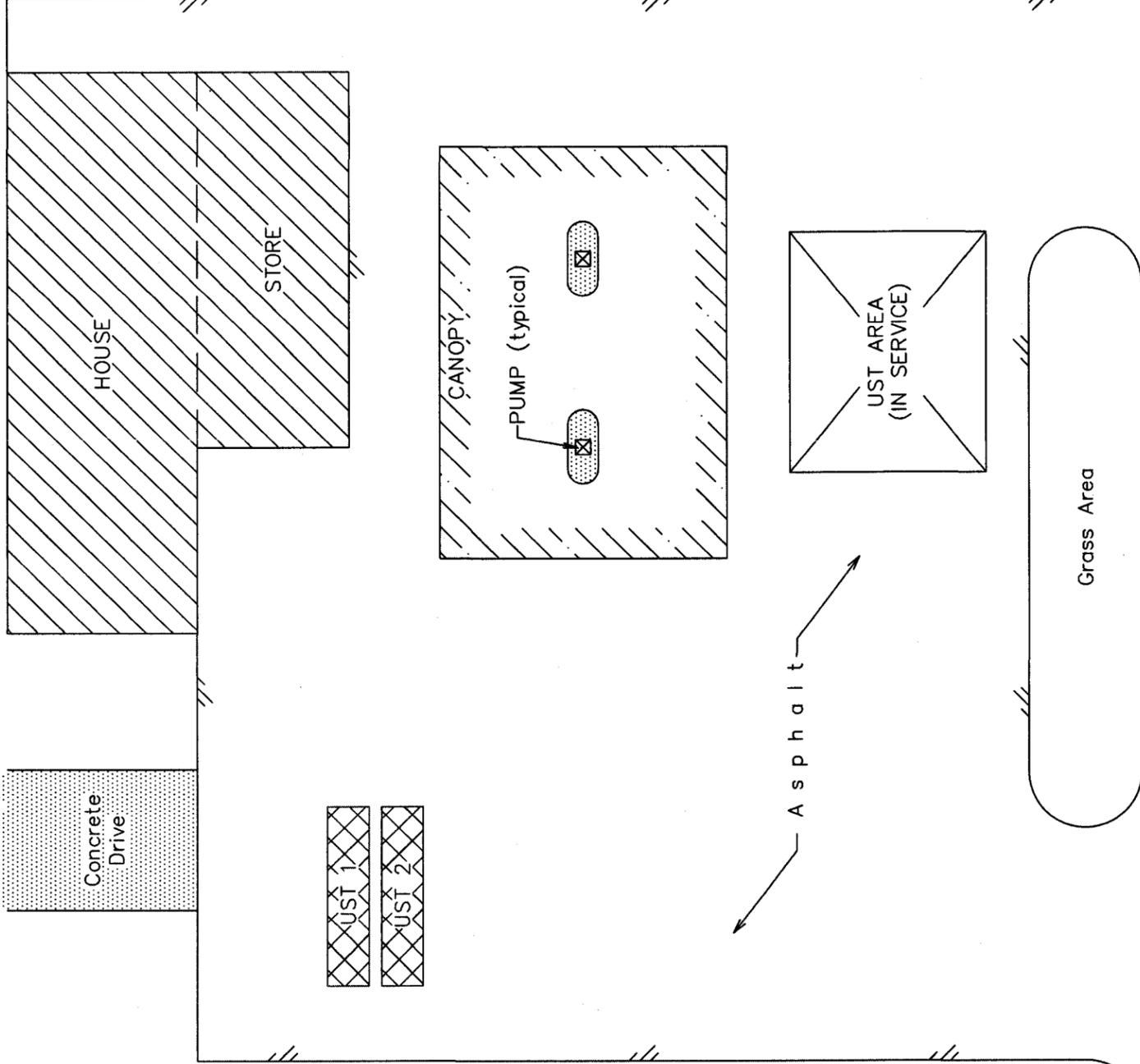
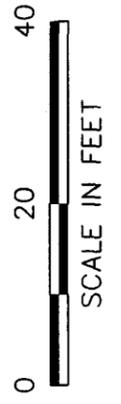
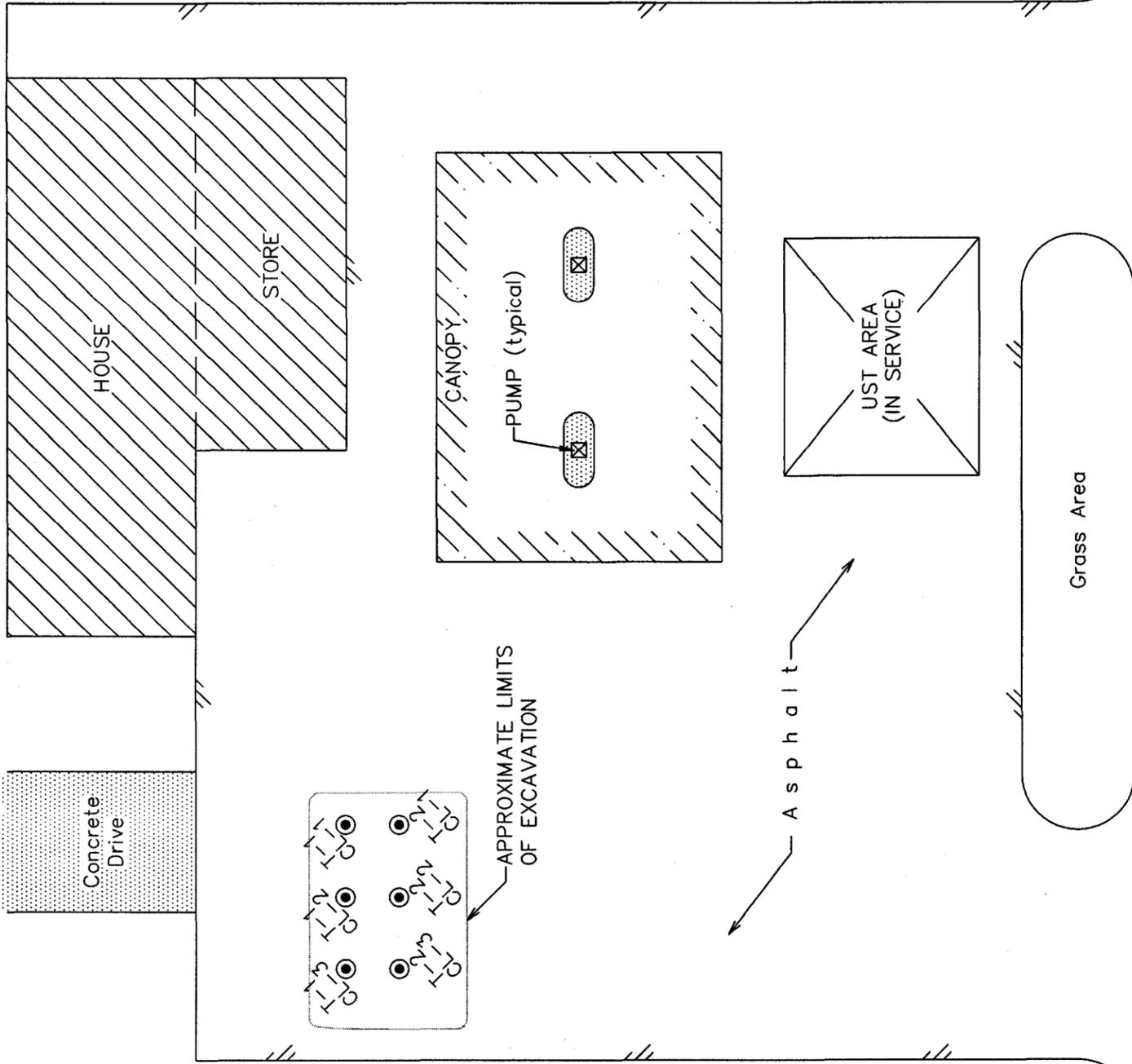


FIGURE:  
 2  
 SITE MAP  
 R-WAY II  
 6412 U.S. HIGHWAY 158  
 SUMMERFIELD, GUILFORD COUNTY, NORTH CAROLINA



**Solutions**  
 Industrial & Environmental Services  
 3722 BENSON DRIVE 27609  
 RALEIGH, NORTH CAROLINA  
 TEL.: (919) 873-1060 FAX.: (919) 873-1074

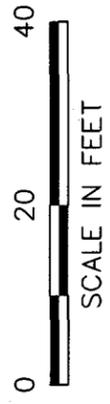
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Figure2.pit	
DATE	07/11/05
PROJECT MANAGER	BMR
CHECKED BY	BW
DRAFTER	KBB
PROJECT NUMBER	2561.05A3.DENR



U. S. H I G H W A Y 1 5 8

FIGURE: 3

CLOSURE SAMPLE LOCATION MAP  
 R-WAY II  
 6412 U.S. HIGHWAY 158  
 SUMMERFIELD, GUILFORD COUNTY, NORTH CAROLINA



**Solutions**  
 Industrial & Environmental Services  
 3722 BENSON DRIVE 27609  
 RALEIGH, NORTH CAROLINA  
 TEL.: (919) 873-1060 FAX.: (919) 873-1074

FILE	Rw0y II-Base.dwg
DATE	07/11/05
PROJECT MANAGER	BMR
CHECKED BY	BW
DRAFTER	KBB
PROJECT NUMBER	2561.05A3.DENR

**APPENDIX A**  
**SUBMITTED FORMS**

## UST-2 Site Investigation Report for Permanent Closure or Change-in-Service of UST

**FOR TANKS  
IN  
NC**

**Return completed form to:**

The DWM Regional office in the area the facility is located. SEE MAP ON THE BACK OF THIS FORM FOR REGIONAL OFFICE ADDRESSES. Return the yellow copy to the Central Office in Raleigh so that the status of the tank may be changed to "PERMANENTLY CLOSED".

STATE USE ONLY:

I.D. # \_\_\_\_\_

Date Received \_\_\_\_\_

**I. OWNERSHIP OF TANKS**

Unknown Orphan Tanks  
 Owner Name (Corporation, Individual, Public Agency, or Other Entity)  
 Street Address  
 City \_\_\_\_\_ County \_\_\_\_\_  
 State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

**II. LOCATION OF TANKS**

R-Way II  
 Facility Name or Company  
0-009763  
 Facility ID # (if known)  
6414 US Hwy 15B  
 Street Address  
Sumner-field, Guilford  
 City \_\_\_\_\_ County \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

**III. CONTACT PERSONNEL**

Name Bruce LAMAEKERS Job Title NCDEMR Project Mgr Tel. No. 919-733-1325  
 Closure Contractor S&L Solutions Address 1703 VARRAUX ST. Winston-Salem Tel. No. 336-725-5844  
 Primary Consultant Solutions-IES Address 3722 Benson Dr, Raleigh, NC Tel. No. 919-873-1060  
 Lab PACE Analytical Address 9800 Kinney Ave Suite 100, Huntersville, NC Tel. No. 704-875-9092

**IV. UST INFORMATION**

**V. EXCAVATION CONDITION**

**VI. ADDITIONAL INFORMATION**

Tank No.	Size in Gallons	Tank Dimensions	Last Contents	Water in excavation		Free product		Notable odor or visible soil contamination	
				Yes	No	Yes	No	Yes	No
1	4,000	5x24	gas/diesel		X		X		X
2	4,000	5x24	gas/diesel		X		X		X

See reverse side of pink copy (owner's copy) for additional information required by NC DWM in the written report and sketch.

**NOTE:** If a release from the tank(s) has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G.

**VII. CHECKLIST (CHECK THE ACTIVITIES COMPLETED)**

**PERMANENT CLOSURE**

(For Removal or Abandonment-in-Place)

- Contact local fire marshal
- Notify DWM Regional Office before abandonment
- Drain and flush piping into tank
- Remove all product and residuals from tank
- Excavate down to tank
- Clean and inspect tank
- Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps, and all other tank fixtures
- Cap or plug all lines except the vent and fill lines
- Purge the tank of all product and flammable vapors
- Cut one or more large holes in the tank
- Backfill the area

Date tank(s) Permanently Closed: 6/21/05

Date of Change in-service: \_\_\_\_\_

**ABANDONMENT IN PLACE**

- Fill tank until material overflows tank opening
- Plug or cap all openings
- Disconnect and cap or remove vent line
- Solid inert material used --specify \_\_\_\_\_

**REMOVAL**

- Create vent hole
- Label tank
- Dispose of tank in approved manner. Final tank destination: \_\_\_\_\_

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete

Print name and official title of owner or owner's authorized representative

SIAM Wright / Staff Geologist / Solutions-IES

Signature

[Signature]

Date Signed

7/1/05



# UST-3 Notice of Intent: UST Permanent Closure or Change-in-Service

FOR TANKS IN  
**NC**

Return completed form to:  
The DWM Regional Office located in the area where the facility is located. SEE MAP ON THE BACK OF THIS FORM FOR REGIONAL OFFICE ADDRESSES.

STATE USE ONLY  
I.D. # \_\_\_\_\_  
Date Received \_\_\_\_\_

## INSTRUCTIONS

Complete and return at least five (5) working days prior to closure or change-in-service if a Professional Engineer (P.E.) or a Licensed Geologist (L.G.) provides supervision for closure or change-in-service site assessment activities and signs and seals all closure reports. Otherwise, a thirty (30) day notice is required.

### I. OWNERSHIP OF TANKS

Unknown orphan tanks  
Owner Name (Corporation, Individual, Public Agency, or Other Entity)  
Street Address  
City \_\_\_\_\_ County \_\_\_\_\_  
State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

### II. LOCATION

R-way II  
Facility Name or Company  
0-009763  
Facility ID # (if known)  
6412 US Hwy 158  
Street Address  
Summerfield Guttford  
City County Zip Code  
Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

### III. CONTACT PERSONNEL

Name Bruce Ramaekers Job Title NC DENR Project Mgr. Phone Number 919-733-1325

### IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN SERVICE

- Contact local fire marshal.
- Plan entire closure event.
- Conduct Site Soil Assessment.
- If removing tanks or closing in place, refer to API Publication 2015 *Cleaning Petroleum Storage Tanks* and 1604 *Removal and Disposal of Used Underground Petroleum Storage Tanks*.
- Provide a sketch locating piping, tanks and soil sampling locations.
- Submit a closure report in the format of UST-12 (including the form UST-2) within thirty (30) days following the site investigation.
- If a release from the tanks has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G. If a release has not occurred, the supervision, signature or seal of a P.E. or L.G. is not required.
- Keep closure records for three (3) years.

### V. WORK TO BE PERFORMED BY

Contractor Name Soil Solutions - Inc.  
Address 1703 Vargrave St. Winston-Salem State NC Zip Code 27107  
Contact Person Tony Disher Phone No. 336-725-5844  
Primary Consultant Solutions - IES Phone No. (919) 873-1060

### VI. TANKS SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

Tank ID #	Tank Capacity	Last Contents	Proposed Activity		
			Removal	Closure Abandonment in Place	Change-In-Service New Contents Stored
<u>1</u>	<u>4,000</u>	<u>suspected gas</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<u>2</u>	<u>4,000</u>	<u>suspected diesel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	

### VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

I understand that I can be held responsible for environmental damage resulting from the improper disposal of my USTs. Read note on the back of this form before signing.  
Print name and official title B-R Brian Rebar Agent for NC DENR

Signature B-R Date Signed 6/9/05 SCHEDULED REMOVAL DATE 6/20/05  
Notify your DWM Regional Office 48 hours before this date if scheduled removal date changes

**APPENDIX B**  
**PHOTOGRAPHS**



Photograph 1. View showing former tank pit.



Photograph 2. View showing partially excavated tank pit.



Photograph 3. View of UST-2.



Photograph 4. Removal of UST-1.



Photograph 5. View of excavation after removal of USTs.



Photograph 6. View of backfilled excavation.

**APPENDIX C**

**MANIFESTS AND CERTIFICATES OF DISPOSAL**



**SOIL SOLUTIONS**

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## CERTIFICATE OF DISPOSAL

Soil Solutions, Inc. does hereby certify that 34 gallons of non-hazardous contaminated water received on 06/20/2005 from:

Generator: NC Department of Environment and Natural Resources

Originating at: 6412 US Hwy. 158  
Summerfield, NC

SSI Waste ID #: 060531

has been disposed of by Soil Solutions, Inc. in a manner approved by the North Carolina Department of Environment and Natural Resources.

Signature

Thomas W. Hammett  
Vice President  
Soil Solutions, Inc.

---

1703 Vargrave Street Winston-Salem, NC 27107

(336) 725-5844 FAX (336) 725-6244





# SOIL SOLUTIONS

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## TANKS DISPOSAL CERTIFICATE

Tank Owner: NC Department of Environment and Natural Resources

Site Address: 6412 US Hwy. 158  
Summerfield, NC

Description of Tanks:

<u>Tank Number</u>	<u>Size of Tank</u>	<u>Contents</u>
1	4,000 Gallons	Gasoline
2	4,000 Gallons	Gasoline

Transporter: Soil Solutions, Inc.

SSI Project #: 060531

Disposal Certification:

Soil Solutions, Inc. does hereby certify that the above named storage tanks were transported to Atlantic Scrap and Processing in Winston-Salem, NC for proper disposal and recycling.

Signature

Thomas W. Hammett  
Vice President  
Soil Solutions, Inc.



**APPENDIX D**

**LABORATORY ANALYTICAL REPORTS**



**Pace Analytical Services, Inc.**  
9800 Kinsey Avenue, Suite 100  
Huntersville, NC 28078  
Phone: 704.875.9092  
Fax: 704.875.9091

**Pace Analytical Services, Inc.**  
2225 Riverside Drive  
Asheville, NC 28804  
Phone: 828.254.7176  
Fax: 828.252.4618

July 07, 2005

Mr. Brian Rebar  
Solutions-IES  
3722 Bensen Dr.  
Raleigh, NC 27609

RE: Lab Project Number: 9297242  
Client Project ID: R-Way II/2561-05A3.DENR

Dear Mr. Rebar:

Enclosed are the analytical results for sample(s) received by the laboratory on June 23, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Bonnie McKee  
Bonnie.McKee@pacelabs.com  
Project Manager

Enclosures

Ashville Certification IDs  
NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

## REPORT OF LABORATORY ANALYSIS

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Solid results are reported on a dry weight basis

Lab Sample No: 925785529      Project Sample Number: 9297242-001      Date Collected: 06/21/05 12:20  
Client Sample ID: T1-CL1      Matrix: Soil      Date Received: 06/23/05 16:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>Wet Chemistry</b>									
Percent Moisture	Method: % Moisture								
Percent Moisture	17.9	%			1.0 06/24/05 14:25	KDF			
<b>GC Semivolatiles</b>									
TPH in Soil by 3545/8015	Prep/Method: EPA 3545 / EPA 8015								
Diesel Fuel	ND	mg/kg	6.1		1.2 07/05/05 14:08	KBS	68334-30-5		
n-Pentacosane (S)	75	%			1.0 07/05/05 14:08	KBS	629-99-2		
Date Extracted	06/28/05				06/28/05				
<b>GC Volatiles</b>									
GAS, Soil, North Carolina	Method: EPA 8015								
Gasoline	ND	mg/kg	4.7		0.9 06/27/05 15:58	DHW			
4-Bromofluorobenzene (S)	94	%			1.0 06/27/05 15:58	DHW	460-00-4		

Date: 07/07/05

Page: 1 of 11

Ashville Certification IDs  
NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Sample No: 925785537      Project Sample Number: 9297242-002      Date Collected: 06/21/05 12:25  
Client Sample ID: T1-CL2      Matrix: Soil      Date Received: 06/23/05 16:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
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**Wet Chemistry**

Percent Moisture	Method: % Moisture								
Percent Moisture	15.6	%			1.0 06/24/05 14:25	KDF			

**GC Semivolatiles**

TPH in Soil by 3545/8015	Prep/Method: EPA 3545 / EPA 8015								
Diesel Fuel	ND	mg/kg	5.9		1.2 07/05/05 14:38	KBS	68334-30-5		
n-Pentacosane (S)	75	%			1.0 07/05/05 14:38	KBS	629-99-2		
Date Extracted	06/28/05				06/28/05				

**GC Volatiles**

GAS. Soil, North Carolina	Method: EPA 8015								
Gasoline	ND	mg/kg	5.6		1.1 06/27/05 16:27	DHW			
4-Bromofluorobenzene (S)	87	%			1.0 06/27/05 16:27	DHW	460-00-4		

Date: 07/07/05

Page: 2 of 11

Ashville Certification IDs  
NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Sample No: 925785545      Project Sample Number: 9297242-003      Date Collected: 06/21/05 12:30  
Client Sample ID: T1-CL3      Matrix: Soil      Date Received: 06/23/05 16:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
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**Wet Chemistry**

Percent Moisture	Method: % Moisture								
Percent Moisture	15.4	%			1.0	06/24/05 14:25	KDF		

**GC Semivolatiles**

TPH in Soil by 3545/8015	Prep/Method: EPA 3545 / EPA 8015								
Diesel Fuel	ND	mg/kg	5.9		1.2	07/05/05 15:08	KBS 68334-30-5		
n-Pentacosane (S)	64	%			1.0	07/05/05 15:08	KBS 629-99-2		
Date Extracted	06/28/05					06/28/05			

**GC Volatiles**

GAS, Soil, North Carolina	Method: EPA 8015								
Gasoline	ND	mg/kg	5.4		1.1	06/27/05 16:56	DHW		
4-Bromofluorobenzene (S)	86	%			1.0	06/27/05 16:56	DHW 460-00-4		

Date: 07/07/05

Page: 3 of 11

**Ashville Certification IDs**  
NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

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**Charlotte Certification IDs**  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



Lab Sample No: 925785552      Project Sample Number: 9297242-004      Date Collected: 06/21/05 10:05  
Client Sample ID: T2-CL1      Matrix: Soil      Date Received: 06/23/05 16:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>Wet Chemistry</b>									
Percent Moisture	Method: % Moisture								
Percent Moisture	13.8	%			1.0 06/24/05 14:26	KDF			
<b>GC Semivolatiles</b>									
TPH in Soil by 3545/8015	Prep/Method: EPA 3545 / EPA 8015								
Diesel Fuel	ND	mg/kg	5.8		1.2 07/05/05 15:39	KBS	68334-30-5		
n-Pentacosane (S)	58	%			1.0 07/05/05 15:39	KBS	629-99-2		
Date Extracted	06/28/05				06/28/05				
<b>GC Volatiles</b>									
GAS, Soil, North Carolina	Method: EPA 8015								
Gasoline	ND	mg/kg	5.0		1.0 06/25/05 11:26	DHW			
4-Bromofluorobenzene (S)	128	%			1.0 06/25/05 11:26	DHW	460-00-4		

**REPORT OF LABORATORY ANALYSIS**

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Lab Sample No: 925785560      Project Sample Number: 9297242-005      Date Collected: 06/21/05 10:10  
Client Sample ID: T2-CL2      Matrix: Soil      Date Received: 06/23/05 16:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
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**Wet Chemistry**

Percent Moisture	Method: % Moisture								
Percent Moisture	20.1	%			1.0 06/24/05 14:26	KDF			

**GC Semivolatiles**

TPH in Soil by 3545/8015	Prep/Method: EPA 3545 / EPA 8015								
Diesel Fuel	ND	mg/kg	6.3		1.2 07/05/05 16:09	KBS	68334-30-5		
n-Pentacosane (S)	65	%			1.0 07/05/05 16:09	KBS	629-99-2		
Date Extracted	06/28/05				06/28/05				

**GC Volatiles**

GAS, Soil, North Carolina	Method: EPA 8015								
Gasoline	ND	mg/kg	6.3		1.2 06/25/05 11:55	DHW			
4-Bromofluorobenzene (S)	113	%			1.0 06/25/05 11:55	DHW	460-00-4		

Date: 07/07/05

Page: 5 of 11

**Ashville Certification IDs**

NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

**REPORT OF LABORATORY ANALYSIS**

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**Charlotte Certification IDs**

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Sample No: 925785578      Project Sample Number: 9297242-006      Date Collected: 06/21/05 10:15  
Client Sample ID: T2-CL3      Matrix: Soil      Date Received: 06/23/05 16:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
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**Wet Chemistry**

Percent Moisture	Method: % Moisture								
Percent Moisture	10.3	%			1.0 06/24/05 14:27	KDF			

**GC Semivolatiles**

TPH in Soil by 3545/8015	Prep/Method: EPA 3545 / EPA 8015								
Diesel Fuel	ND	mg/kg	5.6		1.1 07/06/05 20:44	KBS	68334-30-5		
n-Pentacosane (S)	71	%			1.0 07/06/05 20:44	KBS	629-99-2		
Date Extracted	06/28/05				06/28/05				

**GC Volatiles**

GAS, Soil, North Carolina	Method: EPA 8015								
Gasoline	ND	mg/kg	5.8		1.2 06/25/05 12:24	DHW			
4-Bromofluorobenzene (S)	106	%			1.0 06/25/05 12:24	DHW	460-00-4		

Date: 07/07/05

Page: 6 of 11

**Ashville Certification IDs**  
NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

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**Charlotte Certification IDs**  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



**PARAMETER FOOTNOTES**

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

Method 9071B modified to use ASE.

All pH, Free Chlorine, Total Chlorine and Ferrous Iron analyses conducted outside of EPA recommended immediate hold time.

Depending on the moisture content the PRLs can be elevated for all soil samples reported on a dry weight basis.

2-Chloroethyl vinyl ether has been shown to degrade in the presence of acid.

- ND Not detected at or above adjusted reporting limit
- NC Not Calculable
- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL Adjusted Method Detection Limit
- (S) Surrogate

**REPORT OF LABORATORY ANALYSIS**

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Lab Project Number: 9297242

Client Project ID: R-Way II/2561-05A3.DENR

QC Batch: 131566  
QC Batch Method: EPA 3545  
Associated Lab Samples: 925785529 925785537 925785545 925785552 925785560 925785578

Analysis Method: EPA 8015

Analysis Description: TPH in Soil by 3545/8015

METHOD BLANK: 925801177  
Associated Lab Samples: 925785529 925785537 925785545 925785552 925785560 925785578

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Diesel Fuel	mg/kg	ND	5.0	
n-Pentacosane (S)	%	82		

LABORATORY CONTROL SAMPLE: 925801185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Diesel Fuel	mg/kg	166.70	248.7	149	1
n-Pentacosane (S)	%			85	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 925801193 925801201

Parameter	Units	925785552 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	0.4819	193.50	259.2	224.0	134	116	15	
n-Pentacosane (S)	%					84	75		

SAMPLE DUPLICATE: 925801219

Parameter	Units	925785560 Result	DUP Result	RPD	Footnotes
Diesel Fuel	mg/kg	ND	ND	NC	
n-Pentacosane (S)	%	65	63		

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

- LCS(D) Laboratory Control Sample (Duplicate)
- MS(D) Matrix Spike (Duplicate)
- DUP Sample Duplicate
- ND Not detected at or above adjusted reporting limit
- NC Not Calculable
- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL Adjusted Method Detection Limit
- RPD Relative Percent Difference
- (S) Surrogate
- [1] The surrogate and/or spike recovery was outside acceptance limits.

Date: 07/07/05

Page: 11 of 11

Ashville Certification IDs

NC Wastewater 40  
NC Drinking Water 37712  
SC Environment 99030  
FL NELAP E87648

**REPORT OF LABORATORY ANALYSIS**

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



# CHAIN-OF-CUSTODY Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
Required Client Information:

Company: Solutions Inc  
Address: 5722 Benson Pl  
Raleigh, NC 27609  
Email To: breck@Solutions-103.com  
Phone: 919 873-1100 Fax: 919 873-1074  
Requested Due Date/TAT:

**Section B**  
Required Project Information:

Report To: Brian Rebar  
Copy To: Brian Wright  
Purchase Order No.:  
Project Name: R WAY II  
Project Number: 2561-05413.DENA  
Pace Project Manager: BKM  
Pace Profile #: 2851-8

**Section C**  
Invoice Information:

Attention: Mary Konrad  
Company Name: Solutions Inc  
Address:  
Pace Quote Reference:  
Pace Project Manager: BKM  
Pace Profile #: 2851-8

**REGULATORY AGENCY**

NPDES  
 GROUND WATER  
 RCRA

DRINKING WATER  
 Other

**SITE LOCATION**

GA  IL  IN  MI  MN  NC  
 OH  SC  WI  OTHER

ITEM #	Valid Matrix Codes	Required Client Information	SAMPLE ID	Matrix Code	Sample Type	COLLECTED		# OF CONTAINERS	Preservatives	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> SO <sub>3</sub>	Methanol	Other	Filtered (Y/N)	Requested Analysis:	Pace Project Number	Lab ID
						COMPOSITE START DATE	COMPOSITE END/GRAB DATE														
1	DRINKING WATER		CL1	SLG	G-GRAB	6/21	12:20	4	X	X									919 7212	765785529	
2	WASTE WATER		CL2				12:25	4	X	X										5537	
3	WASTE WATER		CL3				12:30	4	X	X										5545	
4	WASTE WATER		CL1				10:05	4	X	X										5552	
5	WASTE WATER		CL2				10:10	4	X	X										5560	
6	WASTE WATER		CL3				10:15	4	X	X										5578	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITION
Brian Wright / Solutions Inc	6/22	10:00	PA. Spocca / Pace	6/25	11:00	Received on Ice Y/N Custody Y/N Sealed Cooler Y/N Samples Y/N Intact Y/N
PA. Spocca / Pace	6/23	11:00	Brian Wright	6/25	11:00	

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: Brian Wright  
SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YY): 6/25/10