

**Preliminary Site  
Assessment Report  
Kenneth Helderman and Service Oil  
Company Properties  
Wadesboro, North Carolina**

**H&H Job No. ROW-013  
State Project MA100014R  
Internal Order TP1000371  
November 25, 2003**



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**Preliminary Site Assessment Report  
Helderman and Service Oil Properties  
Wadesboro, North Carolina  
H&H Project ROW-013**

**1.0 Introduction**

This report summarizes Hart & Hickman's (H&H) Preliminary Site Assessment (PSA) of the Kenneth Helderman and Service Oil Company properties (Parcel 647411659374 and 647411750360) located at the northwest corner of US 74 and North Rutherford Street in Wadesboro, Anson County, North Carolina. The work was conducted in general accordance with H&H's August 29, 2003 Technical and Cost Proposal and in response to your subsequent Notice to Proceed. A site location map excerpted from the United States Geological Survey topographic map is provided as Figure 1. A site layout is presented as Figure 2. Site photographs are included in Appendix A.

The PSA at the site was conducted to determine if existing subsurface soil is impacted by petroleum hydrocarbons due to historical operations, specifically in areas near the car wash building, the former underground storage tanks (USTs), and dispenser islands.

**2.0 Background**

The subject properties are contiguous and comprised of Parcel #647411659374, which contains a steel-framed car wash building with a boiler room, and Parcel #647411750360, which includes a small, glass-front, one-story brick building utilized as the car wash office, a small concrete block storage building, and an inactive dispenser island south of the building. The glass-fronted building previously housed a service station (SERVCO #0911). According to the information supplied by DOT and a review of regulatory files at the Fayetteville Regional Office of the North Carolina Department of Environment and Natural Resources (DENR), seven underground storage tanks were previously located east of the former service station building. The USTs were removed in 1988 and 2000, and evidence of a petroleum release was encountered during the removal activities in 2000. The locations of the USTs removed in 2000 are indicated on Figure 2 and the location of the 1988 UST was reportedly immediately west of the 10,000-gallon diesel

UST. Additionally, a former fueling dispenser island was reportedly located east of the building and is indicated on the figure.

The site has been assigned a high-risk designation and DENR incident number 22317. H&H reviewed and copied a December 2001 Comprehensive Site Assessment (CSA) completed by Wallace-Lee Consultants for the former service station site. Excerpts from the CSA, including text, tables, figures, and boring logs, are included in Appendix B. According to the CSA, 13 monitoring wells were installed and 22 soil borings advanced at the site during CSA site activities to assess the petroleum release. Additionally, 19 soil samples were collected during UST closures. The assessment was generally conducted on the service station property although one monitoring well (MW-8) was installed on the car wash property.

Based on the CSA data, soils are impacted across much of the southern, eastern and northern portions of the service station parcel. Most soil samples submitted for laboratory analyses were collected from depths of greater than 10 ft. However review of the organic vapor analyzer (OVA) readings on the CSA boring logs indicates impacted soil present at shallower depths as well at variable depths across the site to approximately 20 ft below grade, where ground water was encountered. Figure 2 presents the CSA soil sampling locations and inferred extent of soil impacts as presented by Wallace-Lee in the CSA.

A review of the ground water sampling information from the CSA indicates non-aqueous phase liquid (NAPL) is present at the site near the former dispenser island southeast of the building. Ground water is present at approximately 20 ft below grade and additional assessment will likely be required at the site. It should be noted that H&H noted the presence of some additional monitoring wells not indicated in the CSA, thus additional assessment has apparently been conducted since December 2001 but not yet reported to DENR.

### 3.0 Field Activities

Schnabel Engineering South, LLC, a DOT subcontract geophysical contractor conducted a geophysical survey of the facility and indicated in an October 7, 2003 report that there were no indications of USTs remaining at the site. It should be noted that H&H observed an approximate 300-gallon oil/water separator northeast of the car wash, however this was not noted in the Schnabel report due to interference from the building and steel-reinforced concrete.

On September 17, 2003 H&H mobilized to the site, noted the locations of the former UST basins, existing and former fueling islands, and other areas of environmental concern. H&H selected locations for soil borings based on these features and information provided in the CSA. The soil borings were advanced via direct push technology (DPT) performed by Subsurface Environmental Investigations, Inc. Seven soil borings were advanced at the car wash property since no previous soil samples had been collected on this parcel during the service station property assessment. H&H also advanced five borings on the service station property to further assess the lateral extent of impact and to assess shallow soil conditions on the property since many of the CSA soil samples with analytical results were collected at depth greater than 10 ft.

#### Existing UST Systems

An access plate and a drain cleanout associated with an underground oil/water separator were identified in the parking area near the northeast corner of the car wash building. H&H estimated the size of the oil water separator to be approximately 300 gallons.

H&H observed a potential heating oil fuel line within the boiler room of the car wash building that appeared to terminate at the eastern wall of the building. Although the geophysical survey did not indicate the presence of a UST associated with the car wash, there is a potential that a UST or AST was located next to the boiler room based on the inactive fuel line. However, H&H did not note a fill port or vent line in this area.

As indicated above, seven USTs were removed from the service station property in 1988 and 2000. The only physical remnant of the UST system is the existing, but inactive dispenser island located in the southern portion of the site and a vent pipe located east of the concrete block storage building. Based on information in the CSA, a second fueling island was located southeast of the former service station building (Figure 2), however no visual evidence of the second dispenser island was observed.

No other visual indicators of additional USTs were noted.

### Soil Sampling

H&H oversaw the advancement of twelve soil borings on the properties. The borings are identified as DPT-1 through DPT-12 on Figure 3 and were advanced to depths ranging from 10 to 15 ft below grade. Soils encountered at the site were primarily reddish-brown clayey sandy silts. Bedrock and/or ground water were not encountered during H&H's soil assessment activities. Boring logs are included as Appendix C.

During boring advancement, soils were evaluated for the presence of staining, odors, and OVA readings. OVA readings were measured using a photo ionization detector (PID). As indicated above, the locations of the borings were based on the availability of previous soil assessment data by others and observed site features.

Field indicators of impact, including petroleum odors and elevated PID readings were noted in samples from borings DPT-4, DPT-9, DPT-10, DPT-11, and DPT-12. Borings DPT-9, 10, 11, and 12 were located in the vicinity of the former fueling islands or tank basins. Field indications of impacted soil were also noted in boring DPT-4 located approximately 5 feet from the boiler room in the car wash building. As noted above, H&H suspects a heating oil UST may be (or was) located in this area.

### Samples Submitted for Laboratory Analysis

One soil sample from each boring was submitted to a DOT contract laboratory (Prism Laboratories of Charlotte, North Carolina) for analysis of petroleum hydrocarbons in the gasoline range (TPH-GRO) by EPA Method 5030, and total petroleum hydrocarbons in the diesel range (TPH-DRO) by EPA Method 3550. An additional soil sample from DPT-4 was submitted for laboratory analysis to evaluate variations in petroleum concentrations with depth.

### Analytical Results

Table 1 summarizes the locations of the borings, sample intervals submitted for laboratory analysis, and the analytical results. Individual laboratory analytical data sheets and chain-of-custody documentation are included in Appendix D. The TPH-GRO/TPH-DRO results are also summarized on Figure 4. The results are discussed by location in the following sections.

#### *Car Wash Building*

H&H advanced borings in the vicinity of the car wash building because this area was not investigated during CSA activities. Neither TPH-GRO or TPH-DRO were detected above laboratory detection limits in samples collected south (DPT-2 [2.5-5 ft]), west (DPT-1 [2.5-5 ft] and DPT-7 [2.5-5 ft]), and north (DPT-5 [5-7.5 ft] and DPT-6 [5-7.5 ft]) of the car wash. It should be noted that DPT-5 and DPT-6 were advanced east and west of the existing oil/water separator and samples from these borings did not contain detectable concentrations of TPH. Therefore, there is no evidence of impacted soil associated with the oil/water separator.

TPH-GRO and TPH-DRO were detected at 1 milligram per kilogram (mg/kg) and 740 mg/kg, respectively, east of the car wash in a sample from DPT-4 (7.5-10 ft) but not in the shallower sample DPT-4 (2.5-5 ft). No detections of TPH were present in the sample collected from DPT-8, located approximately 20 ft east of DPT-4. Therefore, a limited area of impacted soil is present east of the car wash building.

### *Former UST Basins*

H&H advanced borings in the vicinity of the former USTs to assess shallower impacts than were analyzed during CSA activities. TPH-GRO and DRO were detected in the samples from DPT-9 (0-2.5 ft), and DPT-10 (7.5-10 ft), which were located adjacent and north of the former UST basin. DPT-9 (0-2.5 ft) contained 31 mg/kg and 34 mg/kg of TPH-GRO and DRO, respectively. DPT-10 (7.5-10 ft) contained 190 mg/kg and 770 mg/kg of TPH-GRO and DRO, respectively.

### *Existing Dispenser Island*

H&H advanced borings in the vicinity of the existing dispenser and to the west to evaluate the shallow soil impacts and to determine the lateral extent to the west. TPH-DRO only was detected in the samples from DPT-11 (2.5-5 ft), and DPT-12 (5-7.5 ft) located in the vicinity of the existing (but inactive) dispenser island. TPH-DRO was also detected in DPT-3 (2.5-5 ft), located approximately 40 ft west of the dispenser.

## **4.0 Summary**

The site is comprised of two parcels, a car wash and former service station. Seven USTs, associated piping, and two dispenser islands were formerly located at the service station property. Additionally, an existing oil-water separator is present near the car wash and there is evidence that a heating oil tank may have been located near the car wash. According to a CSA conducted by others at the site, there is a significant amount of soil and ground water contamination at the site. Free product was detected in the vicinity of a former tank basin and dispenser island. Soil impacts were detected across much of the service station site.

H&H advanced a total of twelve soil borings at the site to evaluate soil impacts at the service station site as well as in the vicinity of the car wash building. H&H submitted soil samples to Prism Laboratories for analysis of TPH-GRO and TPH-DRO. TPH in either the gasoline or diesel range was detected in samples collected in the vicinity of the former service station UST basins and surrounding the existing (but inactive) fueling island. TPH-GRO and DRO was also detected in a sample collected from a boring near the east side of the car wash building.

Based on the soil impacts adjacent to the east wall of the former boiler room at the car wash building and the discovery of a copper heating oil supply line, H&H suspects that a heating oil UST or AST may have been located adjacent to the car wash building. However there were no visual indications that a UST is still in-place, and the geophysical study performed at the site did not indicate the presence of the UST in the suspected location.

Soils impacts were detected during CSA activities across the southern, eastern and northern portions of the much of the former service station parcel site at varying depths. Confirmatory soil sampling conducted by H&H confirms the presence of these impacts in select locations. Additionally a small area of impacted soil was detected east of the car wash building. Figure 5 presents the estimated lateral extent of impacted soils at the site based on the data contained in the December 2001 CSA and the supplementary sampling conducted by H&H in October 2003. Based on this data, H&H estimates the area of impacted soil to be approximately 10,000 square feet. Impacts were noted in some shallow soil samples, and PID readings from CSA boring logs indicate shallow impacts. However, it is not anticipated that all surficial soils are impacted across the area of impacts. For estimation purposes, H&H has conservatively assumed that the impacts in the dispenser areas occur at shallower depths and extend from 2 ft below grade to the water table at 20 ft. In other areas, it was estimated that the average depth of impact extended from 5 ft to 20 ft. This is a simplified estimation and the actual geometry is likely more complex. Using these assumptions, H&H estimates approximately 5,600 cubic yards of soil above the water table is impacted with petroleum hydrocarbons. Therefore, it is recommended that soil excavated in the areas of impact be screened and segregated prior to or during grading activities.



**Table 1**  
**Summary of Soil Analytical Results**  
**Helderman & Service Oil Properties**  
**Wadesboro, North Carolina**  
**H&H Job No. ROW-013**

Boring ID	Depth of Laboratory Sample	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Location
DPT-1	2.5-5 ft	<1.0	<10	West of Car Wash
DPT-2	2.5-5 ft	<1.0	<10	South of Car Wash
DPT-3	2.5-5 ft	<1.0	58	South of Car Wash, West of Fuel Island
DPT-4	2.5-5 ft	<1.0	<10	East of Car Wash
	7.5-10 ft	1	740	
DPT-5	5-7.5 ft	<1.0	<10	East end of Oil/Water Separator
DPT-6	5-7.5 ft	<1.0	<10	West end of Oil/Water Separator
DPT-7	2.5-5 ft	<1.0	<10	40 Ft West of Car Wash
DPT-8	7.5-10 ft	<1.0	<10	25 Ft East of Car Wash
DPT-9	0-2.5 ft	31	34	North End of Former Tank Basin
DPT-10	7.5-10 ft	190	770	West of Former Tank Basin
DPT-11	2.5-5 ft	<1.0	15	South of Main Fuel Island
DPT-12	5-7.5 ft	<1.0	31	Northwest Corner of Main Fuel Island

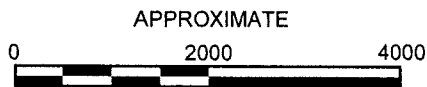
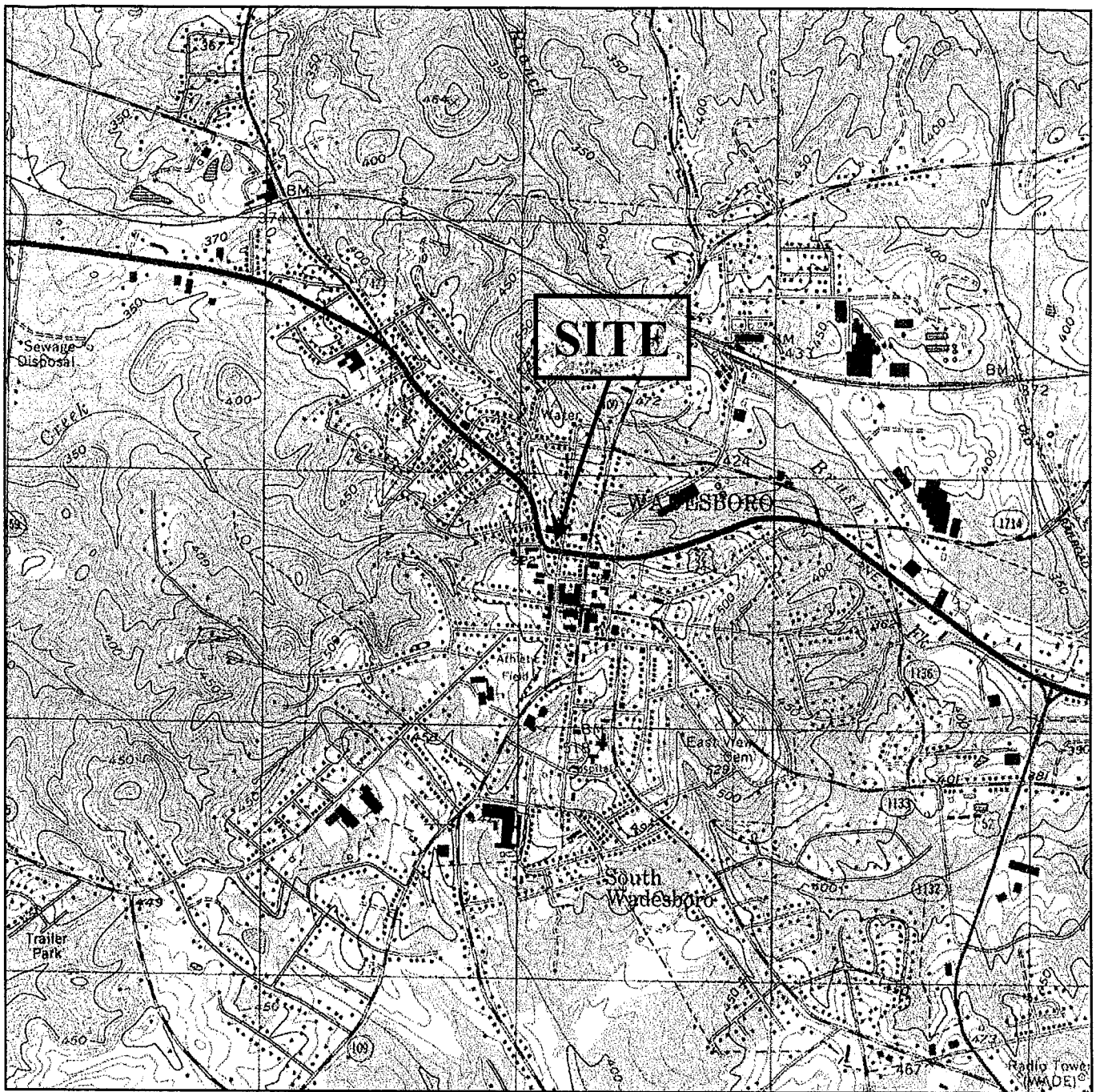
Notes:

All samples collected 10/17/03

TPH-GRO = total petroleum hydrocarbons - gasoline range organics by EPA Method 5030

TPH-DRO = total petroleum hydrocarbons - diesel range organics by EPA Method 3550

mg/kg = milligrams per kilogram




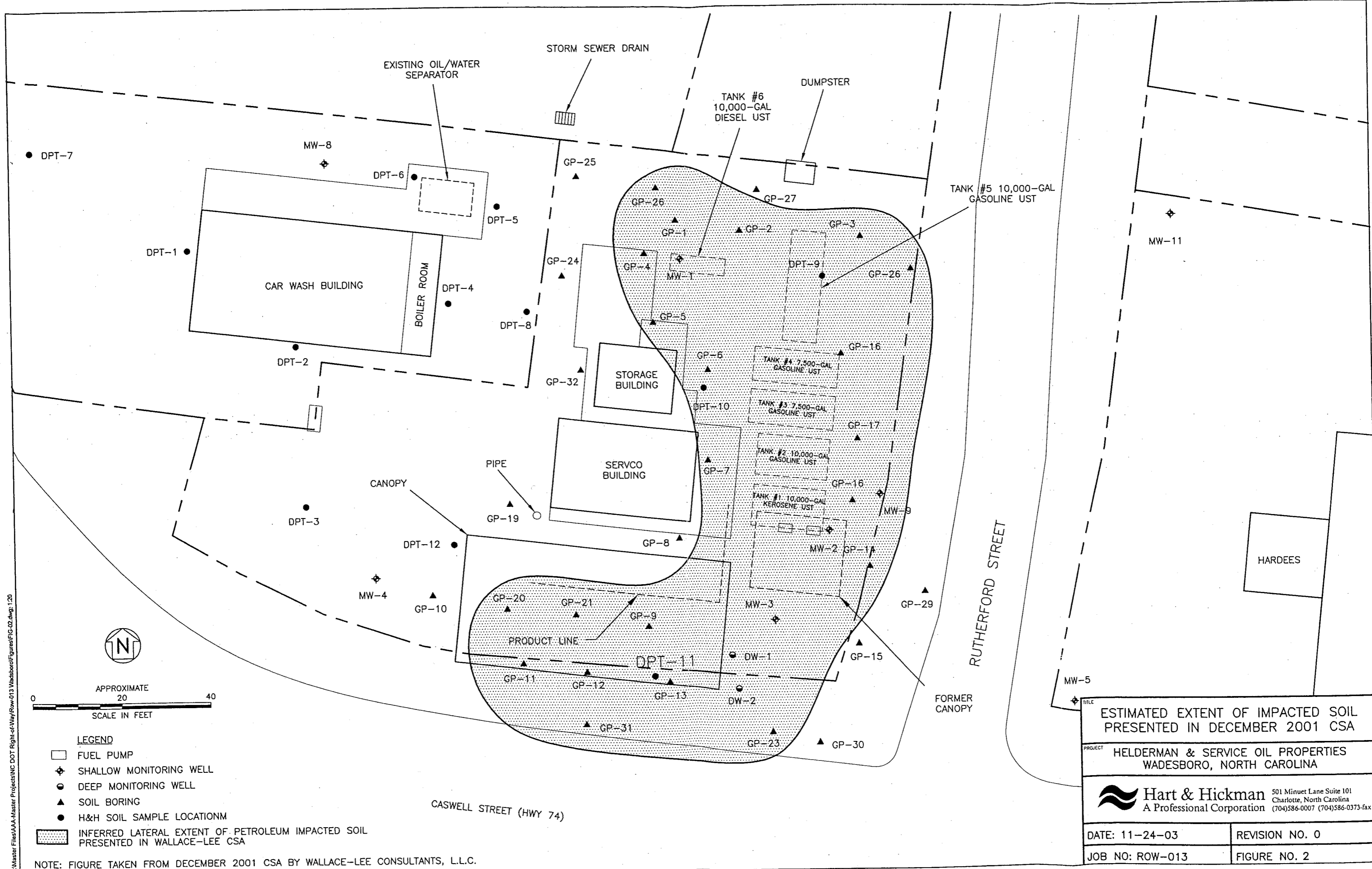
SCALE IN FEET

U.S.G.S. QUADRANGLE MAP

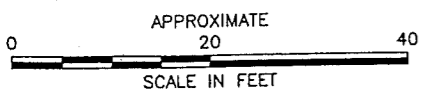
**WADESBORO, NC 1956  
REVISED/INSPECTED 1988**

QUADRANGLE  
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	SITE LOCATION MAP		
PROJECT	HELDERMAN & SERVICE OIL PROPERTIES WADESBORO, NORTH CAROLINA		
 <b>Hart &amp; Hickman</b> 501 Minuet Lane-Suite 101 Charlotte, North Carolina 28217 A Professional Corporation (704)-586-0007 (704)-586-0373 fax			
DATE:	11-11-03	REVISION NO:	0
JOB NO:	ROW-013	FIGURE NO:	1



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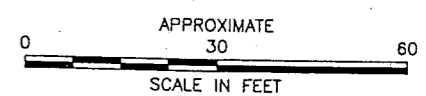
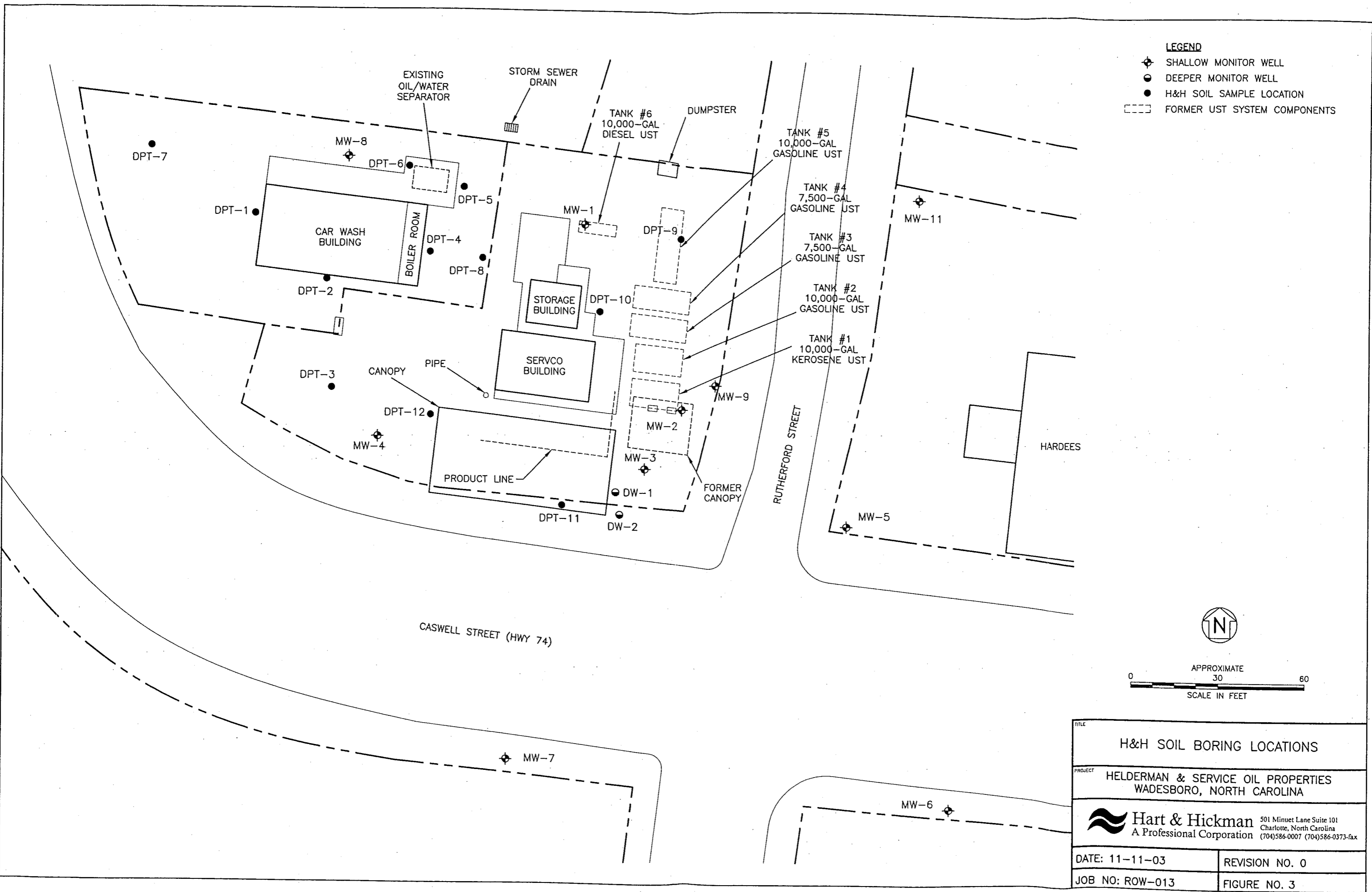
- LEGEND**
- FUEL PUMP
  - ◆ SHALLOW MONITORING WELL
  - DEEP MONITORING WELL
  - ▲ SOIL BORING
  - H&H SOIL SAMPLE LOCATION
  - ▨ INFERRED LATERAL EXTENT OF PETROLEUM IMPACTED SOIL PRESENTED IN WALLACE-LEE CSA


NOTE: FIGURE TAKEN FROM DECEMBER 2001 CSA BY WALLACE-LEE CONSULTANTS, L.L.C.

<b>ESTIMATED EXTENT OF IMPACTED SOIL PRESENTED IN DECEMBER 2001 CSA</b>	
PROJECT: HELDERMAN & SERVICE OIL PROPERTIES WAESBORO, NORTH CAROLINA	
<b>Hart &amp; Hickman</b> 501 Minuet Lane Suite 101 A Professional Corporation Charlotte, North Carolina (704)586-0007 (704)586-0373-fax	
DATE: 11-24-03	REVISION NO. 0
JOB NO: ROW-013	FIGURE NO. 2

**LEGEND**

- ⊕ SHALLOW MONITOR WELL
- DEEPER MONITOR WELL
- H&H SOIL SAMPLE LOCATION
- FORMER UST SYSTEM COMPONENTS



TITLE <b>H&amp;H SOIL BORING LOCATIONS</b>	
PROJECT HELDERMAN & SERVICE OIL PROPERTIES WAESBORO, NORTH CAROLINA	
 <b>Hart &amp; Hickman</b> A Professional Corporation	
<small>501 Minuet Lane Suite 101 Charlotte, North Carolina (704)586-0007 (704)586-0373-fax</small>	
DATE: 11-11-03	REVISION NO. 0
JOB NO: ROW-013	FIGURE NO. 3

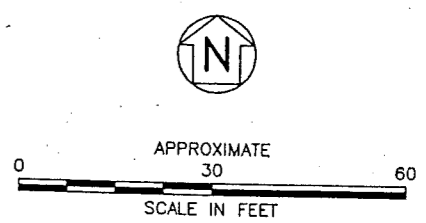
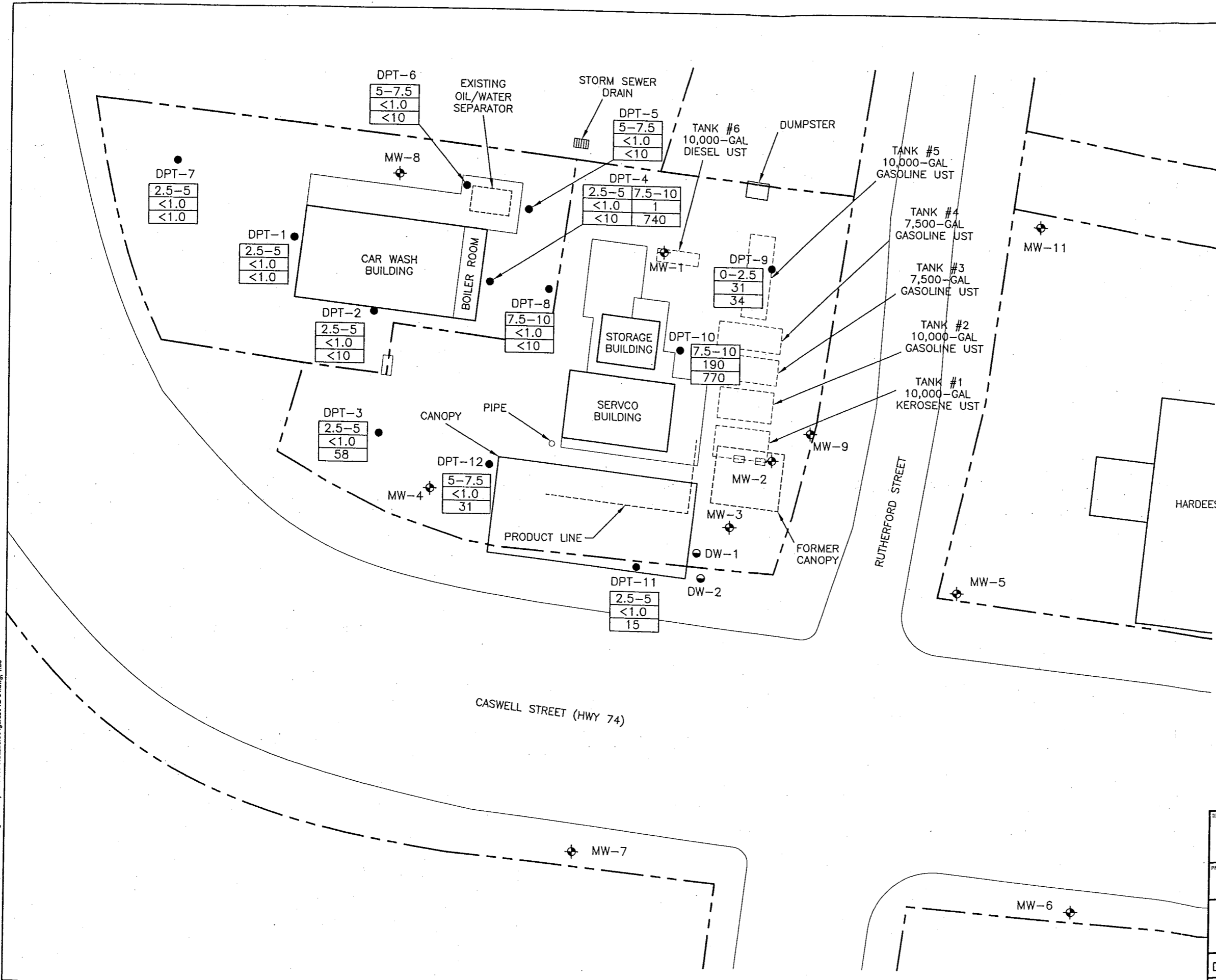
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**LEGEND**

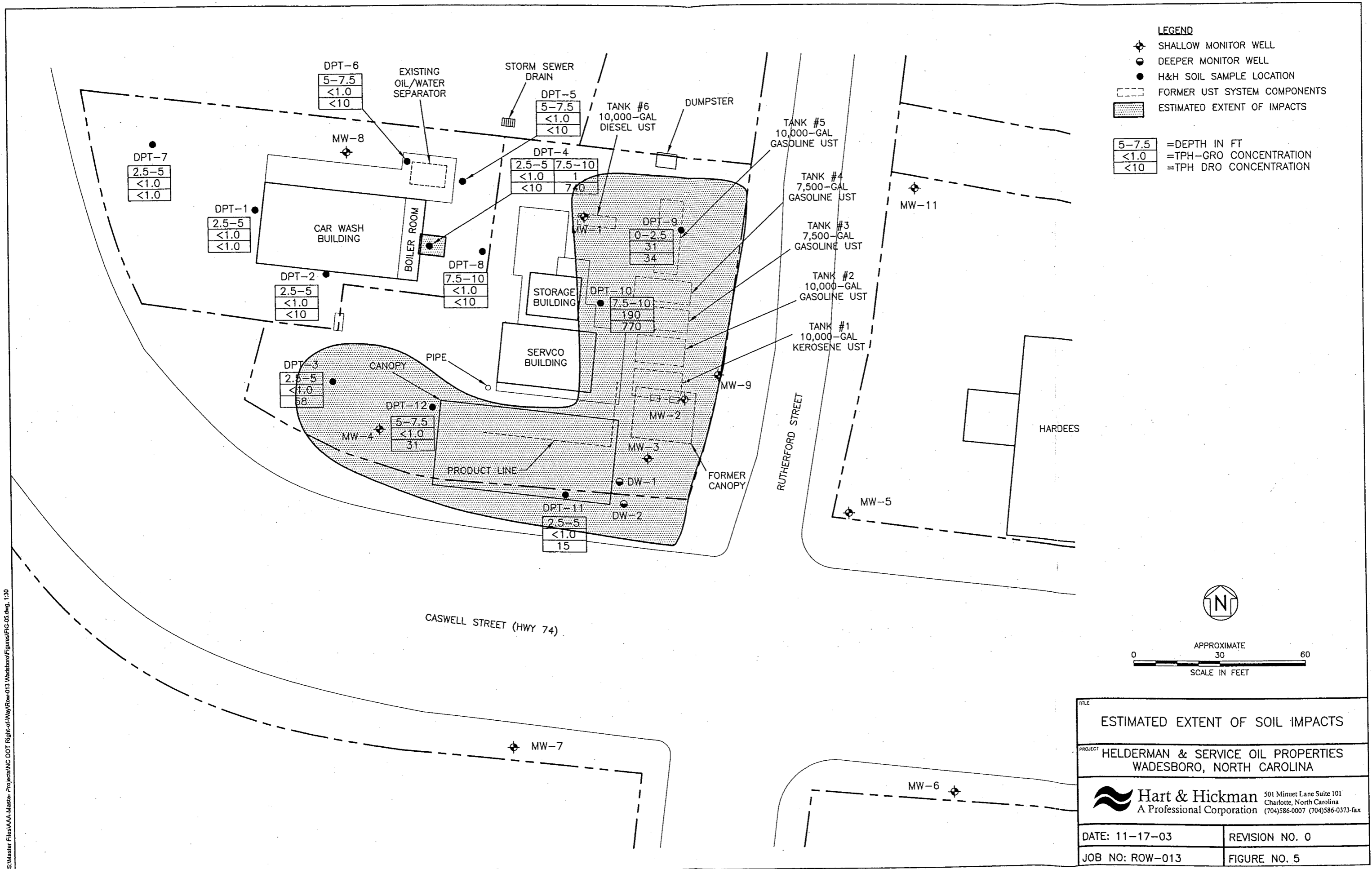
- ⊕ SHALLOW MONITOR WELL
- DEEPER MONITOR WELL
- H&H SOIL SAMPLE LOCATION
- FORMER UST SYSTEM COMPONENTS


5-7.5	=DEPTH IN FT
<1.0	=TPH-GRO CONCENTRATION
<10	=TPH DRO CONCENTRATION



TITLE <b>H&amp;H SOIL BORINGS AND SOIL LABORATORY RESULTS</b>	
PROJECT HELDERMAN & SERVICE OIL PROPERTIES WAESBORO, NORTH CAROLINA	
 <b>Hart &amp; Hickman</b> A Professional Corporation	
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DATE: 11-17-03	REVISION NO. 0
JOB NO: ROW-013	FIGURE NO. 4

S:\Master Files\AAA-Master-Projects\NC DOT Right-of-Way\Row-013 Wadesboro\Figures\FIG 05.dwg, 1:30

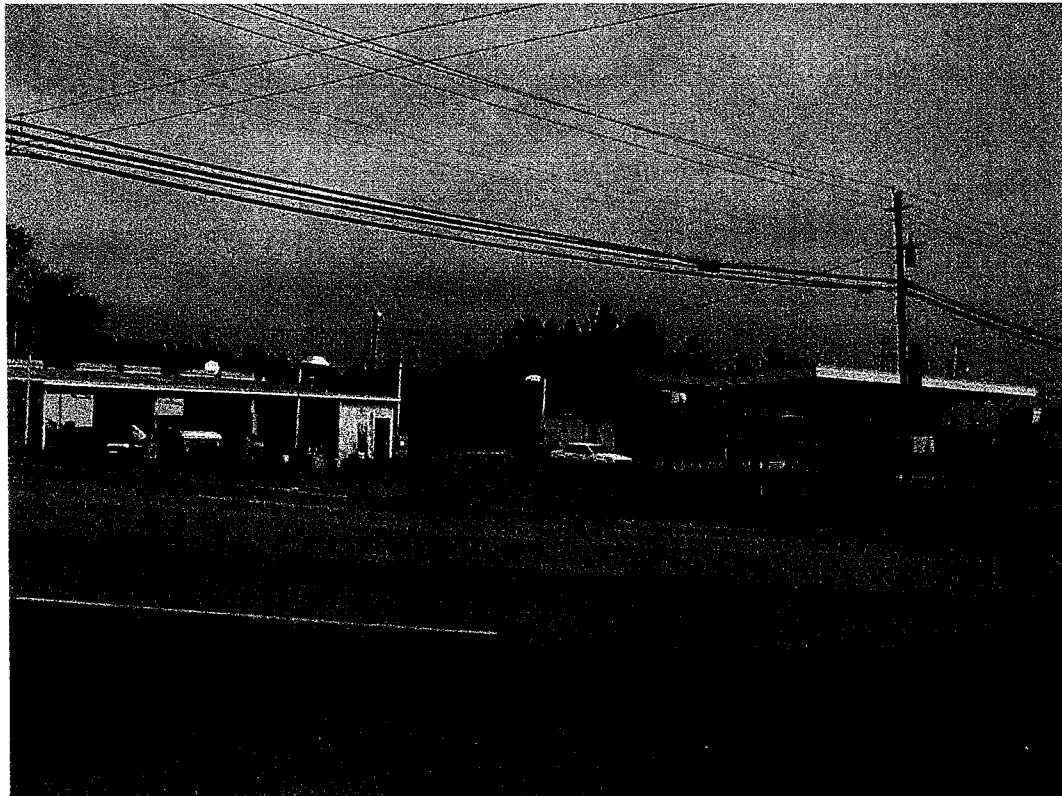


TITLE ESTIMATED EXTENT OF SOIL IMPACTS	
PROJECT HELDERMAN & SERVICE OIL PROPERTIES WADESBORO, NORTH CAROLINA	
 <b>Hart &amp; Hickman</b> A Professional Corporation	
501 Minuet Lane Suite 101 Charlotte, North Carolina (704)586-0007 (704)586-0373-fax	
DATE: 11-17-03	REVISION NO. 0
JOB NO: ROW-013	FIGURE NO. 5

**Appendix A**  
**Site Photographs**



Looking southeast toward car wash



Looking northeast across Highway 74. Car wash is on the left, former SERVCO #00911 is on the right

HELDERMAN PROPERTIES  
WADESBORO, NORTH CAROLINA

 **Hart & Hickman** 501 Minuet Lane-Suite 101  
Charlotte, North Carolina 28217  
A Professional Corporation (704)-586-0007 (704)-586-0373 fax

DATE: 11-12-03

SITE PHOTOGRAPHS

JOB NO: ROW-013

APPENDIX A





Looking west along back side of car wash. Note MW-8 in center of photograph



Looking southwest from car wash across Highway 74

HELDERMAN PROPERTIES  
WADESBORO, NORTH CAROLINA

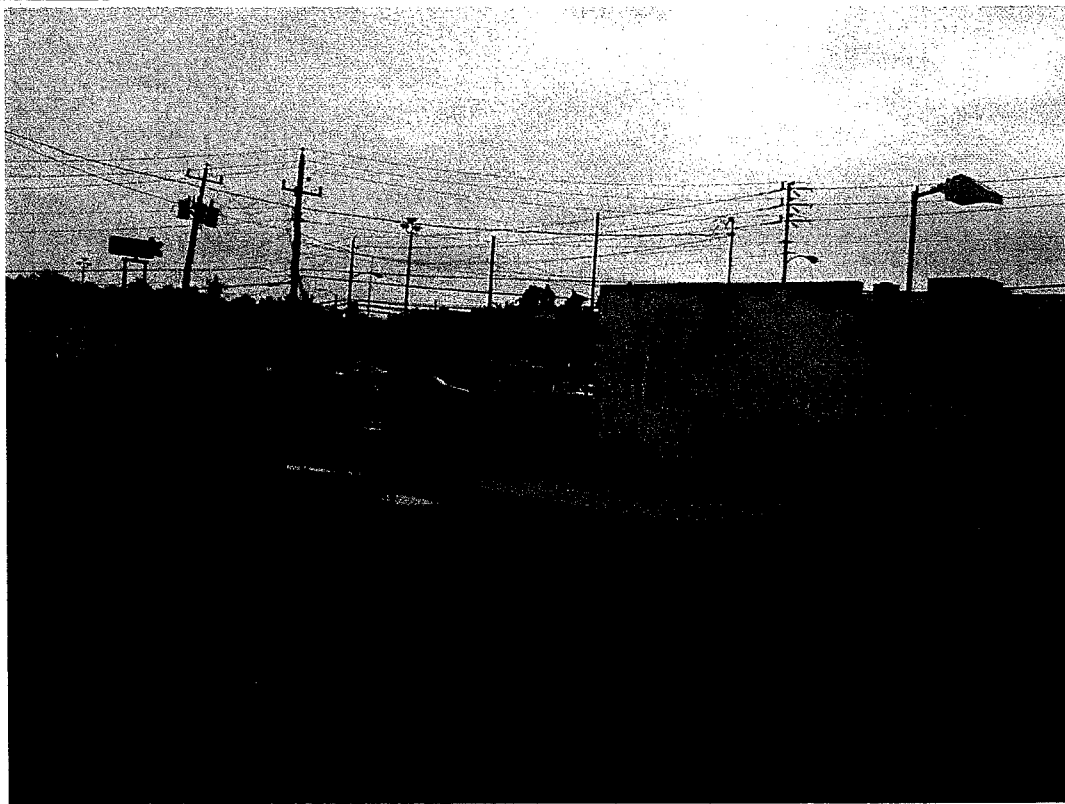
 **Hart & Hickman** 501 Minuet Lane-Suite 101  
Charlotte, North Carolina 28217  
A Professional Corporation (704)-586-0007 (704)-586-0373 fax

DATE: 11-12-03

SITE PHOTOGRAPHS

JOB NO: ROW-013

APPENDIX A



Looking southeast along back of former service station building



Looking south along east side of service station building.

Former UST  
Locations

HELDERMAN PROPERTIES  
WADESBORO, NORTH CAROLINA

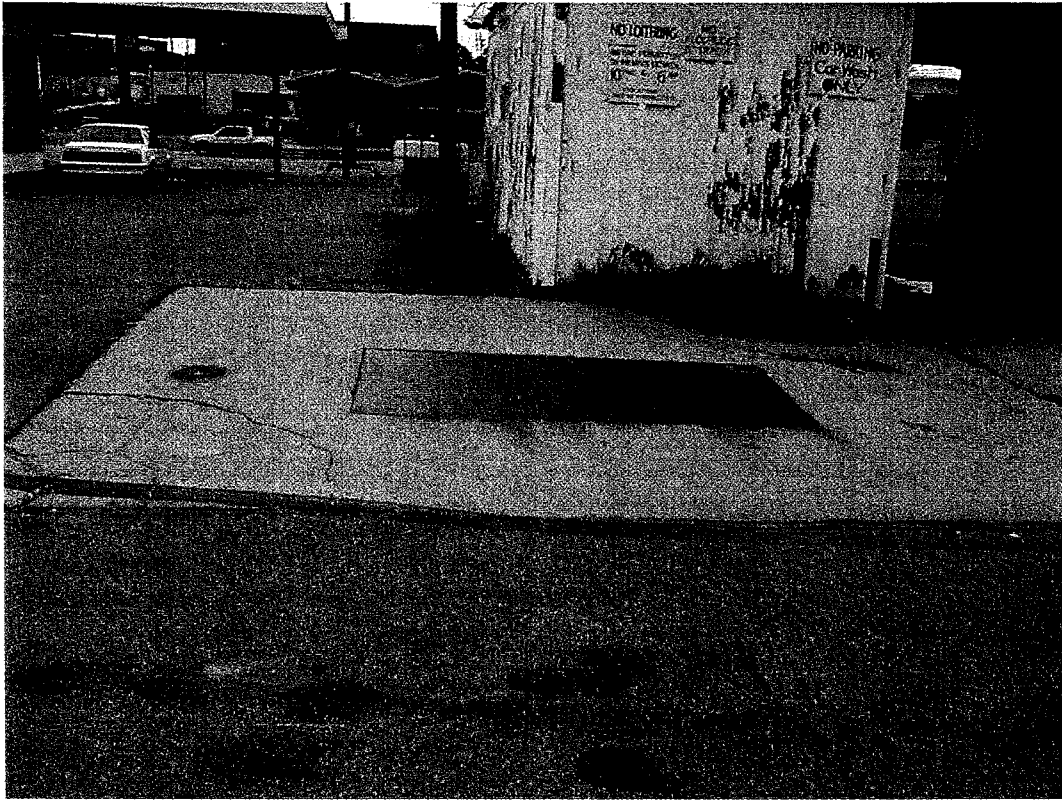
 **Hart & Hickman** 501 Minuet Lane-Suite 101  
Charlotte, North Carolina 28217  
A Professional Corporation (704)-586-0007 (704)-586-0373 fax

DATE: 11-12-03

SITE PHOTOGRAPHS

JOB NO: ROW-013

APPENDIX A



Oil/water separator at northeast corner of car wash.



Oil/Water separator. Service station in background

HELDERMAN PROPERTIES  
WADESBORO, NORTH CAROLINA

 **Hart & Hickman** 501 Minuet Lane-Suite 101  
Charlotte, North Carolina 28217  
A Professional Corporation (704)-586-0007 (704)-586-0373 fax

DATE: 11-13-03

SITE PHOTOGRAPHS

JOB NO: ROW-013

APPENDIX A

**Appendix B**

**Excerpts from SERVCO #00911 Comprehensive Site Assessment**

# Report

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## COMPREHENSIVE SITE ASSESSMENT

SERVCO # 00911  
WADESBORO, NORTH CAROLINA  
INCIDENT NUMBER: 22317

DECEMBER 2001

RECEIVED

JAN 02 2002

REG. OFFICE



WALLACE - LEE CONSULTANTS, L.L.C.  
Environmental Services

**COMPREHENSIVE SITE ASSESSMENT  
SERVICE DISTRIBUTING COMPANY, INC.  
302-304 CASWELL STREET  
WADESBORO, ANSON COUNTY, NORTH CAROLINA  
INCIDENT NUMBER: 22317**

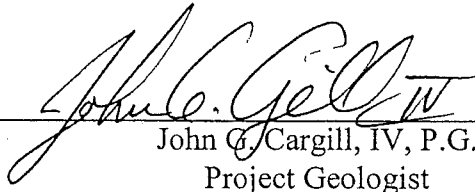
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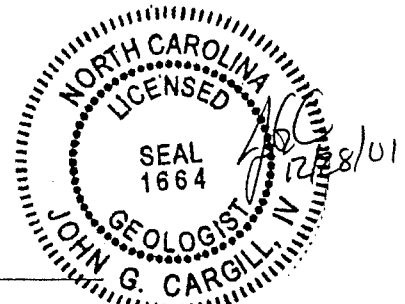
*SERVICE DISTRIBUTING COMPANY, INC.  
110 NORTH 2<sup>ND</sup> STREET  
ALBEMARLE, NORTH CAROLINA 28001*

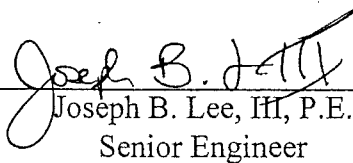
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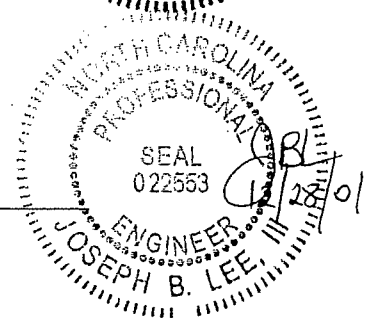
*WALLACE-LEE CONSULTANTS, L.L.C.  
6308 WRIGHTSVILLE AVENUE  
WILMINGTON, NC 28403*

*DECEMBER 28, 2001*

  
John G. Cargill, IV, P.G.  
Project Geologist



  
Joseph B. Lee, III, P.E.  
Senior Engineer



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- Appendix A Soil Boring Logs
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# **Executive Summary**

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Wallace-Lee Consultants, L.L.C. (WLC), on behalf of Service Distributing Company, Inc., has performed a Comprehensive Site Assessment (CSA) to address petroleum impact in soil and ground water at the SERVCO facility located at 302-304 Caswell Street in Wadesboro, Anson County, North Carolina. The CSA was prepared as required by a "Notice of Regulatory Requirements" (NORR) issued to Service Distributing Company, Inc. by the North Carolina Department of Environment and Natural Resources (NCDENR) on March 6, 2001. Based on previous assessments performed by WLC, soil and ground water have been impacted by releases from underground storage tank (UST) systems operated by Service Distributing Company, Inc. at the site. CSA activities included: the drilling of 32 soil borings; the construction of seven additional shallow-screened monitoring wells and one additional deeper-screened Type III monitoring well; the completion of two comprehensive ground-water sampling events; aquifer testing; grain size sampling; and completion of a CSA report.

Seven underground storage tanks (USTs) were operated by Service Distributing Company, Inc. at the site beginning in 1955. One 3,000-gallon diesel UST was closed by removal in 1988. The remainder of the USTs were closed by removal in June 2000, including: two 10,000-gallon gasoline USTs; one 10,000-gallon diesel UST; one 10,000-gallon kerosene UST; and two 7,500-gallon gasoline USTs.

Nineteen soil samples were collected during UST closure activities from below the USTs and below product lines and dispensers. The soil samples were submitted to a contract laboratory and analyzed for gasoline and diesel range total petroleum hydrocarbons (TPH). Gasoline range TPH was detected in eight of the soil samples collected from below the gasoline and kerosene USTs, and from below the gasoline product lines and dispensers at concentrations exceeding its "reportable concentration" of 10 milligrams per kilogram (mg/Kg) established by the NCDENR. Diesel range TPH was detected in five of the soil samples collected from below the diesel and kerosene USTs at concentrations exceeding its "reportable concentration" of 10 mg/Kg established by the NCDENR.

Between October and December 2000, WLC conducted Limited Site Assessment activities at the site, which included the drilling of four shallow-screened monitoring wells and one deeper-screened monitoring well at the site. Soil and ground-water samples were collected in accordance with NCDENR guidelines. Benzene, n-butylbenzene, sec-butylbenzene, ethylbenzene, isopropylbenzene, methylene chloride, naphthalene, n-propylbenzene, total xylenes, 2-methylnaphthalene, C5-C8 aliphatics, C9-C18 aliphatics and C9-C22 aromatics were detected in soil samples collected from soil borings drilled in the areas of the former gasoline, diesel and kerosene USTs and dispensers at concentrations which exceed their respective Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs) established by 15A NCAC 2L.

Lead, ethylene dibromide, chloroform, 1,2-dichloroethane, benzene, ethylbenzene, toluene, total xylenes, MTBE, naphthalene, C5-C8 aliphatics, C9-C18 aliphatics and C9-C22 aromatics were detected in ground-water samples collected from monitoring wells at concentrations exceeding the ground-water quality standards established by 15A NCAC 2L. Benzene and 1,2-dichloroethane were detected in ground-water samples at concentrations which exceed the Gross Contamination Levels for Groundwater (GCLs) established by 15A NCAC 2L. Lead, ethylene dibromide, chloroform, 1,2-dichloroethane and benzene were detected in deeper-screened monitoring well DW-1 at concentrations exceeding the ground-water quality standards established by 15A NCAC 2L.

Two water supply wells were documented by WLC at residences located within 1,000 feet of the "source area." According to Town of Wadesboro officials, the town's municipal water supply is available to the area where the water supply wells are located. In addition, each of the properties where the wells are located are currently connected to the municipal water supply. According to the owner of the two wells, the wells are used mainly for irrigation purposes and for washing cars. The owner did state that he occasionally takes a drink from the well.

Surface drainage in the immediate site area is generally toward the east in existing municipal storm sewer conveyances along the front (south-southwest) of the property and Caswell Street. Culpepper Creek, the closest surface water body, is located approximately 1,400 feet west of the site. Underground water supply and subsurface conduits associated with the former UST systems are located within the source area.

Between July 18 and July 20, 2001, WLC performed soil assessment activities at the site to determine the extent of impacted soil around the former UST systems. Twenty-two soil borings (GP-1 through GP-21 and GP-23) were advanced to the water table using direct push sampling techniques. Based on the analytical results of the soil samples submitted for laboratory analysis, additional soil borings were drilled. On October 23, 2001, ten additional soil borings (GP-24 through GP-32 and MW-9) were advanced using direct push sampling techniques.

Benzene, t-butylbenzene, ethylbenzene, naphthalene, n-propylbenzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total xylenes, MTBE, 2-methylnaphthalene, C5-C8 aliphatics and C9-C22 aromatics were detected in soil samples collected from the Geoprobe borings at concentrations exceeding their respective Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs) established by the NCDENR. C5-C8 aliphatics were detected in one soil sample at a concentration exceeding its Residential MSCC established by the NCDENR. C9-C22 aromatics were detected in four soil samples at concentrations exceeding its Residential MSCC. The lateral extent of petroleum impacted soil has not been determined. Additional assessment is possible north of the former UST excavation. However, site conditions inhibit additional soil sampling to the south and east of the former UST excavation.

Between July and October 2001, seven additional shallow-screened monitoring wells and one additional deeper-screened Type III monitoring well were constructed both onsite and offsite. Ground-water samples were collected from the monitoring wells in July and October 2001.

Benzene, toluene, ethylbenzene, xylenes, MTBE, IPE, EDB, naphthalene, chloroform, 1,2-dichloroethane, lead, C5-C8 aliphatics, C9-C18 aliphatics, and C9-C22 aromatics were detected in the ground water samples collected from onsite and offsite monitoring wells at concentrations exceeding the water quality standards established by 15A NCAC 2L in both July and October 2001. Benzene was detected in onsite monitoring wells MW-9 at a concentration exceeding its Gross Contamination Level (GCL) of 5,000 µg/L for ground water established by the NCDENR. Benzene was also detected in offsite monitoring well MW-5 at a concentration exceeding its GCL of 5,000 µg/L for ground water established by the NCDENR in July and October 2001. The lateral extent of petroleum impacted ground-water at the site has not yet been determined.

During drilling activities on July 20, 2001, WLC field staff measured free product in site monitoring wells MW-2 and MW-3 using an electric oil/water interface probe. WLC has recovered approximately 9.5 gallons of free product from monitoring well MW-2 by one hand bailing event and one Aggressive Fluid Vapor Recover (AFVR) event.

Based on the ground-water elevation data from September 6, 2001, July 25, 2001 and October 31, 2001, it appears shallow ground-water flow is toward the east-southeast in the western portion of the SERVCO site, and toward the north-northwest in the eastern portion of the SERVCO site. The average horizontal hydraulic gradient calculated across the site is approximately 0.025 feet per foot (ft/ft). Estimated hydraulic conductivities calculated from slug tests performed in site monitoring wells ranged from 0.74 feet per day (ft/day) and 1.08 ft/day. The estimated hydraulic conductivities calculated from grain size analyses are 0.16 ft/day and 2.30 ft/day. Using the lowest and highest estimated values of hydraulic conductivity (0.16 ft/day and 2.30 ft/day), the estimated seepage velocity for shallow ground water at the site is between 0.010 and 0.143 ft/day, or 3.65 and 52.46 feet per year (ft/yr).

WLC recommends an additional soil boring north of the "source area." Site conditions prohibit the drilling of additional soil borings to the south and east of the "source area." The lateral extent of petroleum hydrocarbon

impacted ground water has not been determined at the site. Based on the assessment results, it appears that there may be an offsite source of petroleum hydrocarbons in ground-water. WLC recommends the completion of additional soil assessment activities, evaluation of free product recovery activities and preparation of a CSA addendum.

# 1. Introduction

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Wallace-Lee Consultants, L.L.C. (WLC), on behalf of Service Distributing Company, Inc., has performed a Comprehensive Site Assessment (CSA) at the SERVCO #00911 facility located at 302-304 Caswell Street in Wadesboro, Anson County, North Carolina in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) regulations and guidelines. This report presents an overview of the site history, identifies potential receptors, describes assessment activities, presents analytical results, and provides conclusions and recommendations regarding the extent of petroleum hydrocarbons in the soil and ground water at the site. The Fayetteville regional office of the NCDENR issued a "Notice of Regulatory Requirements" (NORR) to Service Distributing Company, Inc. dated March 6, 2001 requiring a CSA. The CSA was performed in accordance with North Carolina Administrative Code Title 15A, Subchapter 2L (15A NCAC 2L), Section 0.0115 (c)(4) "Risk-Based Assessment and Corrective Action for Petroleum Underground Storage Tanks."

The location of the facility and general vicinity of the site are shown on a portion of the U.S. Geological Survey (USGS) topographic map, Wadesboro, N.C. Quadrangle, 7.5 minute series topographic map presented as Figure 1 (scale 1" = 2,000', contour interval = 10 feet). The location of the former underground storage tanks (UST) systems and other relevant site features are shown on Figure 2.

The scope-of-work included: an update of the site reconnaissance/receptor survey of the general site area; the drilling of thirty-two soil borings and collection of soil samples for field headspace screening using a flame ionization detector (FID) and for laboratory analysis; the installation of eight additional ground-water monitoring wells; ground-water sampling; slug testing to estimate the hydraulic conductivity of the surficial unconfined aquifer; and preparation of a CSA report.

## 2. Site History and Source Characterization

Information on all USTs owned and operated by Service Distributing Company, Inc. at the site is summarized below.

Tank No.	Installation Dates	Size in Gallons	Tank Dimensions	Last Contents	Status	Release Discovered
1	1955	10,000	17' x 10'	Kerosene	Removed 6/28/00	6/28/00
2	1977	10,000	17' x 10'	Gasoline	Removed 6/28/00	6/28/00
3	1955	7,500	20' x 8'	Gasoline	Removed 6/28/00	6/28/00
4	1955	7,500	20' x 8'	Gasoline	Removed 6/27/00	6/27/00
5	1977	10,000	26' x 8'	Gasoline	Removed 6/27/00	6/27/00
6	1955	10,000	26' x 8'	Diesel	Removed 6/27/00	6/27/00
7	Unknown	3,000	Unknown	Diesel	Removed - 1988	--

A 3,000-gallon diesel UST was removed from the site in 1988. According to Service Distributing Company, Inc. personnel, the UST was located west of the 10,000-gallon diesel UST shown on Figure 2. A soil assessment and closure report were not required for USTs removed prior to December 22, 1988.

On June 27 and 28, 2000, six USTs, including one 10,000-gallon diesel UST, two 10,000-gallon gasoline USTs, two 7,500-gallon gasoline USTs and one 10,000-gallon kerosene UST were excavated and removed by WLC. The USTs were located in a common excavation located east and northeast of the former facility building. WLC collected soil samples from the UST systems for closure requirements.

Soil samples were collected from below each UST and below the gasoline product lines and dispensers for closure requirements. Soil samples were not collected from below the diesel and kerosene product lines and dispensers because they were located above the USTs. Soil samples were collected from below the USTs at depths between 13 and 16 feet below the ground surface (BGS) using the excavator bucket. Soil samples were collected from below the gasoline product lines and dispensers at depths of approximately 4 to 6 feet BGS using stainless steel hand auger equipment. Soil samples collected from below the gasoline USTs, product lines and dispensers were analyzed for gasoline range total petroleum hydrocarbons (TPHs) by SW-846 Method 8015 with sample preparation by Method 5030. Soil samples collected from below diesel and kerosene USTs were analyzed for gasoline and diesel range TPH by SW-846 Method 8015 with sample preparation by Methods 5030 and 3550, respectively. Soil sample locations and analytical results are shown on Figure 3.

Gasoline range TPH were detected in eight of the soil samples collected from below the gasoline and kerosene USTs at concentrations exceeding its "reportable concentration" of 10 milligrams per kilogram (mg/Kg) established by the NCDENR. The concentrations ranged from 14.9 mg/Kg to 892 mg/Kg. Diesel range TPH were detected in five of the soil samples collected from below the diesel and kerosene USTs at concentrations exceeding its "reportable concentration" of 10 mg/Kg established by the NCDENR. The concentrations ranged from 57 mg/Kg to 1,710 mg/Kg.

Gasoline range TPH were detected in three of the soil samples collected from below the gasoline product lines and dispensers at concentrations exceeding its "reportable concentration" of 10 mg/Kg established by the NCDENR. The concentrations ranged from 32.6 mg/Kg to 413 mg/Kg.

The results of the assessment activities performed by WLC are summarized in the *Underground Storage Tank Closure Report*, prepared by WLC, and submitted to the Fayetteville regional office of the NCDENR in August 2000. Based on the results of UST closure activities, the NCDENR issued a NORR to Service Distributing Company, Inc. on August 28, 2000 requiring additional assessment activities and preparation of a Limited Site Assessment (LSA) report.

The scope-of-work for the LSA included: a site reconnaissance/receptor survey of the general site area; the drilling of five soil borings and collection of soil samples to document site lithology, for field screening using a FID and for laboratory analysis; the installation of five ground-water monitoring wells; and ground-water sampling.

On October 16, 2000, three soil borings (MW-1, MW-2 and MW-3) were drilled at the site by South Atlantic Environmental Drilling and Construction Company (SAEDACCO) using a drill rig and hollow stem auger equipment. On November 27 and 28, 2000, two additional soil borings (MW-4 and DW-1) were drilled at the site by SAEDACCO using a drill rig, hollow stem auger equipment, and mud rotary equipment. WLC monitored all drilling activities and collected soil samples to document lithology, for field screening using a FID, and for possible laboratory analysis. Soil samples from soil borings MW-4 and DW-1 were not submitted for analysis.

Benzene, n-butylbenzene, sec-butylbenzene, ethylbenzene, isopropylbenzene, methylene chloride, naphthalene, n-propylbenzene, total xylenes, 2-methylnaphthalene, C5-C8 aliphatics, C9-C18 aliphatics and C9-C22 aromatics were detected in soil samples collected during LSA activities at concentrations which exceed their respective Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs) established by 15A NCAC 2L. Soil sample locations and analytical results are shown on Figure 4.

Shallow-screened ground-water monitoring wells were constructed at boring locations MW-1, MW-2, MW-3 and MW-4. A deeper-screened type III ground-water monitoring well was constructed at boring location DW-1. Ground-water samples were collected from monitoring wells MW-1, MW-2 and MW-3 on October 24, 2000. Based on the analytical results of the ground-water samples, monitoring wells MW-4 and DW-1 were installed. Ground-water samples were collected from monitoring wells MW-4 and DW-1 on December 1, 2000. Prior to collecting ground-water samples from the monitoring wells, the depth to ground water was measured at each well location relative to the top of casing (TOC) elevation. The top of casing elevations were surveyed for vertical control.

Lead, ethylene dibromide, chloroform, 1,2-dichloroethane, benzene, ethylbenzene, toluene, total xylenes, MTBE, naphthalene, C5-C8 aliphatics, C9-C18 aliphatics and C9-C22 aromatics were detected in ground-water samples collected from monitoring wells at concentrations exceeding the ground-water quality standards established by 15A NCAC 2L. Benzene and 1,2-dichloroethane were detected in ground-water samples at concentrations which exceed the Gross Contamination Levels for Groundwater (GCLs) established by 15A NCAC 2L. Lead, ethylene dibromide, chloroform, 1,2-dichloroethane and benzene were detected in deeper-screened monitoring well DW-1 at concentrations exceeding the ground-water quality standards established by 15A NCAC 2L. Ground-water analytical results from LSA activities are shown on Figure 5.

The results of the assessment activities performed by WLC are summarized in the *Limited Site Assessment* report, prepared by WLC, and submitted to the Fayetteville regional office of the NCDENR in January 2001. Based on the results of LSA, the NCDENR issued a NORR to Service Distributing Company, Inc. on March 6, 2001 requiring a CSA.

### **3. Potential Receptors and Migration Pathways**

WLC performed a reconnaissance of the area within 1,500 feet of the site, interviewed area property owners, interviewed Town of Wadesboro officials, and researched records at the Anson County Tax Office during LSA activities between October and December 2000. Additional reconnaissance was performed by WLC between July and November 2001 to update receptor information.

Two water supply wells were documented by WLC at residences located within 1,500 feet of the "source area." According to Town of Wadesboro officials, the town's municipal water supply is available to the area where the water supply wells are located. In addition, each of the properties where the wells are located are currently connected to the municipal water supply. The names of the owners and addresses of the properties where water wells were documented are listed below.

<b>Block &amp; Parcel #</b>	<b>Owner Name</b>	<b>Well Location Address</b>
76-4227	McBride, J.E. Jr. & Lucy	508 N. Rutheford Street Wadesboro, NC 28170
76-6222	McBride, J.E. Jr. & Lucy	509 N. Green Street Wadesboro, NC 28170

Notes:

Tax parcel numbers were obtained by WLC from the Anson County Tax Assessors Office, map # 6474-11, 12.

A telephone conversation with the owner of the two wells, Mr. Ed McBride, indicated that the private water supply wells were used mainly for irrigation purposes and washing cars. Mr. McBride stated that he occasionally drinks from the wells while working outdoors. The nearest of the two wells is located approximately 950 feet north-northeast of the site. The locations of the water supply wells are shown on Figure 4.

According to the Town of Wadesboro Water Department, municipal water is obtained from City Pond, which is a dammed portion of the North Fork of Jones Creek. City pond is located approximately 3 miles south-southwest of the SERVCO facility.

Surface drainage in the immediate site area is generally toward the east in existing municipal storm sewer conveyances along the south side of the site. The closest surface water body is Culpepper Creek, which is located approximately 1,400 feet west of the site. Underground water supply and subsurface conduits associated with the former UST systems are located within the source area.

According to the Wadesboro Town Manager and Town of Wadesboro records, the current zoning of the site is central business. The site is currently being used for car washing and detailing. Adjacent properties are zoned general business, central business and residential/office, and are used for commercial purposes. Properties within 1,500 feet of the site are zoned residential, residential/office, general business and central business, and are utilized for commercial and residential purposes. The nearest residential property is located approximately 210 feet north of the "source area."

The names and addresses of the adjacent property owners and zoning status of the properties are listed below.

Block & Parcel #	Owner Name	Owner Address	Zoning
SITE 75-0360	Helderman, Kenneth R. Service Oil Company #1 00911	P.O. Box 310 Albemarle, NC 28001	Central Business
SITE 65-9374	Helderman, Kenneth R. Service Oil Company #1 00911	P.O. Box 310 Albemarle, NC 28001	Central Business
75-0415	Granite Development LTD.	450 Airport Rd, Ste 200 Mount Airy, NC 27030	General Business
SITE 75-1422	Service Oil Distributing Company #2	P.O. Box 310 Albemarle, NC 28001	Residential/ Office
75-3450	Plank Road Realty, Inc.	202 E. Wade Street Wadesboro, NC 28170	Residential/ Central Business
75-2366	Huntley, Robert W. & Evalyn A.	510 W. Wade Street Wadesboro, NC 28170	Central Business
75-2248	Huntley, R.W. & Evalyn	P.O. Box 369 Wadesboro, NC 28170	Central Business
75-2030	Taylor, Elizabeth et al.	210 Park Avenue Wadesboro, NC 28170	Central Business
75-0110	Taylor, Elizabeth & Ann Showell	210 Park Avenue Wadesboro, NC 28170	Central Business
65-9019	Deese, Bennett W.	Rt. 4 Box 77 Wadesboro, NC 28170	Central Business
65-7147	Huntley Chevrolet-Geo-Buick	P.O. Box 760 Wadesboro, NC 28170	Central Business
65-7343	Huntley Chevrolet-Geo-Buick	P.O. Box 760 Wadesboro, NC 28170	Central Business
65-6486	Pinkston, Pauline heirs	109 Windyrush Lane Cary, NC 27511	Central Business

Notes:

Tax parcel numbers were obtained by WLC from the Anson County Tax Assessors Office, map # 6474.

The adjacent properties are shown on Figure 6.



## **4. Soils Investigation**

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### **4.1 Regional Geology**

According to the Geologic Map of North Carolina (1985), the site is located in the Triassic aged Wadesboro Basin of the eastern Piedmont Physiographic Province. Bedrock beneath the site consists primarily of sandstone and mudstone.

### **4.2 Site Soils and Geology**

Based on soil borings drilled by WLC, the shallow lithology at the site can be described as mottled brown red and tan silty sands and sandy silts with varying amounts of clay to a depth of approximately 53 or 54 feet BGS, where a quartz sandstone bedrock was encountered. The quartz sandstone bedrock was encountered to a depth of approximately 82 feet BGS during the drilling of monitoring well DW-2. Soil boring logs are included in Appendix A.

Geologic cross sections and transects are shown on Figures 7, 8 and 9. Soil boring logs for all soil borings and monitoring wells drilled to date are presented in Appendix A.

Soil samples were collected from soil borings MW-9 and MW-10 and submitted to a subcontract laboratory for grain size analysis. Soil samples were collected from a depth of approximately 25 to 27 feet BGS in boring MW-9, and approximately 19 to 21 feet BGS in MW-10. Grain size analyses were conducted in accordance with ASTM test procedure D-422 "Standard Test Method for Particle-Size Analysis of Soils." The soil sample collected from MW-9 was described as "silty fine to medium sand with traces of clay." The soil sample collected from MW-10 was describes as "clayey silt with traces of fine sand." Grain size analyses are consistent with field observations. The grain size distribution curves for each sample are included as Appendix B.

### **4.3 Soil Assessment Activities**

Between July 18 and July 20, 2001, WLC performed soil assessment activities at the site to determine the extent of impacted soil around the former UST systems. Twenty-two soil borings (GP-1 through GP-21 and GP-23) were advanced by SAEDACCO using a Geoprobe® rig and direct push sampling techniques. In general, the borings were advanced to the water table, except at GP-22, where the probe was obstructed at a depth of approximately 2 to 3 feet BGS. Samples were collected continuously with depth. A WLC geologist monitored the probing activities and collected soil samples to document lithology, for field headspace screening using a FID, and for laboratory analysis. Based on the analytical results of the soil samples submitted for laboratory analysis, additional soil boring were drilled. On October 23, 2001, ten additional soil borings (GP-24 through GP-32 and MW-9) were drilled by SAEDACCO using a Geoprobe® rig and direct push sampling techniques, as described above. The locations of all soil borings drilled to date are shown on Figure 2.

A portion of each soil sample was placed in a new resealable plastic bag and placed in a cooler with ice for possible laboratory analysis. A second portion of each soil sample was placed in a new resealable plastic bag which remained sealed for approximately 15 minutes and exposed to sunlight to allow any VOCs present in the sample to volatilize in the headspace of the bag. The FID probe was inserted into the headspace of the bag and the highest instrument reading was recorded. The FID screening results are shown on the boring logs presented in Appendix A. Drill cuttings from borings drilled on the SERVCO property were spread onsite.

Before sampling activities and between sample locations, the drill tooling and augers were steam cleaned, and the split spoon sampler was cleaned with a non-phosphate detergent and a potable water rinse. Drill cuttings from borings drilled offsite were containerized in NCDOT approved 55-gallon metal drums, and subsequently

transported to a permitted disposal facility.

Based on the FID screening results, soil samples were selected for laboratory analysis. The soil samples selected for analysis were placed in laboratory supplied containers, labeled accordingly, logged on to a chain of custody form, and placed into a cooler with ice for shipment to the laboratory. The soil samples collected from below the gasoline USTs, product lines and dispensers were analyzed for VOCs by SW-846 Method 8260 including MTBE and isopropyl ether (IPE), and volatile petroleum hydrocarbons (VPH) by the Massachusetts Department of Environmental Protection (MADEP) method. The soil samples collected from soil borings drilled around the diesel and kerosene USTs, product lines and dispensers were analyzed for: volatile organic compounds (VOCs) by SW-846 Method 8260; semivolatile organic compounds (SVOCs) by SW-846 Method 8270; and VPH and extractable petroleum hydrocarbons (EPH) by the MADEP methods.

#### ***4.4 Soil Analytical Results***

Benzene, t-butylbenzene, ethylbenzene, naphthalene, n-propylbenzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total xylenes, MTBE, 2-methylnaphthalene, C5-C8 aliphatics and C9-C22 aromatics were detected in soil samples at concentrations exceeding their respective Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs) established by the NCDENR. C5-C8 aliphatics were detected in one soil sample at a concentration exceeding its Residential MSCC. C9-C22 aromatics were detected in four soil samples at concentrations exceeding its Residential MSCC established by the NCDENR. The analytical results of soil samples collected during CSA activities are summarized in Tables 1, 2 and 3, and are shown on Figures 10 and 11. Soil sample locations and analytical results from UST closure activities and LSA activities are shown on Figures 3 and 4. The soil laboratory reports and chain-of-custody forms for soil samples collected during CSA activities are included in Appendix C.

#### ***4.5 Extent of Soil Impact***

Gasoline range TPH was detected in soil samples collected during UST closure activities at concentrations exceeding the "reportable concentrations" established by the NCDENR. Soil samples were collected from below the USTs from depths ranging from approximately 13 to 16 feet BGS. Gasoline range TPH were detected in three of the soil samples collected from below the former dispensers and product lines at depths of between 4 and 6 feet BGS. Soil sample locations and analytical results from UST closure activities are shown on Figure 3.

Petroleum constituents were detected in soil samples collected from soil borings at depths ranging from 2 feet BGS to 21 feet BGS during LSA and CSA activities at concentrations exceeding the Soil-to-Groundwater MSCCs established by the NCDENR. Naphthalene and C9-C22 aromatics were detected in the soil sample collected from boring GP-14 from a depth of 2 to 4 feet BGS at concentrations exceeding their respective Soil-to-Groundwater MSCCs. Benzene was detected in the soil sample collected from boring GP-31 from a depth of 4 to 6 feet BGS at a concentration exceeding its Soil-to-Groundwater MSCC. The remainder of petroleum constituents detected in soil samples at concentrations exceeding the Soil-to-Groundwater MSCCs were collected from depths ranging from 10 to 20 feet BGS.

C5-C8 aliphatics were detected in the soil sample collected from boring GP-23 from a depth of 12 to 14 feet BGS at a concentration exceeding its Residential MSCC established by the NCDENR. C9-C22 aromatics were detected in soil samples collected from soil borings MW-2 (9-11'), GP-3 (14-16'), GP-16 (10-12'), GP-18 (14-16') and GP-23 (12-14') at concentrations exceeding its Residential MSCC established by the NCDENR.

Review of historic ground-water elevations in the onsite ground-water monitoring wells indicates that the highest water table occurred in October of 2000, at approximately 16 feet BGS in monitoring well MW-1. Monitoring well MW-1 was drilled through a former UST excavation, which was backfilled with fill sand, which has a higher permeability than the native soil and may be a recharge area where water mounds after heavy rain events. Ground-water elevations within the source area have ranged between 23 and 25 feet BGS during CSA activities. The lateral

extent of petroleum impacted soil has not yet been determined. Soil sample locations and analytical results from LSA and CSA activities are shown on Figures 4, 10 and 11, respectively. The inferred lateral extent of petroleum impacted soil at concentrations exceeding the Soil-to-Groundwater MSCCs is shown on Figure 12.

## **5. Ground-Water Investigation**

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### **5.1 Ground-Water Monitoring Well Installation**

On July 18 and 19, 2001, five ground-water monitoring wells (MW-5, MW-6, MW-7, MW-8 and DW-2) were drilled by SAEDACCO at the site to determine the extent of impacted ground water. Based on ground-water analytical results from these monitoring wells, three additional monitoring wells (MW-9, MW-10 and MW-11) were drilled by SAEDACCO on October 23 and 24, 2001. Monitoring wells MW-6 and MW-7 were drilled on properties south and southeast of the SERVCO property. A North Carolina Department of Transportation (NCDOT) Encroachment Agreement was obtained, and NCDENR well construction permits were obtained prior to drilling the wells. Monitoring wells MW-5, MW-10 and MW-11 were drilled on the adjacent property east of the SERVCO property (Hardees property). The access agreements, well construction permits and DOT Encroachment Agreement are included in Appendix D.

The shallow-screened monitoring wells were constructed using 10 feet of 2-inch diameter Schedule 40 Polyvinyl Chloride (PVC), 0.010-inch slot size well screen, and an appropriate length of 2-inch diameter Schedule 40 PVC well casing. At each well location a select filter sand was poured in the annular space of the borehole to a depth of approximately 1 to 2 feet above the top of the well screen. A bentonite seal, approximately 1 to 2 feet thick, was placed above the filter sand. The remaining annular space was filled using a cement and bentonite slurry. The monitoring wells were finished using flush mounted steel manways set in a concrete pad around the wellhead. A water tight cap and lock were placed on the well. The locations of all site monitoring wells are shown on Figure 2. Well Construction Records (NCDENR Form GW-1) for all site monitoring wells are included in Appendix E.

The additional Type III deeper-screened monitoring well (DW-2) was constructed by installing a 6-inch diameter Schedule 40 PVC outer casing to a depth of approximately 58 feet BGS (into quartz sandstone bedrock). The annular space of the borehole was filled with a portland cement grout to the ground surface. After allowing the grout to cure overnight, SAEDACCO drilled through the outer casing to a depth of approximately 82 feet BGS (approximately 14 feet below the bottom of the outer casing) using mud rotary drilling equipment. A water bearing fracture was encountered at a depth of approximately 79 feet BGS. The well was constructed using 5 feet of 2-inch diameter, 0.010-inch slot size Schedule 40 PVC well screen and an appropriate length of PVC well casing. The well was finished as described above for the shallow-screened wells.

The monitoring wells were developed using a submersible pump. During well development, indicator parameters of temperature, pH and conductivity were monitored and recorded. The turbidity of the developed water was visually noted. Well development was continued until the indicator parameters documented stabilized ground-water conditions (less than 15 percent change between two consecutive temperature and specific conductance measurements, and a change of 0.2 standard pH units or less between two consecutive measurements), and the water was relatively free of suspended sediments. Between well locations, the well development pump and tubing was cleaned using a non-phosphate detergent, and rinsed with potable water. The development water was containerized in NCDOT approved 55-gallon metal drums, and subsequently transported to a permitted disposal facility.

### **5.2 Ground-Water Sampling**

Prior to sampling, each monitoring well was purged using a new disposable polyethylene bailer. The wells were purged of a minimum of three well volumes, and until stabilizing ground-water conditions were indicated by consecutive field measurements of pH, conductivity, and temperature recorded regularly during purging activities. If the well purged dry prior to removing three well volumes, the well was permitted to stabilize and a ground-water sample was collected within 24 hours of purging.

Ground-water samples were collected from monitoring wells MW-1, MW-4 through MW-8, DW-1 and DW-2 on July 25, 2001. Based on the ground-water analytical results, monitoring wells MW-9, MW-10 and MW-11 were installed. Ground-water samples were collected from all site monitoring wells (MW-1, MW-4 through MW-11, DW-1 and DW-2) on October 31, 2001. One duplicate ground-water sample was collected during each ground-water sampling event for quality control purposes. Ground-water samples were not collected from monitoring wells MW-2 and MW-3 during either ground-water sampling event due to the presence of free product in the wells. The ground-water samples were analyzed for: purgeable halocarbons by EPA Method 601 including EDB; purgeable aromatics including MTBE, IPE, and xylenes by EPA Method 602; base/neutral/acid extractables by EPA Method 625 including identification of the 10 highest non-target analytes; alkanes and aromatic compounds by MADEP VPH and EPH methods; and lead by Method 239.2 with sample preparation by EPA Method 3030C.

### ***5.3 Ground-Water Analytical Results***

Benzene, toluene, ethylbenzene, xylenes, MTBE, IPE, EDB, naphthalene, chloroform, 1,2-dichloroethane, lead, C5-C8 aliphatics, C9-C18 aliphatics, and C9-C22 aromatics were detected in the ground water samples collected from onsite and offsite monitoring wells at concentrations exceeding the water quality standards established by 15A NCAC 2L in both July and October 2001. Benzene was detected in onsite monitoring wells MW-9 at a concentration exceeding its Gross Contamination Level (GCL) of 5,000 µg/L for ground water established by the NCDENR. Benzene was detected in offsite monitoring well MW-5 at a concentration exceeding its GCL of 5,000 µg/L for ground water established by the NCDENR in July and October 2001, and in the MW-5 duplicate sample collected in October 2001. Ground-water analytical results for the July and October 2001 sampling events are summarized in Tables 4, 5 and 6, and are shown on Figure 13. Copies of the analytical laboratory reports and chain of custody forms are provided in Appendix F.

### ***5.4 Extent of Petroleum Impacted Ground Water***

A summary of the ground-water analytical results from CSA activities is presented in Tables 4, 5 and 6. A summary of the ground-water analytical results from LSA activities is shown on Figure 5. Isoconcentration contour maps for benzene, toluene, ethylbenzene, total xylenes, MTBE, IPE, naphthalene, C5-C8 aliphatics, C9-C18 aliphatics and C9-C22 aromatics are presented as Figures 14 through 23. The isoconcentration maps were created using the October 31, 2001 ground-water analytical results. The lateral extent of petroleum impacted ground-water at the site has not yet been determined.

### ***5.5 Free Product Recovery***

During drilling activities on July 20, 2001, WLC field staff measured free product in site monitoring wells MW-2 and MW-3 using an electric oil/water interface probe. Approximately 0.31 feet of free product was measured in monitoring well MW-2. Approximately 0.01 feet of free product was measured in monitoring well MW-3. On September 6, 2001, Harvest Environmental Services, Inc. (Harvest) performed an Aggressive Fluid Vapor Recovery (AFVR) event on monitoring well MW-2. WLC personnel monitored the AFVR activities and collected measurements of vacuum pressure, velocity, temperature and relative humidity of the emissions from the vacuum truck. Due to complications with the vacuum truck, the product recovery event was terminated after approximately 4.5 hours. A material manifest documenting liquids disposal of ground water and free product for the event, as well as calculations of free product recovered and released in vacuum truck emissions are included in Appendix G. Free product measurements and recovery activities to date are summarized in Table 7. WLC has recovered approximately 9.5 gallons of free product from monitoring well MW-2 to date.

### ***5.6 Site Hydrogeology***

The results of field testing performed by WLC to estimate ground-water flow direction, hydraulic gradient, hydraulic conductivity, and ground-water seepage velocity are summarized below.

### 5.6.1 Ground-Water Flow Direction and Hydraulic Gradient

Moist soil conditions were encountered at a depth of approximately 26 to 30 feet BGS in soil borings drilled at the site on July 18 and 19 and October 23 and 24, 2001, with the exception of offsite monitoring wells MW-6 and MW-7, where saturated soil conditions were encountered at a depth of approximately 8 and 12 feet on July 18 and 19, 2001. Most boreholes were left open for several hours to allow ground water to stabilize before monitoring wells were constructed. The monitoring wells were surveyed for vertical control after their construction. The elevation of the top of casing of each well (reference point) was referenced to an assumed elevation of 100.00 feet at the reference point of well MW-1.

The depth to ground-water was measured in all onsite and offsite monitoring wells on July 25, 2001, September 6, 2001 and October 31, 2001. The depth to ground water in the shallow-screened monitoring wells ranged from 5.26 to 23.12 feet BGS on July 25, 2001; from 7.26 to 23.78 feet BGS on September 6, 2001; and from 8.50 to 24.71 feet BGS on October 31, 2001. The depth to ground water in the deeper screened Type III monitoring wells were measured at 23.90 and 24.62 feet BGS on July 25, 2001, and 24.72 and 24.84 feet BGS on October 31, 2001. Based on the ground-water elevation data from September 6, 2001, July 25, 2001 and October 31, 2001, it appears shallow ground-water flows toward the east-southeast across the western portion of the SERVCO site, and toward the north-northwest across the eastern portion of the SERVCO site. Horizontal hydraulic gradients calculated across the site range from 0.017 feet per foot (ft/ft) to 0.033 ft/ft, with an average horizontal hydraulic gradient of approximately 0.025 ft/ft.

The vertical hydraulic gradient was calculated between monitoring wells MW-3 and DW-1, located approximately 13 feet apart using the December 1, 2000 (LSA), July 25, 2001 (phase I CSA) and October 31, 2001 (phase II CSA) data, and between wells MW-3 and DW-2, located approximately 19 feet apart using the July 25, 2001 and October 31, 2001 data. Free product has been measured at well MW-3 since July 20, 2001. However, only a skim of product exists in the well. The water level measured for well MW-3 is sufficient for the vertical gradient calculations. The estimated vertical hydraulic gradients between well pair MW-3 and DW-1 are 0.022 ft/ft downward, 0.092 ft/ft downward and 0.060 ft/ft downward, respectively. The estimated vertical hydraulic gradients between well pair MW-3 and DW-2 are 0.045 ft/ft downward and 0.040 ft/ft downward, respectively.

Historical depth to ground-water measurements and calculated ground-water elevations are presented in Table 8. Ground-water elevation contour maps, prepared using the July 25, September 6 and October 31, 2001 ground-water elevation data, are presented as Figures 24, 25 and 26.

### 5.6.2 Hydraulic Conductivity

Rising head slug tests were performed in shallow-screened monitoring wells MW-4 and MW-8 on July 27, 2001. The tests were conducted in accordance with the American Society for Testing and Materials (ASTM) D 4044-9 "Standard Test Method for (Field Procedure) Instantaneous Change in Head (Slug Tests) for Determining Hydraulic Properties of Aquifers." The tests were conducted by first measuring the depth to water in the well, and then injecting a solid slug below the water table. After the water level in the well was allowed to stabilize, the slug was removed and the rate of change in water level was measured using a Troll 4000™ pressure transducer and data logger.

The slug test data was evaluated using the *AQTESOLV for Windows* program (Version 3.01) to estimate hydraulic conductivity. The analytical method used was the Bouwer and Rice Unconfined Aquifer Slug Test (Bouwer and Rice, 1976, update 1989). An assumption made in the program was the saturated thickness of the shallow aquifer (approximately 33 feet). The hydraulic conductivity was estimated graphically for each monitoring well. The estimated hydraulic conductivity from the slug test performed in monitoring well MW-4 was 1.08 feet per day (ft/day). The average estimated hydraulic conductivity from the slug tests performed in monitoring well MW-8 was 0.74 ft/day. The hydraulic conductivity estimates fall within the range of hydraulic conductivities for clayey

sands and sandy silts (Fetter, 1994). Slug test data and results are included as Appendix G.

### 5.6.3 Grain Size Analysis

The grain size distribution data from the sieve/hydrometer tests performed on soil samples collected from borings MW-9 and MW-10 were used to derive estimates of hydraulic conductivity. The Shepherd method (Fetter, 1994) was used to estimate the hydraulic conductivity for the soil samples. Shepherd found that the relationship between hydraulic conductivity can be expressed by the general equation:

$$K = C(D_{50})^j,$$

- Where: K = Hydraulic Conductivity, in ft/day;  
 C = Shape Factor;  
 D<sub>50</sub> = Mean Grain Size, in millimeters (mm); and  
 j = Textural Maturity of the Sediments.

Values for C and j are as follows:

SOIL DESCRIPTION	C	j
Glass Spheres	40,000	2.0
Dune Deposits	5,000	1.85
Beach Deposits	1,600	1.75
Channel Deposits	450	1.65
Consolidated Sediments	100	1.5

The shape factor and textural maturity of the sediments has not been determined. However, it is a reasonable assumption that the sediments are texturally immature, considering the overall grain size distribution and the geographic location of the site in the Piedmont Physiographic Province of North Carolina. Therefore, the shape factor and textural maturity for the least texturally mature deposits of 100 and 1.5, respectively, are selected for use in the equation.

The D<sub>50</sub> value obtained from the grain size distribution graphs for soil sample MW-9 (25'-27') and soil sample MW-10 (19'-21') are 0.081 mm and 0.014 mm, respectively. Substituting the values of C, j, and D<sub>50</sub>, the Shepherd equation yields a hydraulic conductivity of 2.30 ft/day for MW-9, and a hydraulic conductivity of 0.16 ft/day for MW-10. The estimations of hydraulic conductivities fall within the range of hydraulic conductivities for clayey sands and sandy silts (Fetter, 1994).

### 5.6.4 Ground-Water Seepage Velocity

The estimated ground-water seepage velocity in the shallow unconfined aquifer was calculated by modifying Darcy's Law using the following expression (Fetter, 1994):

$$v = KI/n_e,$$

where:  $v$  = velocity of ground water, ft/day  
 $K$  = horizontal hydraulic conductivity, ft/day  
 $I$  = average horizontal hydraulic gradient, ft/ft  
 $n_e$  = effective porosity

The shallow ground-water seepage velocity at the site was estimated using a calculated shallow horizontal hydraulic gradient through the source area of 0.025 ft/ft. According to Peyton et al. (1986), the effective porosity is assumed to be the same as the porosity in unconsolidated sediments. Therefore, an effective porosity of 40 percent was used for the soil aquifer material, which consists mainly of poorly sorted silts and fine sands (Fetter, 1994). Using the lowest and highest estimated values of hydraulic conductivity described above (0.16 ft/day and 2.30 ft/day), the estimated seepage velocity for shallow ground water at the site is between approximately 0.010 and 0.143 ft/day, or 3.65 and 52.46 feet per year (ft/yr).



# Conclusions

field observations by WLC and analytical results of soil and ground-water samples collected during the following conclusions regarding soil and ground-water impact are presented:

Water supply wells were documented by WLC at residences located within 1,500 feet of the "source area." The closest water supply well is located approximately 950 feet northeast of the "source area." According to Wadesboro officials the town's municipal water supply is available to the area where the water supply wells are located. Both of the properties where the wells are located are currently connected to the municipal water supply; however, according to the owner of the properties where the wells are located, the water supply wells are used mainly for irrigation purposes and for washing cars. The owner stated that he occasionally drinks water from the wells while working outdoors.

Based on analytical results of soil samples collected during UST Closure, LSA and CSA activities at the site, petroleum impacted soil appears to be present at the site mainly between approximately 2 feet BGS and the water table below the former USTs, product lines, and dispensers. The lateral extent of petroleum impacted soil to the south and east has not been determined. WLC can advance an additional soil boring to the north of the source area; however, Caswell Street (US Highway 74) and Rutherford Street prohibit additional drilling activities to determine the lateral extent of soil impact to the south and east of the source area.

Free product has been documented in onsite monitoring wells MW-2 and MW-3 since July 20, 2001. To date, approximately 9.5 gallons of free product have been recovered from the wells by manual bailing and AFVR.

Gasoline, toluene, ethylbenzene, xylenes, MTBE, IPE, EDB, naphthalene, chloroform, 1,2-dichloroethane, lead, aliphatics, C9-C18 aliphatics, and C9-C22 aromatics were detected in the ground-water samples collected from 11 offsite monitoring wells at concentrations exceeding the water quality standards established by CAC 2L in both July and October 2001. Benzene was detected in monitoring wells MW-5 and MW-9 at concentrations exceeding its Gross Contamination Level (GCL) for ground water established by the NCDENR. Based on analytical results of ground-water samples collected during CSA activities, it appears that the lateral extent of petroleum impacted ground water at the site has not yet been determined.

Based on ground-water analytical data, it appears that there are offsite sources of petroleum hydrocarbons in the ground water.

Based on the ground-water elevation data for September 6, 2001, July 25, 2001 and October 31, 2001, it appears that the ground-water flow is toward the east-southeast in the western portion of the SERVCO site, and toward the north-northwest in the eastern portion of the SERVCO site. The horizontal hydraulic gradient ranges from 0.033 ft/ft to 0.033 ft/ft, with an average horizontal hydraulic gradient of approximately 0.025 ft/ft. A vertical hydraulic gradient was calculated between monitoring wells MW-3 and DW-1, located approximately 13 feet apart, and wells MW-3 and DW-2, located approximately 19 feet apart. The estimated vertical hydraulic gradients are 0.060 ft/ft downward and 0.040 ft/ft downward for well pairs MW-3/DW-1 and MW-3/DW-2 respectively.

Based on the results of slug testing in two site monitoring wells, and calculations based on grain size analyses of soil samples collected from the saturated zone at two soil boring locations, the estimated hydraulic conductivity of the shallow unconfined aquifer ranges from approximately 0.16 ft/day to 2.30 ft/day, and the estimated ground-water flow velocity ranges from approximately 0.010 and 0.143 ft/day, or between approximately 3.65 and 52.46 ft/yr.

to the north of the site. The south and east extent of petroleum impacted soil has not been determined. WLC can advance an additional soil boring to the north of the source area; however, Caswell Street (US Highway 74) and Rutherford Street prohibit additional drilling activities to determine the lateral extent of soil impact to the south and east of the source area. Addendum.

## 8. References

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**Table 1**  
**Summary of Soil Analytical Results - Method 8260**  
**SERVCO # 00911**  
**Wadesboro, North Carolina**

Soil Sample ID	Sample Depth	Date Sampled	SW-846 Method 8260																									
			Acetone	Benzene	Bromoform	2-Butanone	n-Butylbenzene	sec-Butylbenzene	t-Butylbenzene	Bromodichloromethane	Carbon disulfide	Chlorobenzene	Dichlorodifluoromethane	Ethylbenzene	Isopropylbenzene	Isopropyltoluene	4-Isopropyltoluene	Methylene Chloride	Naphthalene	n-Propylbenzene	Styrene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes (Total)	MTBE	TPE	
GP-1 (14-16)		7/18/01	ND	51.9	ND	ND	120.1	111.6	11.1	ND	ND	ND	ND	6.2	ND	63.5	5.7	ND	662.9	116.3	ND	ND	ND	ND	42	NA	NA	
GP-2 (16-18)		7/18/01	ND	1,331	ND	ND	103.5	91.2	9.3	ND	ND	ND	ND	55.7	ND	122.7	20.4	ND	210	319.2	ND	23.5	18.9	10.2	153.9	NA	NA	
GP-3 (14-16)		7/18/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	511.5	ND	ND	ND	ND	ND	ND	NA	NA	
GP-4 (12-14)		7/18/01	ND	556.2	ND	ND	1,865	1,483	179.8	ND	ND	ND	ND	174.2	ND	758.4	264	ND	5,315	1,629	ND	ND	275.3	123.6	679.8	NA	NA	
GP-5 (18-20)		7/18/01	ND	ND	ND	ND	1,792	48.1	ND	ND	3	ND	ND	5,565	ND	102.5	22.3	7.9	2,655	2,929	ND	10.5	19,880	3,815	8,631	NA	NA	
GP-6 (10-12)		7/19/01	ND	9.7	ND	ND	3.2	2.7	ND	ND	ND	ND	ND	6.1	ND	ND	ND	5.2	ND	2.7	ND	4.8	7.2	2.3	19.7	7.5	ND	
GP-7 (16-18)		7/19/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	435.3	ND	129.4	ND	ND	ND	ND	541.2	ND	ND	2,529	811.8	1,376	NA	NA
GP-8 (16-18)		7/19/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	176.8	ND	ND	NA	NA	
GP-9 (6-8)		7/19/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	143.7	ND	ND	155.2	NA	NA	
GP-10 (2-4)		7/19/01	46.9	2.8	ND	ND	ND	ND	ND	ND	4.2	ND	ND	1.6	ND	ND	ND	5.4	ND	ND	ND	2	ND	ND	4.4	2.9	ND	
GP-11 (14-16)		7/19/01	ND	968.4	ND	ND	ND	33.3	ND	ND	ND	ND	ND	18,730	ND	108.7	15.7	6.8	5,089	7,532	ND	133.5	46,710	15,000	48,920	ND	ND	
GP-12 (12-14)		7/19/01	ND	1,712	ND	ND	ND	243.8	ND	ND	ND	ND	ND	5,725	ND	462.5	412.5	ND	2,400	2,431	ND	7,688	14,060	5,081	26,190	500	ND	
GP-13 (14-16)		7/19/01	ND	3,372	ND	ND	ND	34.1	ND	ND	ND	3.4	ND	10,120	ND	130	16.1	7	3,610	4,268	ND	76	26,280	8,110	27,440	158.9	ND	
GP-14 (2-4)		7/20/01	ND	ND	ND	ND	ND	134.6	ND	ND	ND	ND	ND	179.7	ND	ND	211.5	ND	1,135	166.7	ND	ND	1,167	185.9	352.6	NA	NA	
GP-15 (2-4)		7/20/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	171.2	NA	NA	
GP-16 (10-12)		7/20/01	ND	ND	ND	ND	ND	2,314	ND	141	ND	ND	ND	25,770	ND	3,615	2,615	ND	10,710	18,970	ND	1,442	123,100	40,830	123,200	NA	NA	
GP-17 (14-16)		7/20/01	ND	1,380	ND	ND	ND	ND	ND	ND	ND	ND	ND	116	ND	8.3	ND	ND	7.1	15.5	ND	14.9	67.7	21.6	2,108	1,783	10.2	
GP-18 (14-16)		7/20/01	ND	196.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	142.9	ND	160.7	NA	NA	
GP-19 (8-9)		7/20/01	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	10.8	ND	ND	ND	6	2.4	ND	9.4	ND	ND	
GP-20 (14-16)		7/20/01	ND	10,600	ND	ND	ND	ND	7,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	8,554	10,120	ND	45,060	60,120	19,760	141,000	ND	ND	
GP-21 (12-14)		7/20/01	ND	8,274	ND	ND	ND	39.5	ND	ND	ND	ND	ND	59,520	ND	126	18.3	9	20,240	22,080	ND	112,500	150,000	43,510	279,800	ND	ND	
GP-23 (12-14)		7/20/01	ND	3,344	ND	ND	ND	1,325	ND	ND	ND	ND	ND	16,560	ND	2,994	2,675	ND	8,750	5,312	ND	35,120	44,310	11,880	89,120	NA	NA	
MSCC Residential			1.56 E <sup>6</sup>	22,000	--	--	156,000	156,000	156,000	--	1.56 E <sup>6</sup>	--	--	1.56 E <sup>6</sup>	--	--	--	85,000	63,000	156,000	ND	3.2 E <sup>6</sup>	782,000	782,000	3.2 E <sup>7</sup>	156,000	156,000	
MSCC Soil-to-Ground Water			3,000	5.6	--	--	4,000	3,000	3,000	--	4,000	--	--	240	--	--	--	20	580	2,000	ND	7,000	8,000	7,000	5,000	920	370	

Table 1 (Continued)

Soil Sample ID	Sample Depth	Date Sampled	SW-846 Method 8260																								
			Acetone	Benzene	Bromoform	2-Butanone	n-Butylbenzene	sec-Butylbenzene	t-Butylbenzene	Bromodichloromethane	Carbon disulfide	Chlorobenzene	Dichlorodifluoromethane	Ethylbenzene	Isopropylbenzene	Isopropyltoluene	4-Isopropyltoluene	Methylene Chloride	Naphthalene	n-Propylbenzene	Styrene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes (Total)	MTBE	PE
GP-24 (18-20)	10/23/01	ND	ND	80.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-25 (8-10)	10/23/01	222.2	ND	37.4	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-26 (14-16)	10/23/01	ND	<b>11.4</b>	ND	78.4	ND	5.8	8.6	ND	ND	ND	2.2	ND	8.3	ND	8.6	ND	ND	4.2	ND	2.2	26.2	18.6	6.3	ND	ND	
GP-27 (6-8)	10/23/01	273.9	4.9	44.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.1	ND	ND	ND	15.7	ND	ND	3.2	8.3	ND	8.9	ND	ND	
GP-28 (12-14)	10/23/01	820.3	<b>19.1</b>	54.6	108.5	ND	2.4	ND	ND	ND	ND	ND	6.2	11.8	ND	ND	ND	13.9	3.1	ND	4.2	14.2	3.2	25	ND	ND	
GP-29 (8-10)	10/23/01	88.3	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND	8.8	ND	ND	ND	5.5	ND	12.3	ND	ND	
GP-30 (10-11)	10/23/01	ND	4	50.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1	ND	ND	ND	15.8	ND	4.5	ND	8.2	ND	9.2	ND	ND	
GP-31 (4-6)	10/23/01	ND	<b>5.8</b>	30.8	ND	ND	ND	ND	ND	ND	ND	ND	3.5	5.1	ND	ND	ND	9.6	ND	ND	3.2	17.3	5.1	19	ND	ND	
GP-32 (8-10)	10/23/01	89.9	ND	28.8	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND	7	ND	ND	ND	3.1	ND	3.5	ND	ND	
*MW-9 (12-14)	10/23/01	ND	<b>82</b>	ND	901.5	1,623	76.4	75.7	ND	ND	ND	ND	<b>4,691</b>	1,494	ND	75.7	ND	<b>3,198</b>	<b>3,148</b>	ND	53.7	5,272	6,728	<b>23,280</b>	ND	45.7	
MSCC Residential		1.56 E <sup>6</sup>	22,000	--	--	156,000	156,000	156,000	--	1.56 E <sup>6</sup>	--	--	1.56 E <sup>6</sup>	1.56 E <sup>6</sup>	--	--	85,000	63,000	156,000	--	3.2 E <sup>6</sup>	782,000	782,000	3.2 E <sup>7</sup>	156,000	156,000	
MSCC Soil-to-Ground Water		3,000	5.6	--	--	4,000	3,000	3,000	--	4,000	--	--	240	2,000	--	--	20	580	2,000	--	7,000	8,000	7,000	5,000	920	370	

Notes:  
 Concentrations are reported in micrograms per kilogram (µg/Kg) unless otherwise noted.  
 Concentrations in **BOLD** indicate constituent concentrations which exceed the soil-to-groundwater maximum soil contaminant concentration.  
 ND = Not detected.

**Table 2**  
**Summary of Soil Analytical Results - Method 8270**  
**SERVCO # 00911**  
**Wadesboro, North Carolina**

Soil Sample ID	Sample Depth	Date Sampled	SW-846 Method 8270		
			2-Methylnaphthalene	Naphthalene	Phenanthrene
GP-1	14-16'	7/18/01	890	ND	482
GP-2	16-18'	7/18/01	ND	ND	ND
GP-3	14-16'	7/18/01	834	ND	ND
GP-4	12-14'	7/18/01	26,700	3,790	7,870
GP-5	18-20'	7/18/01	ND	ND	ND
GP-6	10-12'	7/19/01	NA	NA	NA
GP-7	16-18'	7/19/01	ND	ND	ND
GP-8	16-18'	7/19/01	ND	ND	ND
GP-9	6-8'	7/19/01	ND	ND	ND
GP-10	2-4'	7/19/01	NA	NA	NA
GP-11	14-16'	7/19/01	NA	NA	NA
GP-12	12-14'	7/19/01	NA	NA	NA
GP-13	14-16'	7/19/01	NA	NA	NA
GP-14	2-4'	7/20/01	ND	ND	ND
GP-15	2-4'	7/20/01	ND	ND	ND
GP-16	10-12'	7/20/01	2,410	2,630	ND
GP-17	14-16'	7/20/01	NA	NA	NA
GP-18	14-16'	7/20/01	ND	ND	ND
GP-19	8-9'	7/20/01	NA	NA	NA
GP-20	14-16'	7/20/01	NA	NA	NA
GP-21	12-14'	7/20/01	NA	NA	NA
MSCC Residential			63,000	63,000	4.69 E <sup>5</sup>
MSCC Soil-to-Ground Water			3,000	580	60,000

Table 2 (Continued)

Soil Sample ID	Sample Depth	Date Sampled	SW-846 Method 8270		
			2-Methylnaphthalene	Naphthalene	Phenanthrene
GP-23	12-14'	7/20/01	<b>4,950</b>	<b>4,540</b>	ND
GP-24	18-20'	10/23/01	ND	ND	ND
GP-25	8-10'	10/23/01	ND	ND	ND
GP-26	14-16'	10/23/01	ND	ND	ND
GP-27	6-8'	10/23/01	ND	ND	ND
GP-28	12-14'	10/23/01	ND	ND	ND
GP-29	8-10'	10/23/01	ND	ND	ND
GP-30	10-11'	10/23/01	ND	ND	ND
GP-31	4-6'	10/23/01	ND	ND	ND
GP-32	8-10'	10/23/01	ND	ND	ND
MW-9	12-14'	10/23/01	73.3	40.7	ND
MSCC Residential			<b>63,000</b>	<b>63,000</b>	<b>4.69 E<sup>5</sup></b>
MSCC Soil-to-Ground Water			<b>3,000</b>	<b>580</b>	<b>60,000</b>

Notes:

Concentrations are reported in micrograms per kilogram ( $\mu\text{g}/\text{Kg}$ ) unless otherwise noted.

Concentrations in **BOLD** exceed the soil-to-groundwater Maximum Soil Contaminant Concentration.

ND Not detected.

**Table 3**  
**Summary of Soil Analytical Results - MADEP VPH and EPH**  
**SERVCO #00911**  
**Wadesboro, North Carolina**

Sample ID	Date	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
GP-1 (14-16')	7/18/01	44.4	188.2	ND	158.2
GP-2 (16-18')	7/18/01	93.1	310.2	ND	141.6
GP-3 (14-16')	7/18/01	108	523.1	ND	327.6
GP-4 (12-14')	7/18/01	6.94	1,307.9	ND	1,758.37*
GP-5 (18-20')	7/18/01	223	149	ND	45.2
GP-6 (10-12')	7/19/01	ND	11.7	NA	ND
GP-7 (16-18')	7/19/01	8.45	6.09	ND	44.6
GP-8 (16-18')	7/19/01	7.37	ND	ND	ND
GP-9 (6-8')	7/19/01	137	303.4	ND	117
GP-10 (2-4')	7/19/01	ND	ND	NA	ND
GP-11 (14-16')	7/19/01	237	139	NA	45.8
GP-12 (12-14')	7/19/01	328	200	NA	65.8
GP-13 (14-16')	7/19/01	212	149	NA	51.1
GP-14 (2-4')	7/20/01	30.9	172.7	ND	49.5
GP-15 (2-4')	7/20/01	ND	ND	ND	ND
GP-16 (10-12')	7/20/01	165	687	2600	590.3*
GP-17 (14-16')	7/20/01	18.4	7.4	NA	ND
GP-18 (14-16')	7/20/01	ND	262	919	963*
GP-19 (8-9')	7/20/01	ND	ND	NA	ND
GP-20 (14-16')	7/20/01	518	246	NA	88.7
GP-21 (12-14')	7/20/01	109	103	NA	38.3
Residential MSCC		939	9,386	93,860	469
Soil-to-Groundwater MSCC		72	3,255	immobile	34

Table 3 (Continued)

Sample ID	Date	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
GP-23 (12-14')	7/20/01	<b>1,290*</b>	1,828	ND	<b>708*</b>
GP-24 (18-20)	10/23/01	ND	ND	ND	ND
GP-25 (8-10')	10/23/01	ND	ND	ND	ND
GP-26 (14-16')	10/23/01	24.3	280	741	<b>293.2</b>
GP-27 (6-8')	10/23/01	ND	ND	18.1	ND
GP-28 (12-14')	10/23/01	ND	ND	22.6	ND
GP-29 (8-10')	10/23/01	ND	ND	ND	ND
GP-30 (10-11')	10/23/01	ND	ND	ND	ND
GP-31 (4-6')	10/23/01	ND	ND	ND	ND
GP-32 (8-10')	10/23/01	ND	ND	34.9	17.7
MW-9 (12-14')	10/23/01	<b>136</b>	127	43.5	<b>36</b>
Residential MSCC		939	9,386	93,860	469
Soil-to-Groundwater MSCC		72	3,255	immobile	34

Notes:

All concentrations are reported in milligrams per kilogram (mg/Kg).

Concentrations in bold exceed the Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs).

MADEP VPH Massachusetts Department of Environmental Protection Volatile Petroleum Hydrocarbon Method

MADEP EPH Massachusetts Department of Environmental Protection Extractable Petroleum Hydrocarbon Method

ND Not Detected

NS Not Sampled

NA Not Analyzed

\* Exceeds Residential MSCC



Table 4  
 Summary of Ground-Water Analytical Results  
 SERVCO # 00911  
 Wadesboro, North Carolina

Compound	Date Sampled	MW-1	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	DW-1	DW-2	15A NCAG 2L Standard	GCL
EPA Method 239.2 Prepared by 3030C (µg/L)														
Lead	7/25/01 10/31/01	106 NS	5 3	160 11(28)	19 6	52 (65) 46	8 15	- 15	- 4	- 7	6 ND	3 ND	15	15,000
Purgeable Halocarbons by EPA Method 601 (µg/L)														
Chloroform	7/25/01 10/31/01	ND NS	2.5 ND	ND ND (ND)	14.1 5	ND (ND) ND	1.6 ND	- ND	- ND	- ND	ND ND	ND ND	0.19	190
1,2-Dichloroethane	7/25/01 10/31/01	ND NS	ND ND	110 95 (90)	ND ND	ND (ND) ND	ND ND	- ND	- ND	- ND	4.4 ND	1.7 1.4	0.38	380
Ethylene Dibromide	7/25/01 10/31/01	ND NS	ND ND	ND ND (ND)	ND ND	ND (ND) ND	ND ND	- ND	- ND	- ND	ND ND	ND ND	0.0004	50
Purgeable Aromatics by EPA Method 602 (µg/L)														
Benzene	7/25/01 10/31/01	2,420 NS	200 97.8	8,060 <sup>1</sup> 9,030 <sup>1</sup> (9,420) <sup>1</sup>	4.8 39.6	1,020 (1,140) 1,680	ND ND	- 11,600 <sup>1</sup>	- ND	- 1,850	603 361	15.2 15.4	1	5,000
Toluene	7/25/01 10/31/01	340 NS	320 53.5	3,500 2,440 (3,960)	2.8 9.9	5,680 (6,440) 984	ND ND	- 3,650	- ND	- 278	ND ND	1.6 ND	1,000	257,000
Ethylbenzene	7/25/01 10/31/01	650 NS	490 168	1,020 876 (1,380)	10.7 36.8	1,620 (1,920) 3,700	ND ND	- 1,500	- ND	- 1,040	ND 1.1	1.3 ND	29	29,000
Xylenes (total)	7/25/01 10/31/01	250 NS	1,820 353	4,860 4,030 (6,440)	93.5 73.6	6,960 (8,060) 6,110	ND ND	- 2,800	- ND	- 1,340	35 16.7	4.6 ND	530	87,500
MTBE	7/25/01 10/31/01	290 NS	ND 39.8	2,500 2,030 (3,180)	ND 12	140 (130) 180	ND ND	- 1,410	- 2.4	- 56	84 101	1.6 1.8	200	200,000
IPE	7/25/01 10/31/01	ND NS	ND ND	4,140 3,360 (5,160)	5.7 7	105 (115) 169	ND ND	- 158	- ND	- 210	57 67.8	5.2 8.2	70	70,000

Table 4 (Continued)

Compound	Date Sampled	MW-1	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	DW-1	DW-2	15A NCAC 2L Standard	GCL
Base/Neutral Acid Extractables by EPA Method 625 (µg/L)														
2,4-Dimethylphenol	7/25/01	ND	ND	ND	ND	ND (18)	ND	-	-	-	ND	ND	140	140,000
	10/31/01	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	7/25/01	1,420	100	190	ND	1,420 (900)	ND	-	-	-	48	ND	21	15,500
	10/31/01	NS	22	220	ND	500	ND	270	ND	120	33	ND	ND	ND
Phenanthrene	7/25/01	15	ND	ND	ND	ND (ND)	ND	-	-	-	ND	ND	210	410
	10/31/01	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene Dibromide (EDB) by EPA Method 504.1 (µg/L)														
Ethylene Dibromide	10/31/01	NS	NA	NA	NA	NA	NA	0.16	ND	0.26	NA	NA	0.0004	50

Notes:

Concentrations are reported in micrograms per liter (µg/L) unless otherwise noted.

Concentrations in bold exceed the 15A NCAC 2L standards.

NS Not Sampled

ND Not Detected

NA Not Analyzed

GCL Gross Contamination Level for Groundwater

1 Concentration exceeds the GCL.

Samples were not collected from wells MW-2 and MW-3 on 7/25/01 and 10/31/01 due to the presence of free product in the wells.

A sample was not collected from well MW-1 on 10/31/01 because the water table elevation was lower than the bottom of the well screen.

625 BNA bottles for the duplicate sample collected on 10/31/01 were broken in the laboratory, therefore the duplicate was not analyzed for Method 625.

**Table 5**  
**Sumamry of Ground-Water Analytical Results - MADEP VPH and EPH**  
**SERVCO #00911**  
**Wadesboro, North Carolina**

Sample ID	Date	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
MW-1	7/25/01 10/31/01	6,340 NS	3,590 NS	ND NS	4,290 NS
MW-4	7/25/01 10/31/01	6,340 1,530	7,930 2,440	ND ND	2,861 904
MW-5	7/25/01 10/31/01	39,100 <b>59,200 (61,200)</b>	25,600 <b>14,400 (15,000)</b>	ND ND	7,103 <b>443 (283)</b>
MW-6	7/25/01 10/31/01	1,180 965	1,150 1,320	ND ND	663 299
MW-7	7/25/01 10/31/01	25,700 (23,200) 17,900	32,000 (33,510) 13,400	ND ND	6,314 (9,120) 682
MW-8	7/25/01 10/31/01	ND ND	190 ND	ND ND	ND ND
MW-9	7/25/01 10/31/01	- 54,000	- 16,000	- ND	- 667
MW-10	7/25/01 10/31/01	- ND	- ND	- ND	- ND
MW-11	7/25/01 10/31/01	- 11,600	- 6,470	- ND	- 597
DW-1	7/25/01 10/31/01	2,060 1,840	815 174	ND ND	320 151
DW-2	7/25/01 10/31/01	ND ND	203 ND	ND ND	ND ND
15A NCAC 2L Standard (µg/L)		420	4,200	42,000	210

**Notes:**

All concentrations are reported in milligrams per kilogram (mg/Kg).

Concentrations in **bold** exceed the Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs).

MADEP VPH Massachusetts Department of Environmental Protection Volatile Petroleum Hydrocarbon Method

MADEP EPH Massachusetts Department of Environmental Protection Extractable Petroleum Hydrocarbon Method

ND Not Detected

NS Not Sampled

NA Not Analyzed

Table 6  
 Summary of Ground-Water Analytical Results - Method 625 - Tentatively Identified Compounds  
 SERV 00911  
 Wadesboro, North Carolina

Compound	Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	DW-1	DW-2
Propenylbenzene	07/25/01 10/31/01	197 NA	NA NA	NA NA	ND 21	ND ND(ND)	ND 27	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, 1-methyl-2-(met	07/25/01 10/31/01	162 NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(109) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, (2-methyl-2-prop	07/25/01 10/31/01	97 NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, 2-ethyl-1, 4-di	07/25/01 10/31/01	113 NA	NA NA	NA NA	ND ND	ND ND(ND)	35 ND	ND(109) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, cyclopropyl	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	13 ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, 1,2,3,5-tetrament	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	14 ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1,2,4,5-Tetramethylbenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) 319	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, 1-propynyl-	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	141(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Benzene, 2-ethenyl-1,4-di	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	158(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1-Ethyl-2-Methyl benzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	143 87	ND ND(ND)	45 61	601(24) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1-Ethyl-3-Methyl benzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND 47	281 440(ND)	44 ND	ND(540) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1-Ethyl-4-Methyl benzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	394 ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	10 ND	ND ND
1,3,5-Trimethylbenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	461 86	438 ND(ND)	ND 104	814(790) 755	ND ND	NA 589	NA ND	NA 522	13 ND	ND ND

Table 6 (Continued)

Compound	Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	DW-1	DW-2
1,2,4-Trimethylbenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND 624(ND)	ND ND	ND(ND) ND	ND ND	NA 275	NA ND	NA 275	ND ND	ND ND
1,2,3-Trimethylbenzene	07/25/01 10/31/01	122 NA	NA NA	NA NA	149 31	ND 339(ND)	22 56	ND(ND) 306	ND ND	NA ND	NA ND	NA ND	ND 24	ND ND
1-Ethynyl-3-Methyl benzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA 434	NA ND	NA ND	ND ND	ND ND
1-Ethynyl-2-Methyl benzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) 365	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1,3-Dimethylbenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	168 43	230 895(ND)	ND 39	ND(ND) 319	ND ND	NA 941	NA ND	NA 277	ND ND	ND ND
1,2-Dimethylbenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1-Methyl-4 (1-Methyl benzene)	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
1-Methyl-3 (1-Methyl benzene)	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
4-Ethyl-1-2, Dimethylbenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND 29	ND ND(ND)	ND 93	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
2,4,6-trimethyliodobenzene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	12 ND	ND ND
Indane	07/25/01 10/31/01	384 NA	NA NA	NA NA	115 25	ND ND(ND)	ND ND	347(332) 410	ND ND	NA 327	NA ND	NA 346	ND ND	ND ND
Indene	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(145) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND
Indan, 1-methyl	07/25/01 10/31/01	ND NA	NA NA	NA NA	ND ND	ND ND(ND)	20 ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	12 ND	ND ND
1H-Indene, 2, 3-dihydro-5-	07/25/01 10/31/01	67 NA	NA NA	NA NA	ND ND	ND ND(ND)	ND ND	ND(ND) ND	ND ND	NA ND	NA ND	NA ND	ND ND	ND ND

Table 6 (C) (ued)

Compound	Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	DW-1	DW-2
2-Pentanone, 4-hydroxy-4-	07/25/01	ND	NA	NA	ND	ND	29	ND(ND)	ND	NA	NA	NA	ND	ND
	10/31/01	NA	NA	NA	ND(ND)	ND(ND)	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-2-Pentanol	07/25/01	ND	NA	NA	ND	235	ND	ND(ND)	ND	NA	NA	NA	25	ND
	10/31/01	NA	NA	NA	ND(ND)	ND(ND)	ND	ND	ND	ND	ND	ND	36	ND
3-Methyl-3-Pentanol	07/25/01	ND	NA	NA	ND	343	ND	ND(ND)	ND	NA	NA	NA	17	ND
	10/31/01	NA	NA	NA	ND	586(ND)	ND	ND	ND	286	ND	381	ND	ND
3-Hexanol, 4-methyl	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	NA	NA	NA	29	ND
	10/31/01	NA	NA	NA	ND(ND)	ND(ND)	ND	ND	ND	ND	ND	ND	ND	ND
3-Methyl, 3-Hexanol	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	NA	NA	NA	ND	ND
	10/31/01	NA	NA	NA	ND	567(ND)	ND	ND	ND	ND	ND	ND	14	ND
2-Methyl, 2-Hexanol	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	ND	ND	ND
	10/31/01	NA	NA	NA	ND(ND)	ND(ND)	ND	ND	ND	ND	ND	ND	12	ND
2,3-Dimethyl-1-3-pentanol	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	NA	ND	ND
	10/31/01	NA	NA	NA	ND	ND(ND)	ND	ND	ND	ND	ND	506	ND	ND
1,2-Dimethylcyclopentanol	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	ND	ND	ND
	10/31/01	NA	NA	NA	ND	ND(ND)	ND	ND	ND	ND	ND	ND	26	ND
Nonanoic Acid	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	ND	ND	ND
	10/31/01	NA	NA	NA	ND	ND(ND)	ND	ND	ND	ND	ND	ND	15	ND
Dodecanoic Acid	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	ND	ND	ND
	10/31/01	NA	NA	NA	ND	ND(ND)	ND	ND	ND	ND	ND	ND	17	ND
1-Methylcyclohexanol	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	NA	ND	ND
	10/31/01	NA	NA	NA	ND	ND(ND)	ND	ND	ND	ND	ND	246	ND	ND
2-Methyl-2-Hexanol	07/25/01	ND	NA	NA	ND	ND	ND	ND(ND)	ND	ND	ND	NA	ND	ND
	10/31/01	NA	NA	NA	ND	ND(ND)	ND	ND	ND	ND	ND	242	ND	ND

Notes:  
 All concentrations are reported in micrograms/liter (µg/L).  
 ND Not Detected  
 NA Not Analyzed  
 () Duplicate Samples

Table 7  
 Free Product Recovery  
 SERVCO # 00911  
 Wadesboro, North Carolina

Date	Activity	Estimated Product Recovered (gallons)	MW-2			MW-3			Cumulative Product Recovered (gallons)
			Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	
7/20/01	Drilling	0.0	21.81	21.50	0.31	22.05	22.04	0.01	0.0
7/25/01	GW Sampling	0.0	21.86	21.54	0.32	21.01	21.00	0.01	0.0
9/6/01	AFVR	9.0	22.44	22.09	0.35	--	--	0.00	9.0
10/3/01	Post AFVR check	0.5	23.45	23.04	0.41	23.91	23.89	0.02	9.5
10/23/01	Drilling	0.0	23.33	23.25	0.08	22.21	22.18	0.03	9.5
10/31/01	GW Sampling	0.0	23.73	23.48	0.25	22.26	22.22	0.04	9.5

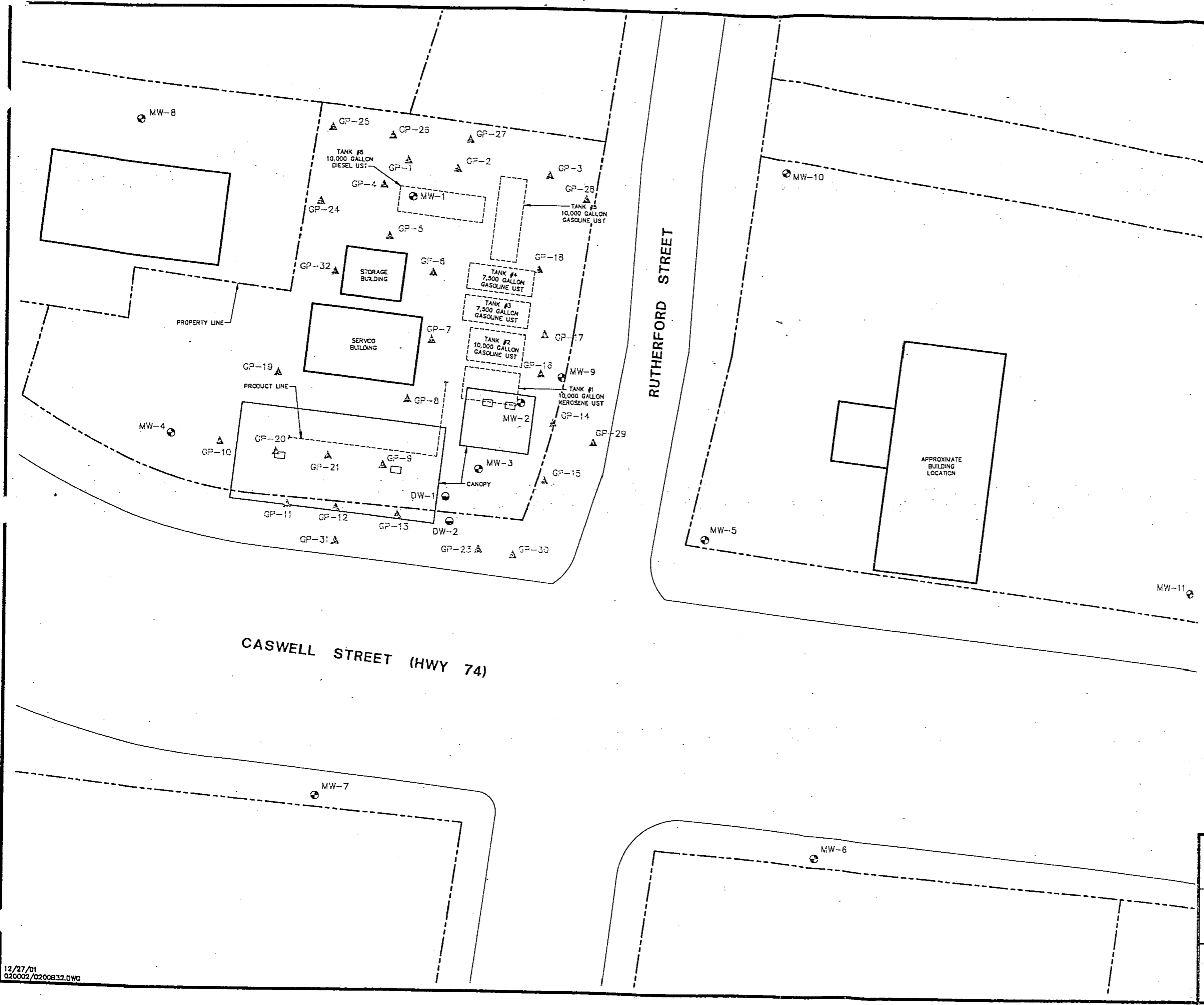
Notes:  
 Gaugings from top of casing with an oil/water interface probe.  
 Product recovered quantities approximated  
 Product recovered using polyethylene bailer or vacuum truck

**Table 8**  
**Historic Top of Casing and Ground-Water Elevations**  
**SERVCO # 00911**  
**Wadesboro, North Carolina**

Well I.D.	Top of Casing Elevation	Ground Surface Elevation	Depth to Water				Ground-Water Elevation 10/31/01	
			10/24/00	12/1/00	7/25/01	9/6/01		10/31/01
MW-1	100	100.72	16.16	17.98	22.40	23.06	23.61	76.39
MW-2	99.00	99.63	19.04	19.89	Product	Product	Product	--
MW-3	99.30	99.60	21.75	20.51	Product	21.66	Product	--
MW-4	99.49	99.63	--	18.73	20.50	21.17	22.10	77.39
MW-5	99.43	99.82	--	--	17.45	18.33	19.20	80.23
MW-6	100.34	100.52	--	--	7.58	8.52	8.99	91.35
MW-7	98.51	98.77	--	--	5.00	7.00	8.24	90.27
MW-8	100.06	100.30	--	--	20.51	21.09	21.74	78.32
MW-9	99.24	99.41	--	--	--	--	24.54	74.70
MW-10	84.01	84.17	--	--	--	--	12.90	71.11
MW-11	99.22	99.38	--	--	--	--	13.69	85.53
DW-1	99.25	99.79	--	21.21	24.08	--	24.18	75.07
DW-2	99.33	99.57	--	--	23.66	24.50	24.60	74.73

**Notes:**  
All measurements are in feet.  
Samples from wells MW-2 and MW-3 were not collected on 7/25/01 and 10/31/01 due to the presence of free product in the wells.



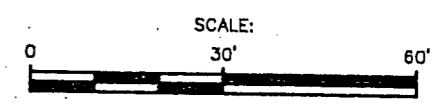


**LEGEND**

- FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- ⊙ MONITORING WELL - DEEP
- △ SOIL BORING

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

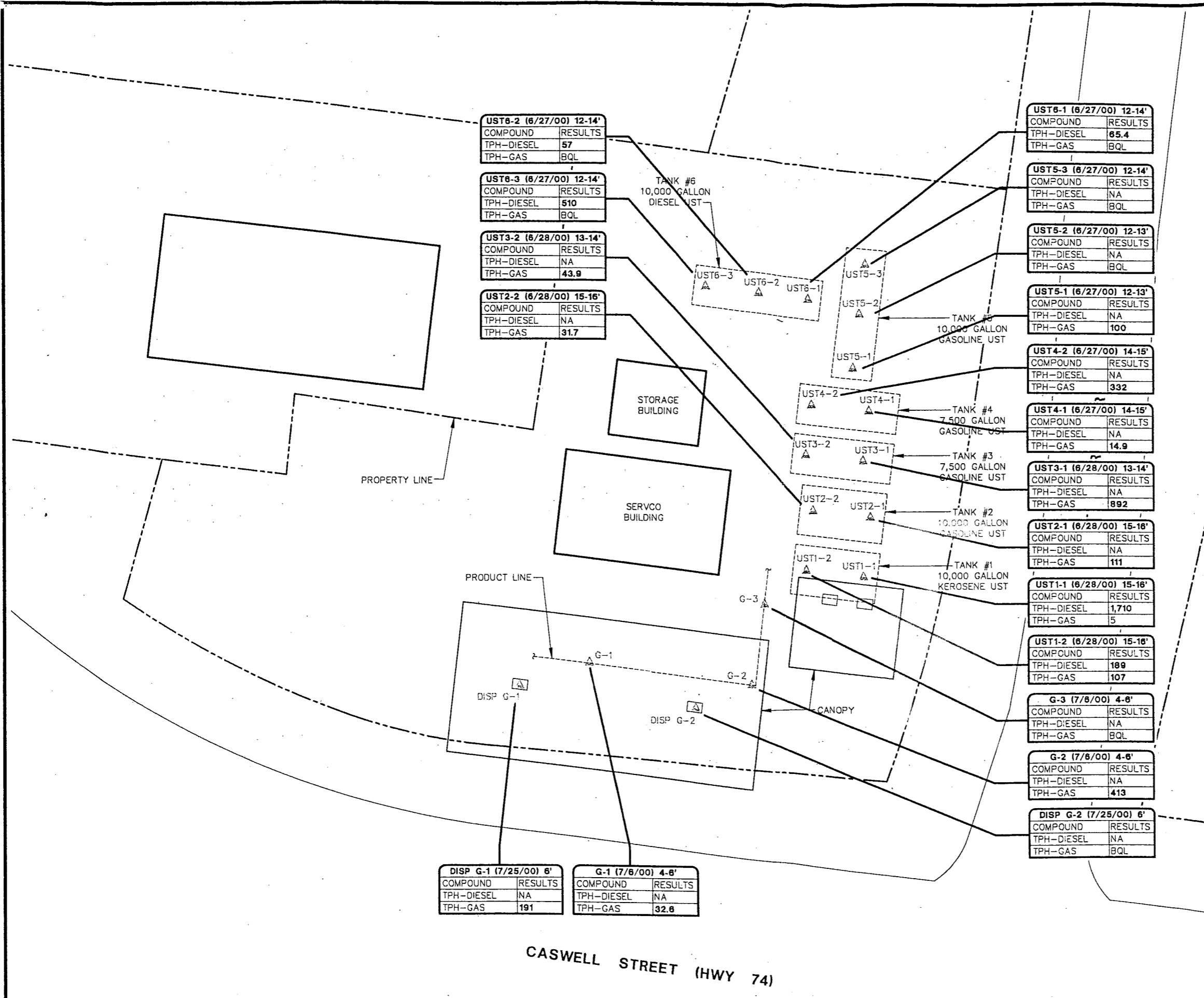


SERVCO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**SITE FEATURES MAP**

Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

FIGURE  
**2**



**LEGEND**

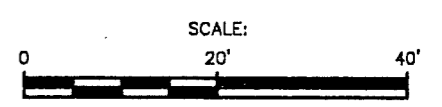
- FUEL PUMP
- △ UST3-2 SOIL SAMPLE LOCATION

SOIL SAMPLE ANALYTICAL RESULTS IN MICROGRAMS PER KILOGRAM (mg/Kg)

UST- (6/27/00) 12-14'		SAMPLE NUMBER (SAMPLE DATE) DEPTH
COMPOUND	RESULTS	
TPH-DIESEL	NA	SW-846 METHOD 3550
TPH-GAS	NA	SW-846 METHOD 5030
TPH-DIESEL	NA	NOT ANALYZED
TPH-GAS	NA	BELOW QUANTITATION LIMIT
		<b>413</b> BOLD VALUE INDICATES THE RESULT EXCEEDS NCDENR MAXIMUM SOIL CONTAMINANT CONCENTRATION

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



DISP G-1 (7/25/00) 6'		G-1 (7/6/00) 4-6'	
COMPOUND	RESULTS	COMPOUND	RESULTS
TPH-DIESEL	NA	TPH-DIESEL	NA
TPH-GAS	191	TPH-GAS	32.8

UST6-1 (6/27/00) 12-14'	
COMPOUND	RESULTS
TPH-DIESEL	65.4
TPH-GAS	BQL

UST5-3 (6/27/00) 12-14'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	BQL

UST5-2 (6/27/00) 12-13'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	BQL

UST5-1 (6/27/00) 12-13'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	100

UST4-2 (6/27/00) 14-15'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	332

UST4-1 (6/27/00) 14-15'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	14.9

UST3-1 (6/28/00) 13-14'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	892

UST2-1 (6/28/00) 15-16'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	111

UST1-1 (6/28/00) 15-16'	
COMPOUND	RESULTS
TPH-DIESEL	1,710
TPH-GAS	5

UST1-2 (6/28/00) 15-16'	
COMPOUND	RESULTS
TPH-DIESEL	189
TPH-GAS	107

G-3 (7/8/00) 4-6'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	BQL

G-2 (7/8/00) 4-6'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	413

DISP G-2 (7/25/00) 6'	
COMPOUND	RESULTS
TPH-DIESEL	NA
TPH-GAS	BQL

SERVO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**SOIL SAMPLE LOCATIONS AND ANALYTICAL RESULTS UST CLOSURE - JUNE 2000**

Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

FIGURE 3

CASWELL STREET (HWY 74)

MW-1 (10/16/00)			
DEPTH	4-6	9-11	14-16
COMPOUND	RESULTS	RESULTS	RESULTS
ACETONE	ND	ND	351.8
BENZENE	ND	ND	ND
BROMO	ND	ND	ND
N-BUTYL	ND	ND	ND
SEC-BUTYL	ND	ND	ND
TERT-BUTYL	ND	ND	ND
2-CHLORO	ND	ND	ND
4-CHLORO	ND	ND	ND
ETHYLBEN	ND	ND	ND
ISOPROP	ND	ND	ND
4-ISOPROP	ND	ND	ND
METH CHL	ND	ND	ND
NAPH 8260	ND	ND	111.8
N-PROPYL	ND	ND	18.8
TOLUENE	ND	ND	ND
1,2,3-TRICHL	ND	ND	ND
1,2,4-TRICHL	ND	ND	ND
1,2,4-TRIM	ND	ND	209.4
1,3,5-TRIM	ND	ND	57.6
XYLENES	ND	ND	85.3
MTBE	ND	ND	ND
IPE	ND	ND	ND
FLUORENE	ND	ND	ND
2-METH	ND	1,950	ND
NAPH 8270	ND	ND	ND
PHENAN	ND	488	ND
C5-C8 ALI	ND	23.2	77.4
C9-C18 ALI	ND	372.8	35.8
C19-C36 ALI	ND	27	ND
C9-C22 ARO	ND	390.2	42.2

MW-3 (10/16/00)			
DEPTH	9-11	14-16	19-21
COMPOUND	RESULTS	RESULTS	RESULTS
ACETONE	ND	716	ND
BENZENE	ND	ND	ND
BROMO	ND	ND	ND
N-BUTYL	ND	ND	ND
SEC-BUTYL	ND	ND	ND
TERT-BUTYL	ND	ND	ND
2-CHLORO	ND	ND	ND
4-CHLORO	ND	ND	ND
ETHYLBEN	ND	ND	ND
ISOPROP	ND	ND	ND
4-ISOPROP	ND	14.8	ND
METH CHL	ND	ND	ND
NAPH 8260	ND	876.5	817.1
N-PROPYL	ND	ND	262.2
TOLUENE	ND	ND	ND
1,2,3-TRICHL	ND	ND	ND
1,2,4-TRICHL	ND	ND	ND
1,2,4-TRIM	ND	413.6	2,780
1,3,5-TRIM	ND	80.2	792.7
XYLENES	ND	ND	920.7
MTBE	ND	ND	ND
IPE	ND	ND	ND
FLUORENE	ND	ND	ND
2-METH	ND	1,430	966
NAPH 8270	ND	ND	523
PHENAN	ND	ND	ND
C5-C8 ALI	ND	9.95	56.8
C9-C18 ALI	ND	61.03	72.3
C19-C36 ALI	ND	17.2	ND
C9-C22 ARO	ND	45.06	53.8

MW-2 (10/16/00)				
DEPTH	5	9-11	14-16	19-21
COMPOUND	RESULTS	RESULTS	RESULTS	RESULTS
ACETONE	ND	ND	ND	ND
BENZENE	ND	595.4	ND	ND
BROMO	ND	390.2	ND	ND
N-BUTYL	ND	9,000	55.4	ND
SEC-BUTYL	43.4	5,573	24.4	38.2
TERT-BUTYL	ND	512.2	ND	ND
2-CHLORO	ND	12,000	ND	ND
4-CHLORO	ND	12,180	ND	ND
ETHYLBEN	ND	2,866	ND	ND
ISOPROP	ND	2,549	ND	ND
4-ISOPROP	51.8	622	ND	24.1
METH CHL	38.8	ND	35.7	48.8
NAPH 8260	ND	55,730	332.1	333.5
N-PROPYL	23.5	7,293	27.4	89.4
TOLUENE	ND	2,756	ND	ND
1,2,3-TRICHL	ND	463.4	ND	ND
1,2,4-TRICHL	ND	597.6	ND	ND
1,2,4-TRIM	39.8	2,061	63.1	711.8
1,3,5-TRIM	95.8	597.6	21.4	248.2
XYLENES	14.5	5,780	12.5	72.4
MTBE	ND	ND	ND	ND
IPE	ND	ND	ND	ND
FLUORENE	437	4,020	471	ND
2-METH	3,340	40,200	5,110	ND
NAPH 8270	716	12,400	1,380	ND
PHENAN	1,350	ND	1,330	ND
C5-C8 ALI	10.3	170	42.3	34.6
C9-C18 ALI	567.9	4,463	203.5	46.5
C19-C36 ALI	ND	ND	28	ND
C9-C22 ARO	931.3	4,211	222.5	24.4

**LEGEND**

- ☐ FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP

SOIL ANALYTICAL RESULTS IN MICROGRAMS PER KILOGRAM (ug/Kg), UNLESS OTHERWISE NOTED:

MW- (10/16/00)	
DEPTH	4-6
COMPOUND	RESULTS
ACETONE	ND
BENZENE	ND
BROMO	ND
N-BUTYL	ND
SEC-BUTYL	ND
TERT-BUTYL	ND
2-CHLORO	ND
4-CHLORO	ND
ETHYLBEN	ND
ISOPROP	ND
4-ISOPROP	ND
METH CHL	ND
NAPH 8260	ND
N-PROPYL	ND
TOLUENE	ND
1,2,3-TRICHL	ND
1,2,4-TRICHL	ND
1,2,4-TRIM	ND
1,3,5-TRIM	ND
XYLENES	ND
MTBE	ND
IPE	ND
FLUORENE	ND
2-METH	ND
NAPH 8270	ND
PHENAN	ND
C5-C8 ALI	ND
C9-C18 ALI	ND
C19-C36 ALI	ND
C9-C22 ARO	ND

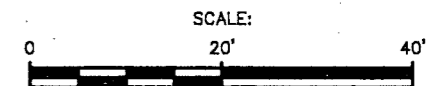
SAMPLE NUMBER (SAMPLE DATE)  
SAMPLE DEPTH (FEET)

ACETONE	ACETONE
BENZENE	BENZENE
BROMOMETHANE	BROMOMETHANE
N-BUTYLBENZENE	N-BUTYLBENZENE
SEC-BUTYLBENZENE	SEC-BUTYLBENZENE
TERT-BUTYLBENZENE	TERT-BUTYLBENZENE
2-CHLOROTOLUENE	2-CHLOROTOLUENE
4-CHLOROTOLUENE	4-CHLOROTOLUENE
ETHYLBENZENE	ETHYLBENZENE
ISOPROPYLBENZENE	ISOPROPYLBENZENE
4-ISOPROPYLTOLUENE	4-ISOPROPYLTOLUENE
METHYLENE CHLORIDE	METHYLENE CHLORIDE
NAPHTHALENE (METHOD 8260)	NAPHTHALENE (METHOD 8260)
N-PROPYLBENZENE	N-PROPYLBENZENE
TOLUENE	TOLUENE
1,2,3-TRICHLOROBENZENE	1,2,3-TRICHLOROBENZENE
1,2,4-TRICHLOROBENZENE	1,2,4-TRICHLOROBENZENE
1,2,4-TRIMETHYLBENZENE	1,2,4-TRIMETHYLBENZENE
1,3,5-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE
XYLENES (TOTAL)	XYLENES (TOTAL)
METHYL-TERTIARY-BUTYL-ETHER	METHYL-TERTIARY-BUTYL-ETHER
ISOPROPYL ETHER	ISOPROPYL ETHER
FLUORENE	FLUORENE
2-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE
NAPHTHALENE (METHOD 8270)	NAPHTHALENE (METHOD 8270)
PHENANTHRENE	PHENANTHRENE
C5-C8 ALIPHATICS (mg/kg)	C5-C8 ALIPHATICS (mg/kg)
C9-C18 ALIPHATICS (mg/kg)	C9-C18 ALIPHATICS (mg/kg)
C19-C36 ALIPHATICS (mg/kg)	C19-C36 ALIPHATICS (mg/kg)
C9-C22 AROMATICS (mg/kg)	C9-C22 AROMATICS (mg/kg)

ND NOT DETECTED  
955 BOLD VALUE INDICATES THE RESULT EXCEEDS THE NCDENR SOIL-TO-GROUNDWATER MAXIMUM SOIL CONTAMINANT CONCENTRATION

**NOTES:**

- BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
- ALL LOCATIONS ARE APPROXIMATE.



SERVCO # 00911  
302-304 CASWELL STREET  
WADESBORO, NORTH CAROLINA  
**SOIL SAMPLE LOCATIONS  
AND ANALYTICAL RESULTS  
LSA - OCTOBER 2000**



Wallace-Lee Consultants, L.L.C.  
Assessment • Design • Remediation

**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP

GROUND-WATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (ug/L)

WELL NUMBER (SAMPLE DATE)

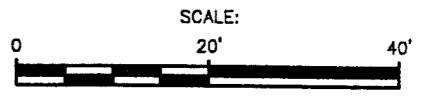
COMPOUND	RESULTS
LEAD	ND
EDB	ND
CHLOROF	ND
1,2-DICL	ND
BENZENE	ND
ETHYLBEN.	ND
TOLUENE	ND
XYLENES	ND
MTBE	ND
IPE	ND
2,4-DI	ND
DIMETH	ND
NAPHTH	ND
PHENOL	ND
C5-C8	ND
C9-C18	ND
C19-C36	ND
C9-C22	ND

LEAD	ETHYLENE DIBROMIDE
EDB	CHLOROFORM
CHLOROF	1,2-DICHLOROETHANE
1,2-DICL	BENZENE
BENZENE	ETHYLBENZENE
ETHYLBEN.	TOLUENE
TOLUENE	XYLENES (TOTAL)
XYLENES	METHYL TERTIARY-BUTYL ETHER
MTBE	ISOPROPYL ETHER
IPE	2,4-DIMETHYLPHENOL
2,4-DI	DIMETHYLPHthalate
DIMETH	NAPHTHALENE
NAPHTH	PHENOL
PHENOL	C5-C8 ALIPHATICS
C5-C8	C9-C18 ALIPHATICS
C9-C18	C19-C36 ALIPHATICS
C19-C36	C9-C22 AROMATICS
C9-C22	

ND NOT DETECTED  
**345** BOLD VALUE INDICATES THE RESULT EXCEEDS 15A NCAC 2L STANDARDS


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



SERVCO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**GROUND-WATER ANALYTICAL RESULTS - LSA**  
**OCTOBER AND DECEMBER 2000**

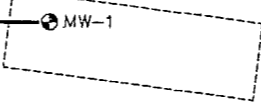


Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

**FIGURE 5**

MW-1 (10/24/00)	
COMPOUND	RESULTS
LEAD	6
EDB	ND
CHLOROF	ND
1,2-DICL	ND
BENZENE	<b>1,990</b>
ETHYLBEN.	<b>2,760</b>
TOLUENE	660
XYLENES	<b>3,800</b>
MTBE	210
IPE	ND
2,4-DI	ND
DIMETH	ND
NAPHTH	<b>345</b>
PHENOL	ND
C5-C8	<b>11,500</b>
C9-C18	<b>6,650</b>
C19-C36	ND
C9-C22	<b>4,800</b>

TANK #6  
 10,000 GALLON  
 DIESEL UST



TANK #5  
 10,000 GALLON  
 GASOLINE UST

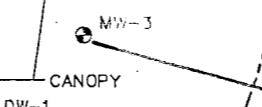
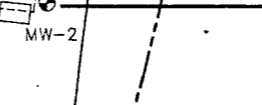
TANK #4  
 7,500 GALLON  
 GASOLINE UST

TANK #3  
 7,500 GALLON  
 GASOLINE UST

TANK #2  
 10,000 GALLON  
 GASOLINE UST

TANK #1  
 10,000 GALLON  
 KEROSENE UST

MW-2 (10/24/00)	
COMPOUND	RESULTS
LEAD	8
EDB	<b>21.3</b>
CHLOROF	ND
1,2-DICL	<b>80</b>
BENZENE	<b>11,200</b>
ETHYLBEN.	<b>2,420</b>
TOLUENE	<b>11,800</b>
XYLENES	<b>12,090</b>
MTBE	<b>860</b>
IPE	ND
2,4-DI	45
DIMETH	ND
NAPHTH	<b>305</b>
PHENOL	32
C5-C8	<b>55,200</b>
C9-C18	<b>21,351</b>
C19-C36	ND
C9-C22	<b>11,581</b>



DW-1 (10/24/00)	
COMPOUND	RESULTS
LEAD	<b>33</b>
EDB	<b>0.14</b>
CHLOROF	<b>20.8</b>
1,2-DICL	<b>3.2</b>
BENZENE	<b>498</b>
ETHYLBEN.	6.6
TOLUENE	12.8
XYLENES	47.1
MTBE	30.5
IPE	29.7
2,4-DI	ND
DIMETH	ND
NAPHTH	ND
PHENOL	ND
C5-C8	<b>1,110</b>
C9-C18	136
C19-C36	134
C9-C22	<b>359</b>

MW-3 (10/24/00)	
COMPOUND	RESULTS
LEAD	5
EDB	<b>47.8</b>
CHLOROF	ND
1,2-DICL	<b>720</b>
BENZENE	<b>16,600</b>
ETHYLBEN.	<b>2,650</b>
TOLUENE	<b>20,800</b>
XYLENES	<b>13,120</b>
MTBE	<b>605</b>
IPE	ND
2,4-DI	ND
DIMETH	18
NAPHTH	<b>360</b>
PHENOL	ND
C5-C8	<b>81,400</b>
C9-C18	<b>23,620</b>
C19-C36	ND
C9-C22	<b>8,720</b>

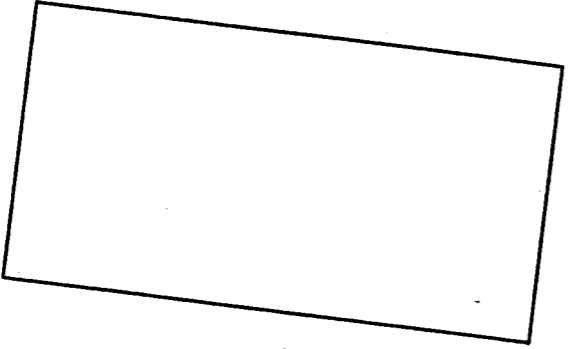
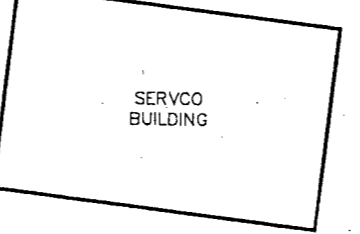
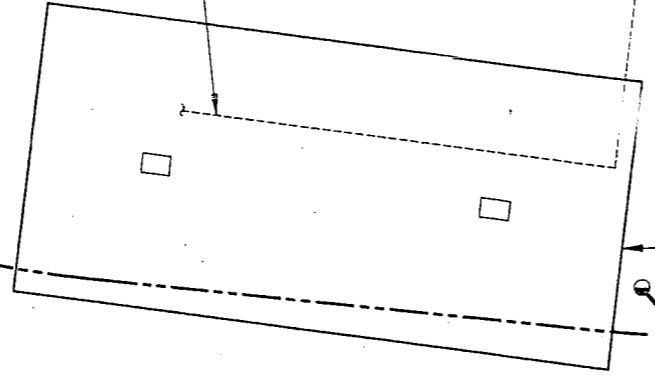
CANOPY



MW-4 (10/24/00)	
COMPOUND	RESULTS
LEAD	9
EDB	ND
CHLOROF	ND
1,2-DICL	ND
BENZENE	<b>319</b>
ETHYLBEN.	<b>1,150</b>
TOLUENE	<b>2,390</b>
XYLENES	<b>6,190</b>
MTBE	ND
IPE	ND
2,4-DI	ND
DIMETH	ND
NAPHTH	11
PHENOL	ND
C5-C8	<b>5,620</b>
C9-C18	<b>9,160</b>
C19-C36	ND
C9-C22	<b>5,010</b>



PRODUCT LINE






PROPERTY LINE

RUTHERFORD STREET

CASWELL STREET (HWY 74)

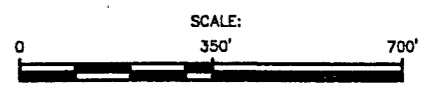


**LEGEND**

-  PROPERTY LINE
-  SERVCO SITE
-  4227 BLUE DRAWING ID DENOTES THAT A WATER SUPPLY WELL IS LOCATED ON THE PROPERTY

ADJACENT PROPERTIES		
DRAWING ID	BLOCK-PARCEL	OWNER NAME
0360	75-0360	HELDERMAN, KENNETH R. SERVICE OIL COMPANY #1
9374	65-9374	HELDERMAN, KENNETH R. SERVICE OIL COMPANY #1
0415	75-0415	GRANITE DEVELOPMENT LTD.
1422	75-1422	SERVICE OIL DISTRIBUTING CO. #2
3450	75-3450	PLANK ROAD REALTY, INC.
2366	75-2366	HUNTLEY, ROBERT W. & EVALYN A.
2248	75-2248	HUNTLEY, ROBERT W. & EVALYN A.
2030	75-2030	TAYLOR, ELIZABETH ET AL.
0110	75-0110	TAYLOR ELIZABETH & ANN SHOWELL
9019	65-9019	DEESE, BENNETT W.
7147	65-7147	HUNTLEY CHEVROLET-GEO-BUICK
7343	65-7343	HUNTLEY CHEVROLET-GEO-BUICK
6486	65-8486	PINKSTON, PAULINE HERS
PRIVATE WATER SUPPLY WELLS		
DRAWING ID	BLOCK-PARCEL	OWNER NAME
4227	76-4227	McBRIDE, J.E. JR. & LUCY
8222	76-8222	McBRIDE, J.E. JR. & LUCY

- NOTES:**
1. BASE MAP CREATED FROM ELECTRONIC PROPERTY MAP PROVIDED BY ANSON COUNTY.
  2. ALL LOCATIONS ARE APPROXIMATE.



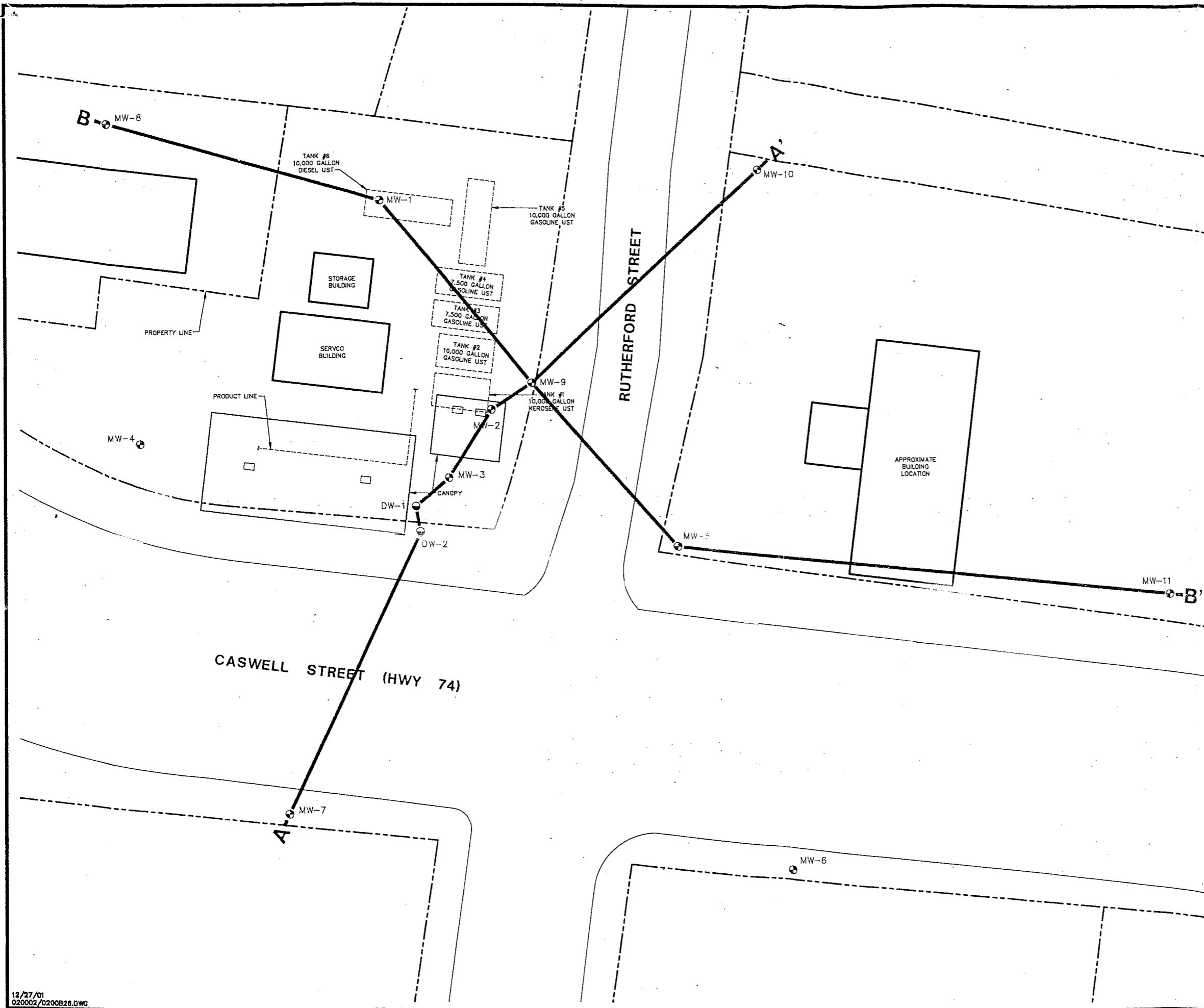
1500'  
RADIUS

SERVCO # 00911  
302-304 CASWELL STREET  
WADESBORO, NORTH CAROLINA

**ADJACENT PROPERTIES AND  
PRIVATE WATER SUPPLY WELLS**



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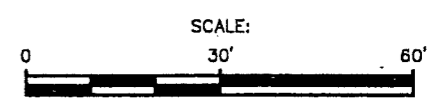
**LEGEND**

- FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- ⊙ MONITORING WELL - DEEP

A—A' CROSS SECTION TRANSECT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



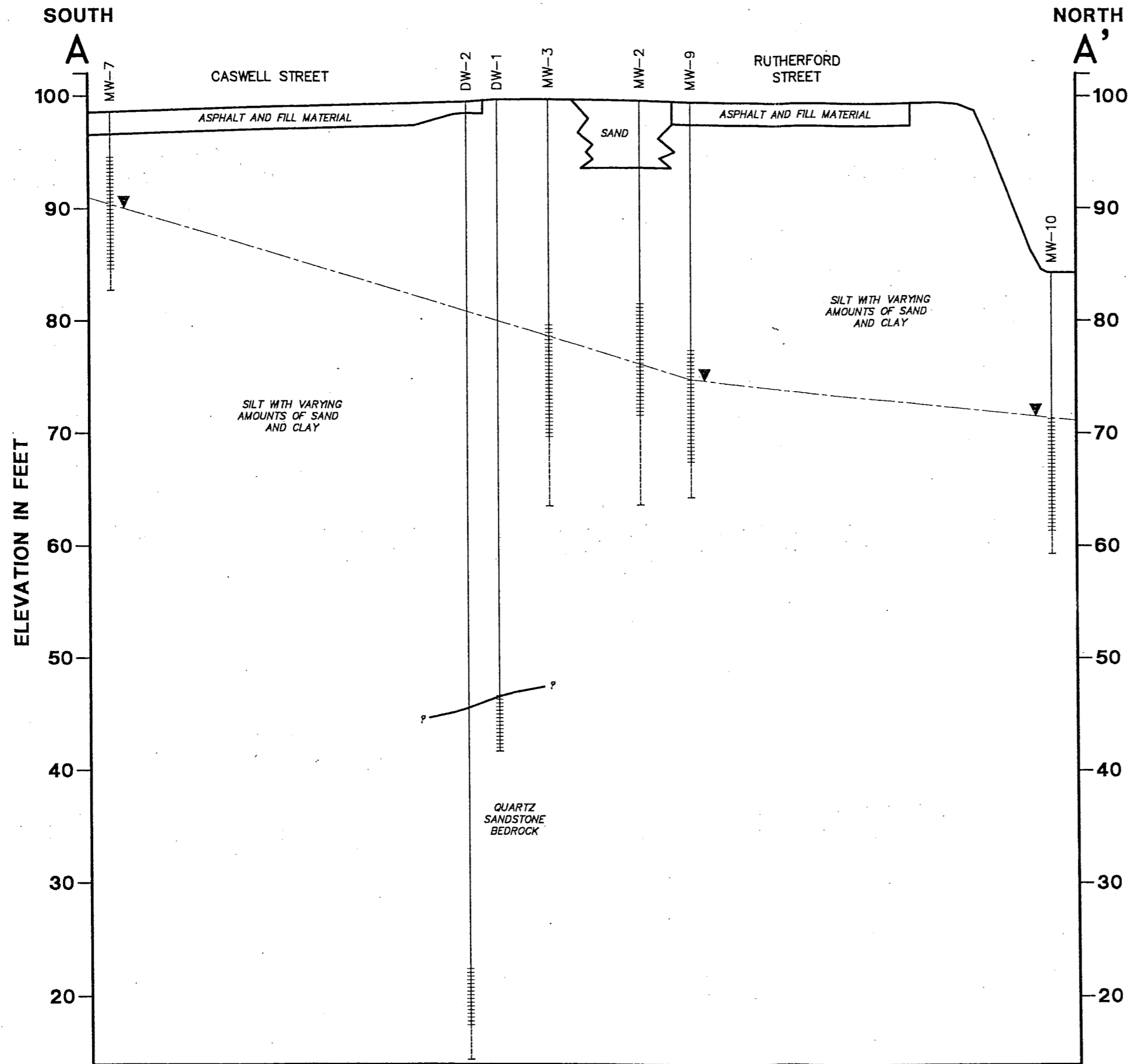
SERVO # 00911  
302-304 CASWELL STREET  
WADESBORO, NORTH CAROLINA

**GEOLOGIC  
CROSS SECTION  
TRANSECTS**

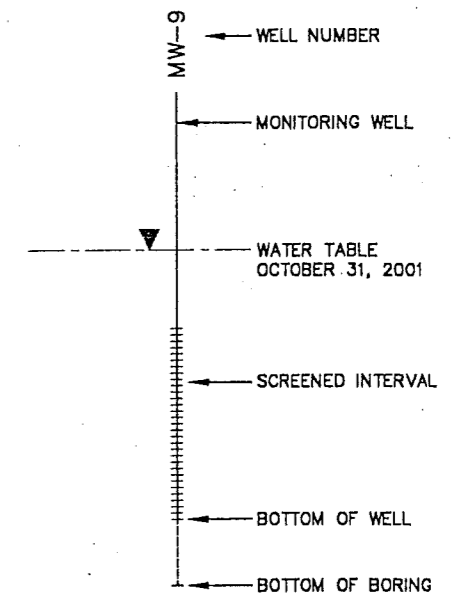


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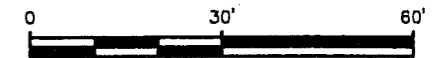
**FIGURE  
7**



**LEGEND**



HORIZONTAL SCALE:



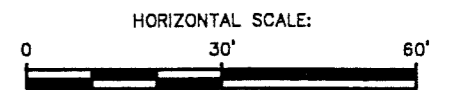
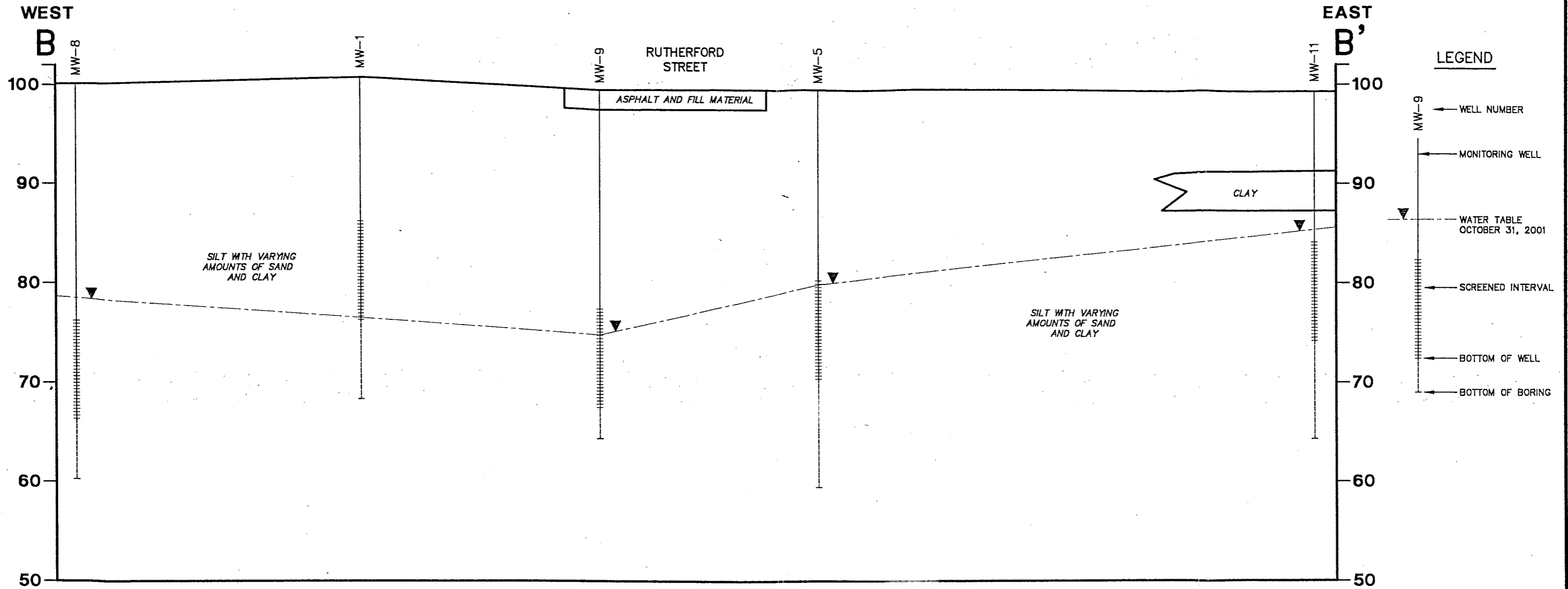
SERVO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**GEOLOGIC  
 CROSS SECTION  
 A-A'**




Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

FIGURE  
**8**



SERVCO # 00911  
302-304 CASWELL STREET  
WADESBORO, NORTH CAROLINA

**GEOLOGIC  
CROSS SECTION  
B-B'**

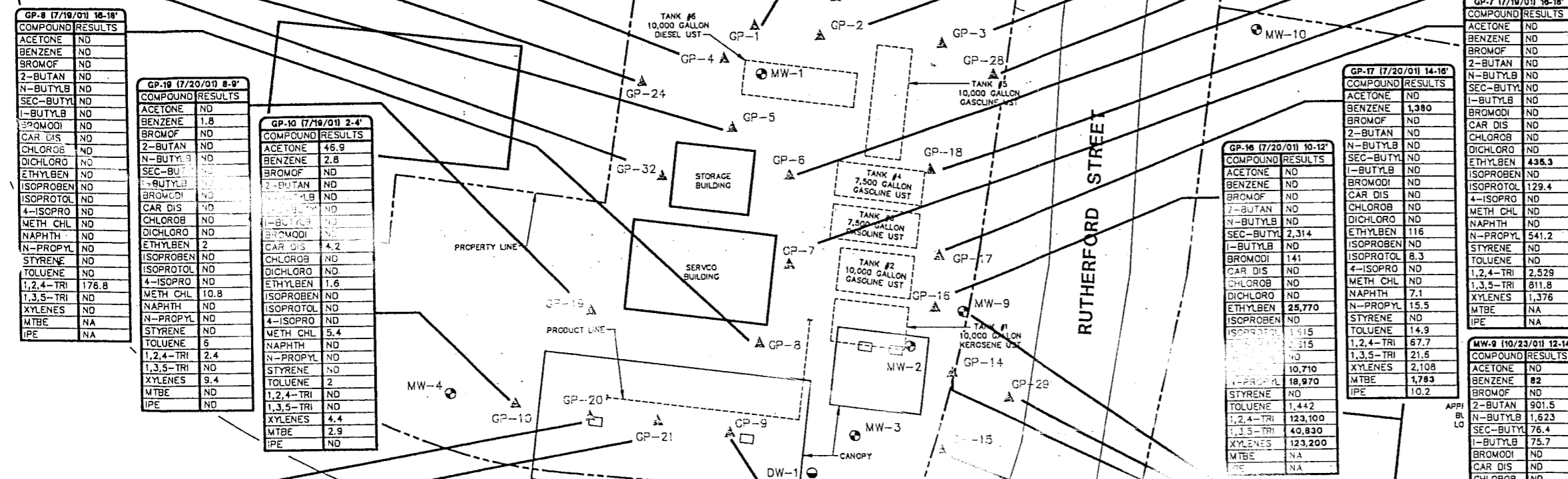


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Assessment • Design • Remediation

**FIGURE  
9**



GP-32 (10/23/01) 8-10'	GP-5 (7/18/01) 18-20'	GP-24 (10/23/01) 18-20'	GP-4 (7/18/01) 12-14'	GP-25 (10/23/01) 8-10'	GP-26 (10/23/01) 14-18'	GP-1 (7/18/01) 14-18'	GP-27 (10/23/01) 8-8'	GP-2 (7/18/01) 16-18'	GP-3 (7/18/01) 14-16'	GP-28 (10/23/01) 12-14'	GP-8 (7/18/01) 10-12'	GP-18 (7/20/01) 14-18'
ACETONE 89.9	ACETONE ND	ACETONE ND	ACETONE ND	ACETONE 222.2	ACETONE ND	ACETONE ND	ACETONE 273.9	ACETONE ND	ACETONE ND	ACETONE 820.3	ACETONE ND	ACETONE ND
BENZENE ND	BENZENE ND	BENZENE ND	BENZENE 558.2	BENZENE ND	BENZENE 11.4	BENZENE 51.9	BENZENE 4.9	BENZENE 1,331	BENZENE ND	BENZENE 10.1	BENZENE 8.7	BENZENE 106.4
BROMOF ND	BROMOF ND	BROMOF 80.4	BROMOF ND	BROMOF 37.4	BROMOF ND	BROMOF ND	BROMOF 44.7	BROMOF ND	BROMOF ND	BROMOF 54.6	BROMOF ND	BROMOF ND
2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN 78.4	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN 108.5	2-BUTAN ND	2-BUTAN ND
N-BUTYL ND	N-BUTYL 1,792	N-BUTYL ND	N-BUTYL 1,865	N-BUTYL ND	N-BUTYL 5.8	N-BUTYL 120.1	N-BUTYL ND	N-BUTYL 103.5	N-BUTYL ND	N-BUTYL 2.4	N-BUTYL 3.2	N-BUTYL ND
SEC-BUTYL ND	SEC-BUTYL 48.1	SEC-BUTYL ND	SEC-BUTYL 1,483	SEC-BUTYL ND	SEC-BUTYL 8.6	SEC-BUTYL 111.6	SEC-BUTYL ND	SEC-BUTYL 91.2	SEC-BUTYL ND	SEC-BUTYL 9.3	SEC-BUTYL 2.7	SEC-BUTYL ND
I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL 179.8	I-BUTYL ND	I-BUTYL ND	I-BUTYL 11.1	I-BUTYL ND	I-BUTYL 9.3	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND
BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND
CAR DIS 2.1	CAR DIS 3	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND
CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND
DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO 2.1	DICHLORO 2.2	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND
ETHYLBEN ND	ETHYLBEN 5,565	ETHYLBEN ND	ETHYLBEN 174.2	ETHYLBEN ND	ETHYLBEN ND	ETHYLBEN 6.2	ETHYLBEN ND	ETHYLBEN 55.7	ETHYLBEN ND	ETHYLBEN 6.2	ETHYLBEN 6.1	ETHYLBEN ND
ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN 8.3	ISOPROBEN ND	ISOPROBEN 6.1	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN 11.8	ISOPROBEN ND	ISOPROBEN ND
ISOPROTOL ND	ISOPROTOL 102.5	ISOPROTOL ND	ISOPROTOL 758.4	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL 63.5	ISOPROTOL ND	ISOPROTOL 122.7	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL ND
4-ISOPRO ND	4-ISOPRO 22.3	4-ISOPRO ND	4-ISOPRO 284	4-ISOPRO ND	4-ISOPRO 8.6	4-ISOPRO 5.7	4-ISOPRO ND	4-ISOPRO 20.4	4-ISOPRO ND	4-ISOPRO ND	4-ISOPRO ND	4-ISOPRO ND
METH CHL ND	METH CHL 7.9	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL 5.2	METH CHL ND	METH CHL ND
NAPHTH 7	NAPHTH 2,855	NAPHTH ND	NAPHTH 5,315	NAPHTH ND	NAPHTH ND	NAPHTH 662.9	NAPHTH 15.7	NAPHTH 210	NAPHTH ND	NAPHTH 13.9	NAPHTH ND	NAPHTH ND
N-PROPYL ND	N-PROPYL 2,929	N-PROPYL ND	N-PROPYL 1,629	N-PROPYL ND	N-PROPYL 4.2	N-PROPYL 116.3	N-PROPYL ND	N-PROPYL 319.2	N-PROPYL ND	N-PROPYL 3.1	N-PROPYL 2.7	N-PROPYL ND
STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND
TOLUENE ND	TOLUENE 10.5	TOLUENE ND	TOLUENE ND	TOLUENE ND	TOLUENE 2.2	TOLUENE ND	TOLUENE 3.2	TOLUENE 23.5	TOLUENE ND	TOLUENE 4.2	TOLUENE 4.8	TOLUENE ND
1,2,4-TRI 3.1	1,2,4-TRI 19,880	1,2,4-TRI ND	1,2,4-TRI 275.3	1,2,4-TRI ND	1,2,4-TRI 28.2	1,2,4-TRI ND	1,2,4-TRI 8.3	1,2,4-TRI 18.9	1,2,4-TRI ND	1,2,4-TRI 14.2	1,2,4-TRI 7.2	1,2,4-TRI 142.9
1,3,5-TRI ND	1,3,5-TRI 3,815	1,3,5-TRI ND	1,3,5-TRI 123.6	1,3,5-TRI ND	1,3,5-TRI 18.6	1,3,5-TRI ND	1,3,5-TRI ND	1,3,5-TRI 10.2	1,3,5-TRI ND	1,3,5-TRI 3.2	1,3,5-TRI 2.3	1,3,5-TRI ND
XYLENES 3.5	XYLENES 8,631	XYLENES ND	XYLENES 679.8	XYLENES ND	XYLENES 6.3	XYLENES 42	XYLENES 8.9	XYLENES 153.9	XYLENES ND	XYLENES 25	XYLENES 19.7	XYLENES 160.7
MTBE ND	MTBE NA	MTBE ND	MTBE NA	MTBE ND	MTBE ND	MTBE NA	MTBE ND	MTBE NA	MTBE NA	MTBE ND	MTBE 7.5	MTBE NA
IPE ND	IPE NA	IPE ND	IPE NA	IPE ND	IPE ND	IPE NA	IPE ND	IPE NA	IPE NA	IPE ND	IPE ND	IPE NA



GP-20 (7/20/01) 14-16'	GP-21 (7/20/01) 12-14'	GP-11 (7/19/01) 14-18'	GP-12 (7/19/01) 12-14'	GP-31 (10/23/01) 4-8'	GP-13 (7/19/01) 14-18'	GP-9 (7/19/01) 8-8'	GP-23 (7/20/01) 12-14'	GP-30 (10/23/01) 16-18'	GP-15 (7/20/01) 2-4'	GP-14 (7/20/01) 2-4'	GP-29 (10/23/01) 8-10'
ACETONE ND	ACETONE ND	ACETONE ND	ACETONE ND	ACETONE ND	ACETONE ND	ACETONE ND	ACETONE 3,344	ACETONE ND	ACETONE ND	ACETONE ND	ACETONE 88.3
BENZENE 10,400	BENZENE 8,274	BENZENE 988.4	BENZENE 1,712	BENZENE 5.8	BENZENE 3,372	BENZENE ND	BENZENE 4	BENZENE 50.3	BENZENE ND	BENZENE ND	BENZENE 3.5
BROMOF ND	BROMOF ND	BROMOF ND	BROMOF ND	BROMOF 30.8	BROMOF ND	BROMOF ND	BROMOF ND	BROMOF ND	BROMOF ND	BROMOF ND	BROMOF ND
2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN 3.2	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND	2-BUTAN ND
N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND	N-BUTYL ND
SEC-BUTYL ND	SEC-BUTYL 35.5	SEC-BUTYL 33.3	SEC-BUTYL 243.8	SEC-BUTYL ND	SEC-BUTYL 34.1	SEC-BUTYL ND	SEC-BUTYL 1,325	SEC-BUTYL ND	SEC-BUTYL ND	SEC-BUTYL 134.6	SEC-BUTYL ND
I-BUTYL 7,500	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND	I-BUTYL ND
BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND	BROMODI ND
CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND	CAR DIS ND
CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND	CHLOROB ND
DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND	DICHLORO ND
ETHYLBEN ND	ETHYLBEN 59,520	ETHYLBEN ND	ETHYLBEN 18,730	ETHYLBEN 3.4	ETHYLBEN 10,120	ETHYLBEN ND	ETHYLBEN 16,660	ETHYLBEN ND	ETHYLBEN ND	ETHYLBEN 179.5	ETHYLBEN 4.1
ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN 5.1	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN 5.1	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND	ISOPROBEN ND
ISOPROTOL ND	ISOPROTOL 126	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL 130	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL 2,994	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL ND
4-ISOPRO ND	4-ISOPRO 18.3	4-ISOPRO ND	4-ISOPRO 15.7	4-ISOPRO ND	4-ISOPRO 16.1	4-ISOPRO ND	4-ISOPRO 2,675	4-ISOPRO ND	4-ISOPRO ND	4-ISOPRO 211.5	4-ISOPRO ND
METH CHL ND	METH CHL 9	METH CHL ND	METH CHL ND	METH CHL 7	METH CHL 9.6	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND	METH CHL ND
NAPHTH 8,554	NAPHTH 20,240	NAPHTH ND	NAPHTH 5,089	NAPHTH 3,610	NAPHTH ND	NAPHTH ND	NAPHTH 8,750	NAPHTH 15.8	NAPHTH ND	NAPHTH 1,135	NAPHTH 8.8
N-PROPYL 10,120	N-PROPYL 22,080	N-PROPYL ND	N-PROPYL 7,532	N-PROPYL 4,268	N-PROPYL ND	N-PROPYL ND	N-PROPYL 5,312	N-PROPYL ND	N-PROPYL ND	N-PROPYL 166.7	N-PROPYL ND
STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND	STYRENE ND
TOLUENE 45,080	TOLUENE 112,500	TOLUENE ND	TOLUENE 7,088	TOLUENE 76	TOLUENE 143.7	TOLUENE ND	TOLUENE 35,120	TOLUENE 8.2	TOLUENE ND	TOLUENE ND	TOLUENE 5.5
1,2,4-TRI 60,120	1,2,4-TRI 150,000	1,2,4-TRI 48,710	1,2,4-TRI 17,3	1,2,4-TRI 26,280	1,2,4-TRI ND	1,2,4-TRI ND	1,2,4-TRI 44,310	1,2,4-TRI 8.2	1,2,4-TRI ND	1,2,4-TRI 1,167	1,2,4-TRI 5.5
1,3,5-TRI 19,760	1,3,5-TRI 43,510	1,3,5-TRI 19,000	1,3,5-TRI 5,081	1,3,5-TRI 5.1	1,3,5-TRI 8,110	1,3,5-TRI ND	1,3,5-TRI 11,880	1,3,5-TRI ND	1,3,5-TRI ND	1,3,5-TRI 185.9	1,3,5-TRI ND
XYLENES 141,000	XYLENES 278,800	XYLENES 48,920	XYLENES 28,100	XYLENES 159.9	XYLENES 15.9	XYLENES ND	XYLENES 352.6	XYLENES 9.2	XYLENES 171.2	XYLENES 352.6	XYLENES 12.3
MTBE ND	MTBE ND	MTBE ND	MTBE 500	MTBE ND	MTBE ND	MTBE NA	MTBE NA	MTBE ND	MTBE NA	MTBE NA	MTBE ND
IPE ND	IPE ND	IPE ND	IPE ND	IPE ND	IPE ND	IPE NA	IPE NA	IPE ND	IPE NA	IPE NA	IPE ND

**LEGEND**

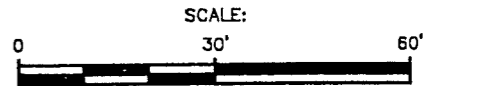
- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- ▲ SOIL BORING

**SOIL ANALYTICAL RESULTS IN MICROGRAMS PER KILOGRAM (ug/Kg)**

GP-28 (10/23/01) 14-18'	GP-17 (7/20/01) 14-18'	GP-16 (7/20/01) 10-12'	MW-8 (10/23/01) 12-14'
ACETONE NA	ACETONE ND	ACETONE ND	ACETONE ND
BENZENE NA	BENZENE 1,380	BENZENE ND	BENZENE 82
BROMOF NA	BROMOF ND	BROMOF ND	BROMOF ND
2-BUTAN NA	2-BUTAN ND	2-BUTAN ND	2-BUTAN 901.5
N-BUTYL NA	N-BUTYL ND	N-BUTYL ND	N-BUTYL 1,623
SEC-BUTYL NA	SEC-BUTYL ND	SEC-BUTYL ND	SEC-BUTYL 76.4
I-BUTYL NA	I-BUTYL ND	I-BUTYL ND	I-BUTYL 75.7
BROMODI NA	BROMODI ND	BROMODI ND	BROMODI ND
CAR DIS NA	CAR DIS ND	CAR DIS ND	CAR DIS ND
CHLOROB NA	CHLOROB ND	CHLOROB ND	CHLOROB ND
DICHLORO NA	DICHLORO ND	DICHLORO ND	DICHLORO ND
ETHYLBEN NA	ETHYLBEN 436.3	ETHYLBEN 116	ETHYLBEN 4,091
ISOPROBEN NA	ISOPROBEN ND	ISOPROBEN 8.3	ISOPROBEN 1,494
ISOPROTOL NA	ISOPROTOL ND	ISOPROTOL ND	ISOPROTOL ND
4-ISOPRO NA	4-ISOPRO ND	4-ISOPRO ND	4-ISOPRO 75.7
METH CHL NA	METH CHL ND	METH CHL ND	METH CHL ND
NAPHTH NA	NAPHTH 7.1	NAPHTH 15.5	NAPHTH 3,198
N-PROPYL NA	N-PROPYL 15.5	N-PROPYL 14.9	N-PROPYL 3,148
STYRENE NA	STYRENE ND	TOLUENE ND	STYRENE ND
TOLUENE NA	TOLUENE ND	TOLUENE 14.9	TOLUENE 53.7
1,2,4-TRI NA	1,2,4-TRI ND	1,2,4-TRI 67.7	1,2,4-TRI 5,272
1,3,5-TRI NA	1,3,5-TRI ND	1,3,5-TRI 21.6	1,3,5-TRI 6,728
XYLENES NA	XYLENES 2,108	XYLENES 10,710	XYLENES 23,280
MTBE NA	MTBE 1,783	MTBE 10,970	MTBE ND
IPE NA	IPE 10.2	IPE 18,970	IPE 45.7

**NOTES:**

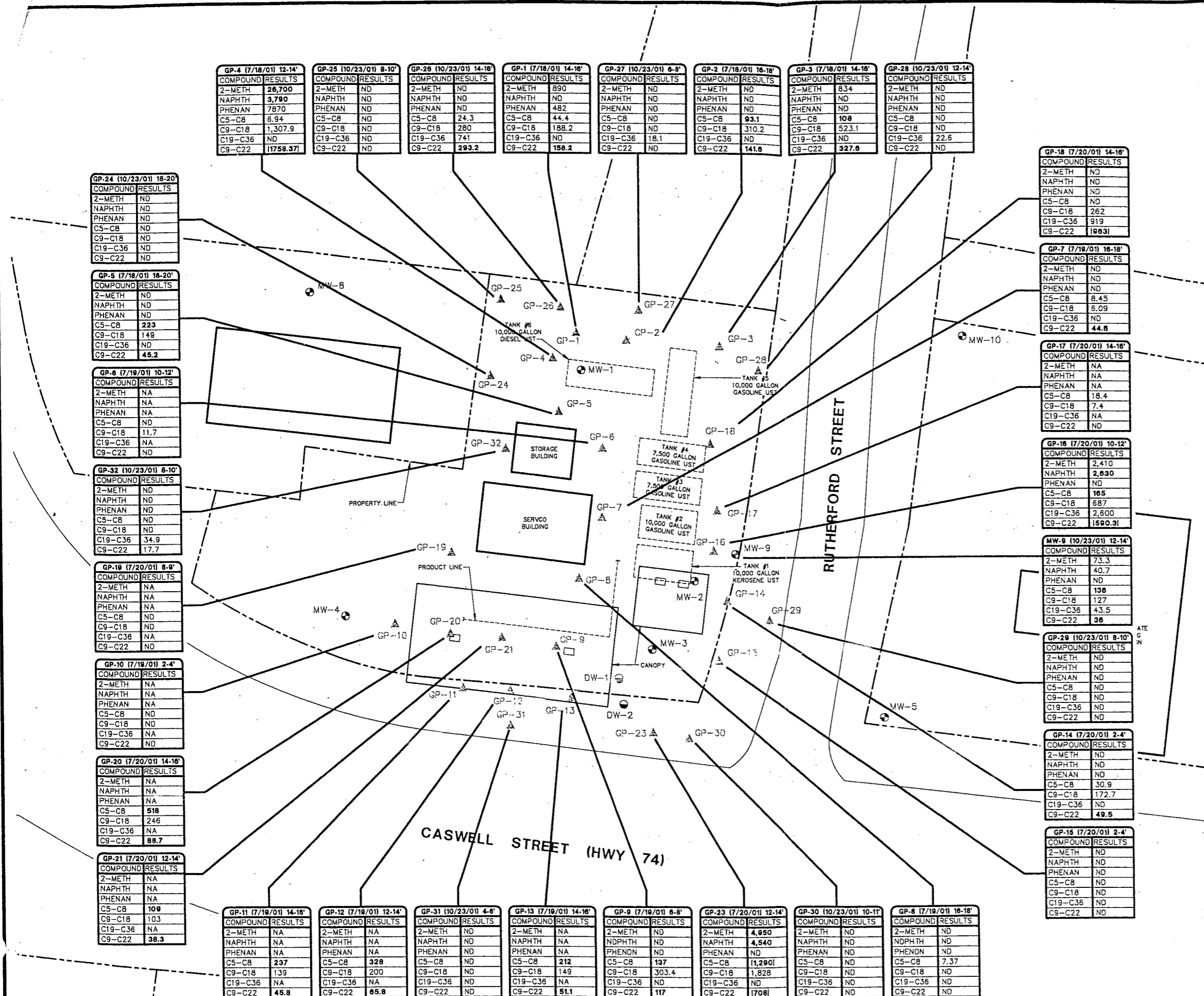
- BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
- ALL LOCATIONS ARE APPROXIMATE.



SERVO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**SOIL SAMPLE LOCATIONS AND ANALYTICAL RESULTS**  
 CSA - METHOD 8260

Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation



**LEGEND**

- ☐ FUEL PUMP
- MONITORING WELL - SHALLOW
- ⊙ MONITORING WELL - DEEP
- ▲ SOIL BORING

SOIL ANALYTICAL RESULTS IN MICROGRAMS PER KILOGRAM (ug/Kg), UNLESS OTHERWISE NOTED:

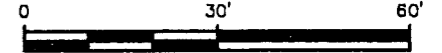
COMPOUND	RESULTS	SAMPLE NUMBER (DATE) DEPTH
2-METH	NA	2-METHYLNAPHTHALENE
NAPHTH	NA	NAPHTHALENE
PHENAN	NA	PHENANTHRENE
C5-C8	NA	C5-C8 ALIPHATICS (mg/Kg)
C9-C18	NA	C9-C18 ALIPHATICS (mg/Kg)
C19-C36	NA	C19-C36 ALIPHATICS (mg/Kg)
C9-C22	NA	C9-C22 AROMATICS (mg/Kg)

ND NOT DETECTED  
 NA NOT ANALYZED  
**380** BOLD VALUE INDICATES THE RESULT EXCEEDS THE SOIL TO GROUND WATER MSCC  
 [1590.3] VALUE IN BRACKETS INDICATES THE RESULT EXCEEDS THE RESIDENTIAL MSCC

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

**SCALE:**



SERVCO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**SOIL SAMPLE LOCATIONS  
 AND ANALYTICAL RESULTS  
 CSA - METHODS 8270 & MADEP**

Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

**FIGURE  
11**

GP-4 (7/18/01) 12-14'	GP-25 (10/23/01) 8-10'	GP-26 (10/23/01) 14-18'	GP-1 (7/18/01) 14-18'	GP-27 (10/23/01) 6-8'	GP-2 (7/18/01) 16-18'	GP-3 (7/18/01) 14-18'	GP-28 (10/23/01) 12-14'
2-METH 26,700	2-METH ND	2-METH ND	2-METH 890	2-METH ND	2-METH ND	2-METH 834	2-METH ND
NAPHTH 3,790	NAPHTH ND	NAPHTH ND	NAPHTH ND	NAPHTH ND	NAPHTH ND	NAPHTH ND	NAPHTH ND
PHENAN 7870	PHENAN ND	PHENAN ND	PHENAN 482	PHENAN ND	PHENAN ND	PHENAN ND	PHENAN ND
C5-C8 6.94	C5-C8 ND	C5-C8 24.3	C5-C8 44.4	C5-C8 ND	C5-C8 93.1	C5-C8 108	C5-C8 ND
C9-C18 1,307.9	C9-C18 ND	C9-C18 280	C9-C18 188.2	C9-C18 ND	C9-C18 310.2	C9-C18 523.1	C9-C18 ND
C19-C36 ND	C19-C36 ND	C19-C36 741	C19-C36 ND	C19-C36 18.1	C19-C36 ND	C19-C36 ND	C19-C36 22.6
C9-C22 [1758.37]	C9-C22 ND	C9-C22 <b>293.2</b>	C9-C22 158.2	C9-C22 ND	C9-C22 141.8	C9-C22 <b>327.6</b>	C9-C22 ND

GP-24 (10/23/01) 18-20'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 ND
C19-C36 ND
C9-C22 ND

GP-5 (7/18/01) 16-20'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 223
C9-C18 149
C19-C36 ND
C9-C22 45.2

GP-6 (7/19/01) 10-12'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 ND
C9-C18 11.7
C19-C36 NA
C9-C22 ND

GP-32 (10/23/01) 8-10'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 ND
C19-C36 34.9
C9-C22 17.7

GP-19 (7/20/01) 8-9'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 ND
C9-C18 ND
C19-C36 NA
C9-C22 ND

GP-10 (7/19/01) 2-4'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 ND
C9-C18 ND
C19-C36 NA
C9-C22 ND

GP-20 (7/20/01) 14-16'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 518
C9-C18 246
C19-C36 NA
C9-C22 88.7

GP-21 (7/20/01) 12-14'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 109
C9-C18 103
C19-C36 NA
C9-C22 38.3

GP-11 (7/19/01) 14-16'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 237
C9-C18 139
C19-C36 NA
C9-C22 45.8

GP-12 (7/19/01) 12-14'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 328
C9-C18 200
C19-C36 NA
C9-C22 85.8

GP-31 (10/23/01) 4-6'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 ND
C19-C36 ND
C9-C22 ND

GP-13 (7/19/01) 14-16'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 212
C9-C18 149
C19-C36 NA
C9-C22 51.1

GP-9 (7/19/01) 8-9'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 137
C9-C18 303.4
C19-C36 ND
C9-C22 117

GP-23 (7/20/01) 12-14'
2-METH 4,950
NAPHTH 4,540
PHENAN ND
C5-C8 [1,280]
C9-C18 1,828
C19-C36 ND
C9-C22 [708]

GP-30 (10/23/01) 10-11'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 ND
C19-C36 ND
C9-C22 ND

GP-8 (7/19/01) 16-18'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 7.37
C9-C18 ND
C19-C36 ND
C9-C22 ND

GP-18 (7/20/01) 14-16'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 262
C19-C36 919
C9-C22 [963]

GP-7 (7/19/01) 16-18'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 8.45
C9-C18 5.09
C19-C36 ND
C9-C22 44.8

GP-17 (7/20/01) 14-16'
2-METH NA
NAPHTH NA
PHENAN NA
C5-C8 18.4
C9-C18 7.4
C19-C36 NA
C9-C22 ND

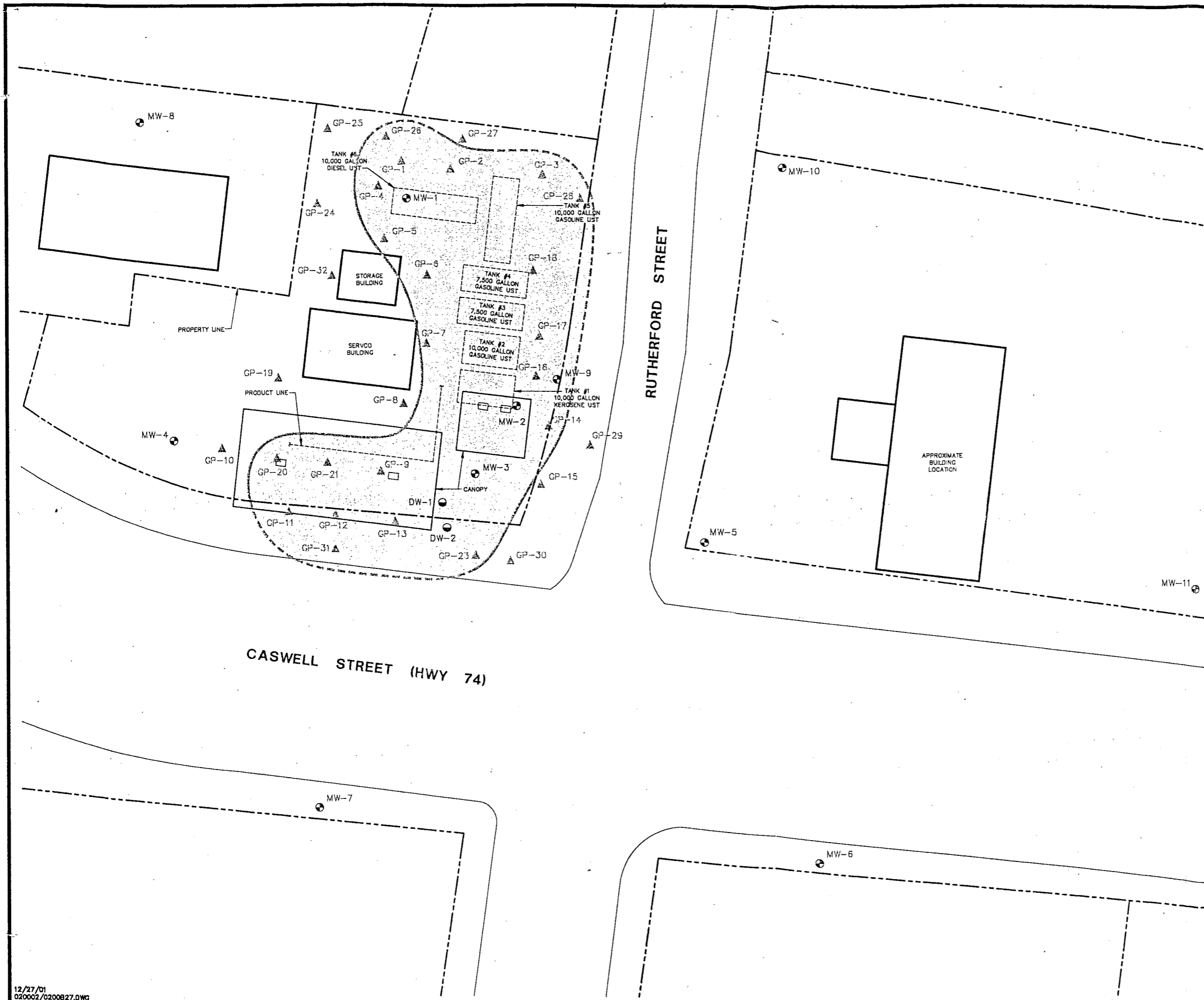
GP-16 (7/20/01) 10-12'
2-METH 2,410
NAPHTH 2,830
PHENAN ND
C5-C8 165
C9-C18 687
C19-C36 2,600
C9-C22 [1590.3]

MW-9 (10/23/01) 12-14'
2-METH 73.3
NAPHTH 40.7
PHENAN ND
C5-C8 136
C9-C18 127
C19-C36 43.5
C9-C22 36






GP-29 (10/23/01) 8-10'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 ND
C19-C36 ND
C9-C22 ND

GP-14 (7/20/01) 2-4'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 30.9
C9-C18 172.7
C19-C36 ND
C9-C22 49.5

GP-15 (7/20/01) 2-4'
2-METH ND
NAPHTH ND
PHENAN ND
C5-C8 ND
C9-C18 ND
C19-C36 ND
C9-C22 ND

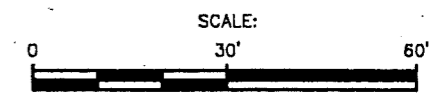


**LEGEND**

-  FUEL PUMP
-  MONITORING WELL - SHALLOW
-  MONITORING WELL - DEEP
-  SOIL BORING
-  INFERRED LATERAL EXTENT OF PETROLEUM IMPACTED SOIL


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



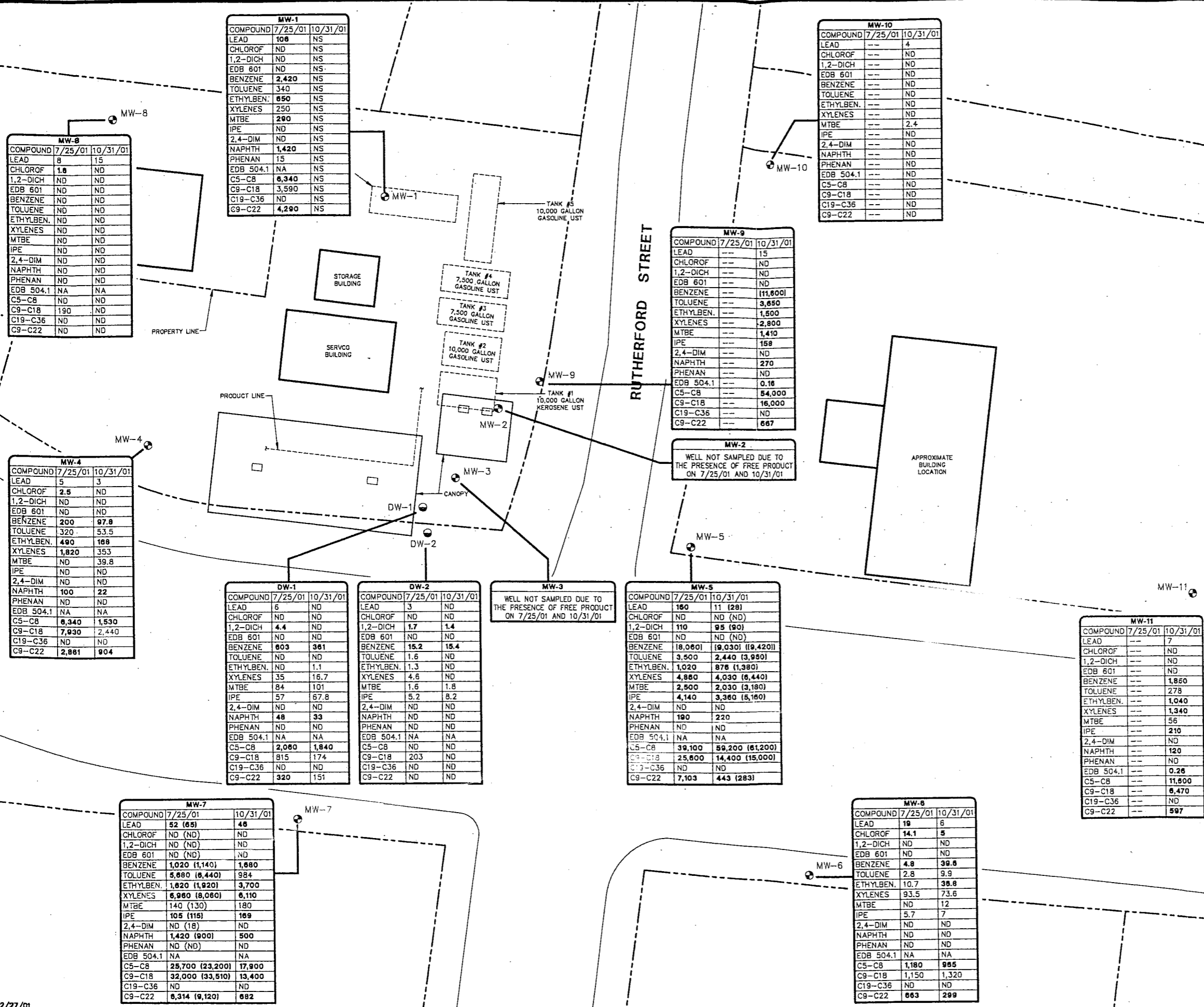
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 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**INFERRED LATERAL EXTENT OF  
 PETROLEUM IMPACTED SOIL**



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**FIGURE  
 12**



**LEGEND**

- FUEL PUMP
- MONITORING WELL — SHALLOW
- MONITORING WELL — DEEP

GROUND-WATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (ug/L)

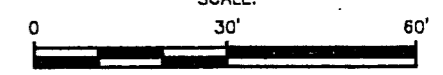
COMPUND	7/25/01	10/31/01	WELL NUMBER	SAMPLE DATE
LEAD	NA	NA	LEAD	LEAD
CHLOROF	NA	NA	CHLOROF	CHLOROF
1,2-DICH	NA	NA	1,2-DICH	1,2-DICHLOROETHANE
EDB 601	NA	NA	EDB 601	ETHYLENE DIBROMIDE (EPA METHOD 601)
BENZENE	NA	NA	BENZENE	BENZENE
TOLUENE	NA	NA	TOLUENE	TOLUENE
ETHYL BEN.	NA	NA	ETHYL BEN.	ETHYL BENZENE
XYLENES	NA	NA	XYLENES	XYLENES (TOTAL)
MTBE	NA	NA	MTBE	METHYL TERTIARY-BUTYL ETHER
IPE	NA	NA	IPE	ISOPROPYL ETHER
2,4-DIM	NA	NA	2,4-DIM	2,4-DIMETHYLPHENOL
NAPHTH	NA	NA	NAPHTH	NAPHTHALENE
PHENAN	NA	NA	PHENAN	PHENANTHRENE
EDB 504.1	NA	NA	EDB 504.1	ETHYLENE DIBROMIDE (EPA METHOD 504.1)
C5-C8	NA	NA	C5-C8	C5-C8 ALIPHATICS
C9-C18	NA	NA	C9-C18	C9-C18 ALIPHATICS
C19-C36	NA	NA	C19-C36	C19-C36 ALIPHATICS
C9-C22	NA	NA	C9-C22	C9-C22 AROMATICS

NS NOT SAMPLED  
 ND NOT DETECTED  
 NA NOT ANALYZED  
 700 BOLD VALUE INDICATES THE RESULT EXCEEDS 15A NCAC 2L STANDARDS  
 (8,060) BOLD VALUE IN BRACKETS INDICATES THE RESULT EXCEEDS THE GROSS CONTAMINATION LEVEL FOR GROUNDWATER (GCL)  
 (115) VALUE IN PARENTHESIS INDICATES DUPLICATE SAMPLE ANALYSIS

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

SCALE:

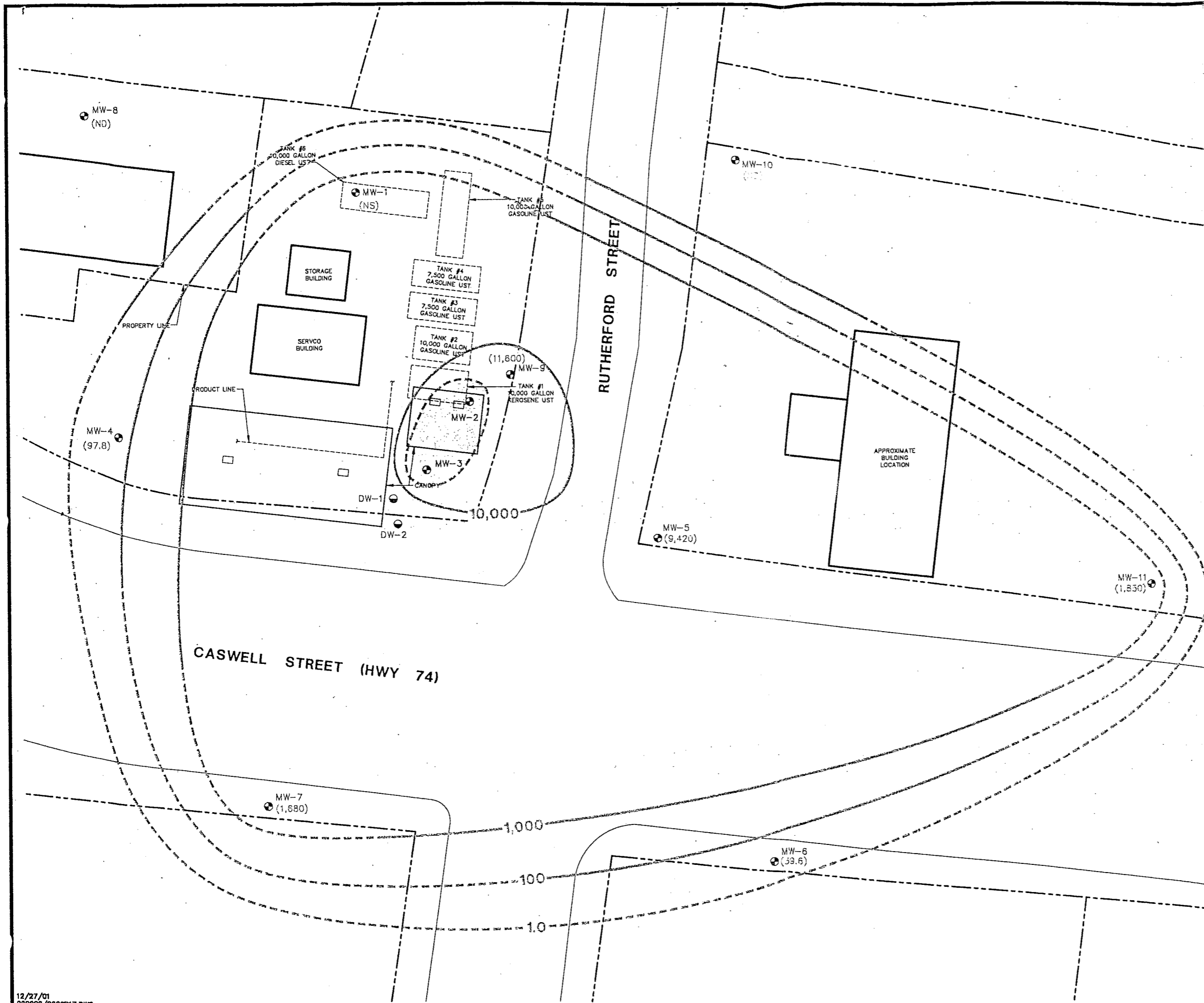


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**GROUND-WATER ANALYTICAL RESULTS  
 JULY 25 AND OCTOBER 31, 2001**

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**FIGURE  
 13**

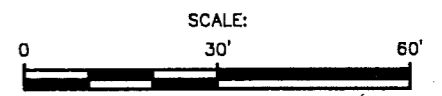


**LEGEND**

- FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- ⊙ MONITORING WELL - DEEP
- (97.8) BENZENE CONCENTRATION IN GROUND WATER (ug/L)
- 1.0 ——— BENZENE CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- ▨ APPROXIMATE EXTENT OF FREE PRODUCT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



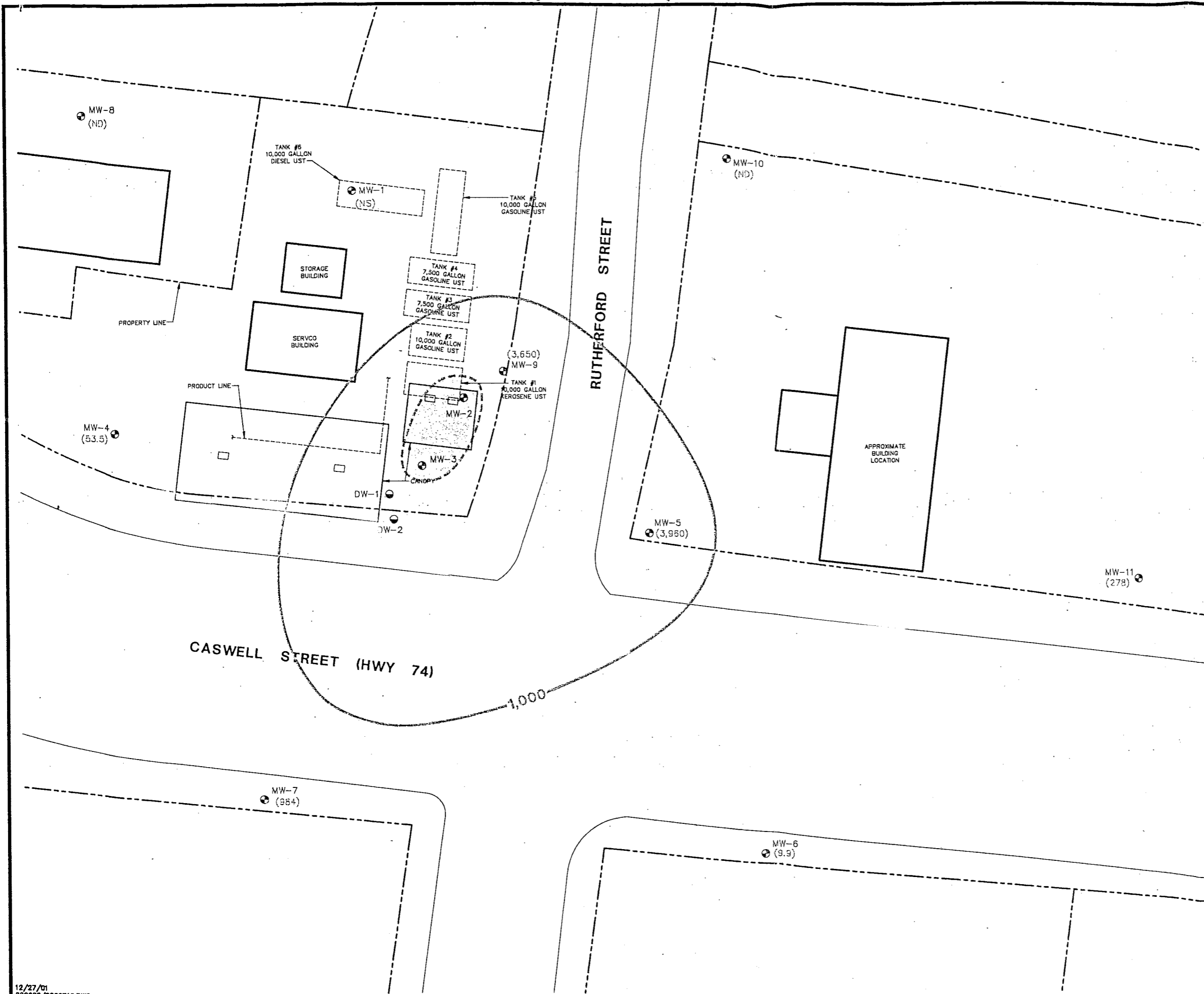
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 WADESBORO, NORTH CAROLINA

**BENZENE  
 ISOCONCENTRATION MAP  
 OCTOBER 31, 2001**



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FIGURE  
**14**

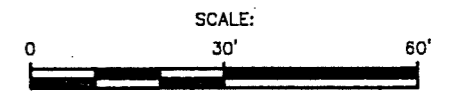


**LEGEND**

- FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (278) TOLUENE CONCENTRATION IN GROUND WATER (ug/L)
- 1,000 ——— TOLUENE CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- ▤ APPROXIMATE EXTENT OF FREE PRODUCT

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

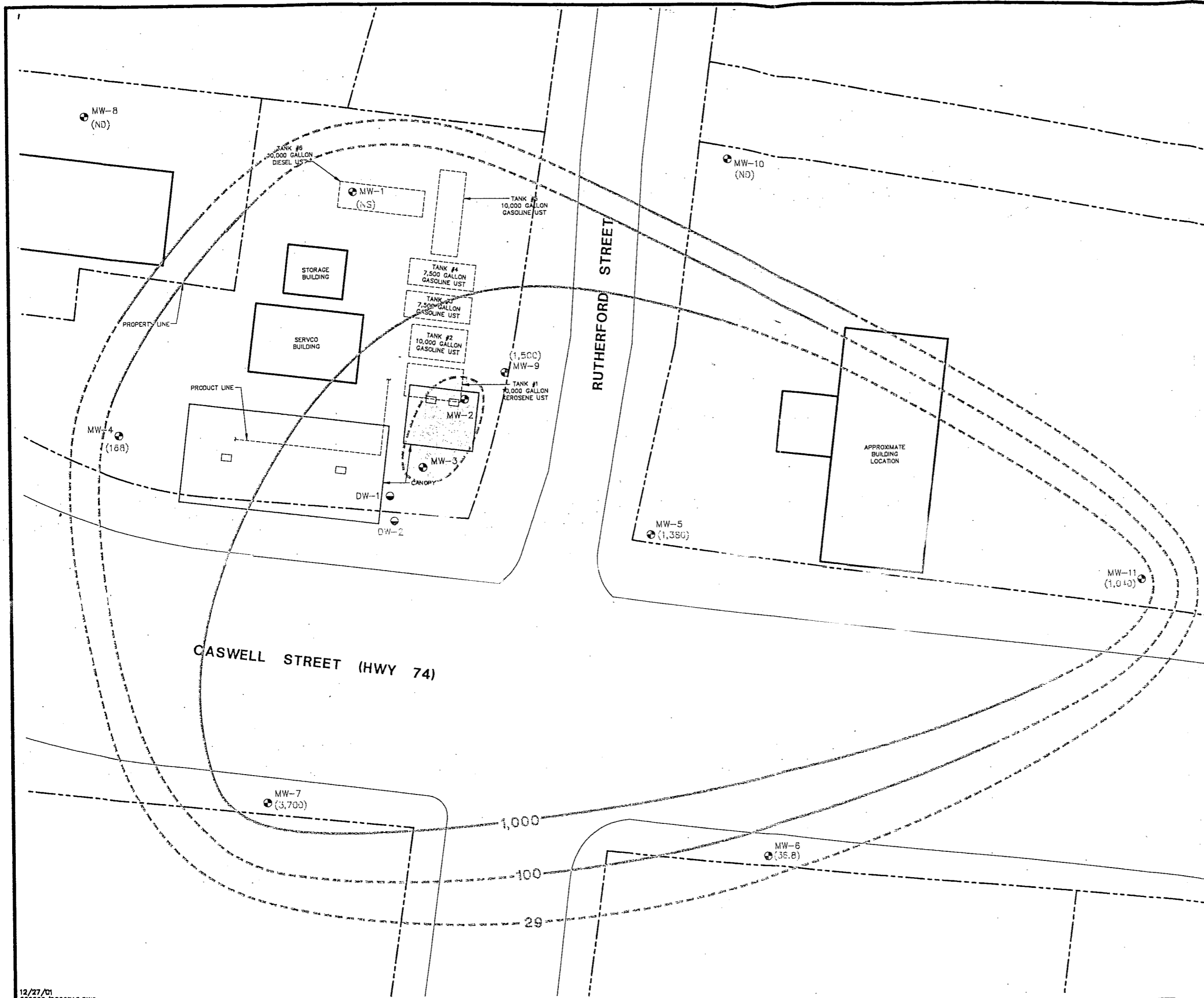


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**TOLUENE  
ISOCONCENTRATION MAP  
OCTOBER 31, 2001**

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**FIGURE  
15**

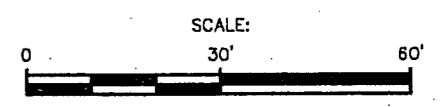


**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (168) ETHYLBENZENE CONCENTRATION IN GROUND WATER (ug/L)
- 29 --- ETHYLBENZENE CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- ▨ APPROXIMATE EXTENT OF FREE PRODUCT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



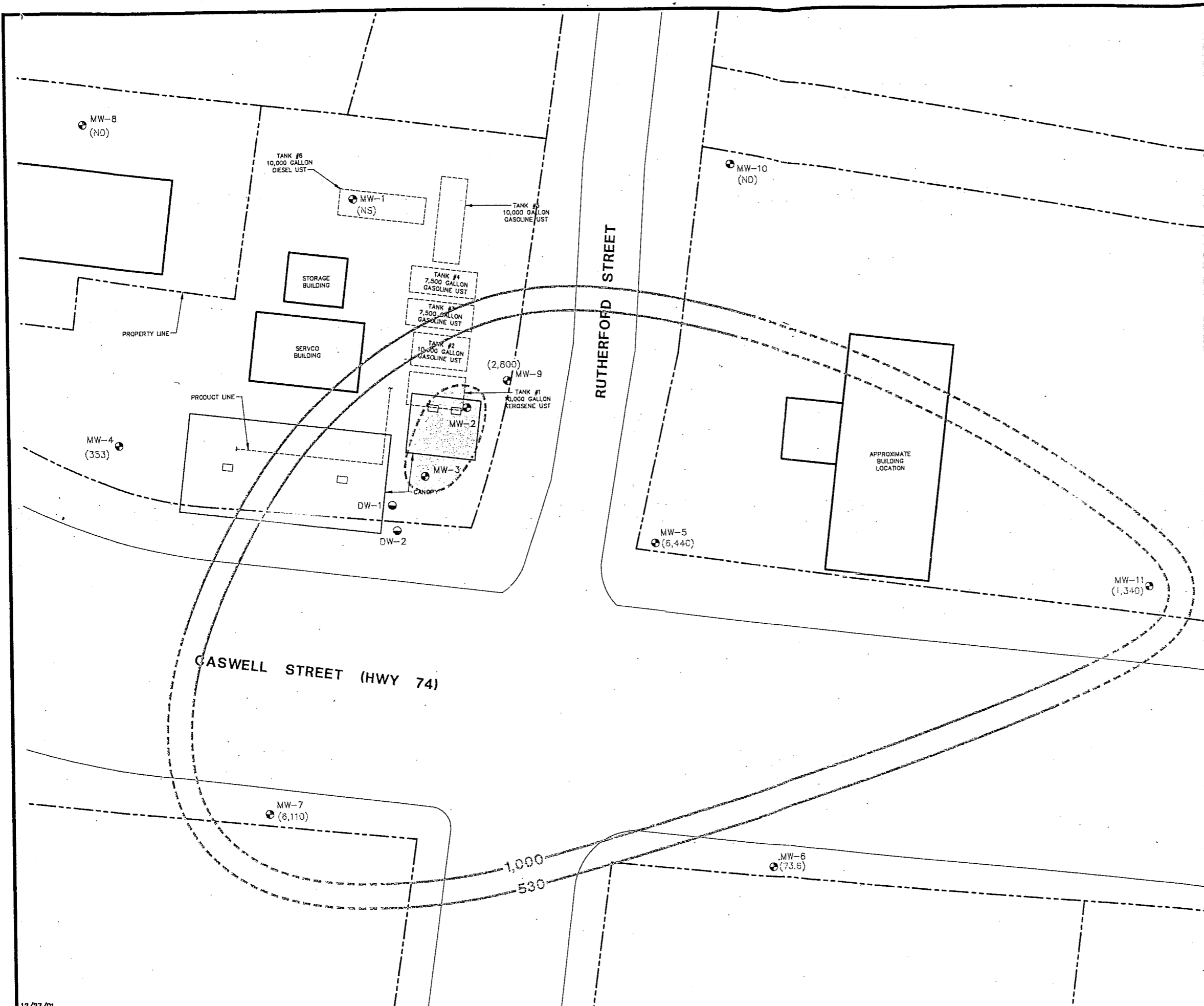
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WADESBORO, NORTH CAROLINA

**ETHYLBENZENE  
ISOCONCENTRATION MAP  
OCTOBER 31, 2001**



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**FIGURE  
16**

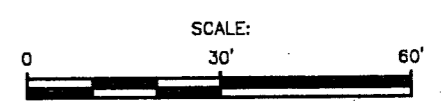


**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (353) TOTAL XYLENES CONCENTRATION IN GROUND WATER (ug/L)
- 530 ——— TOTAL XYLENES CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- APPROXIMATE EXTENT OF FREE PRODUCT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



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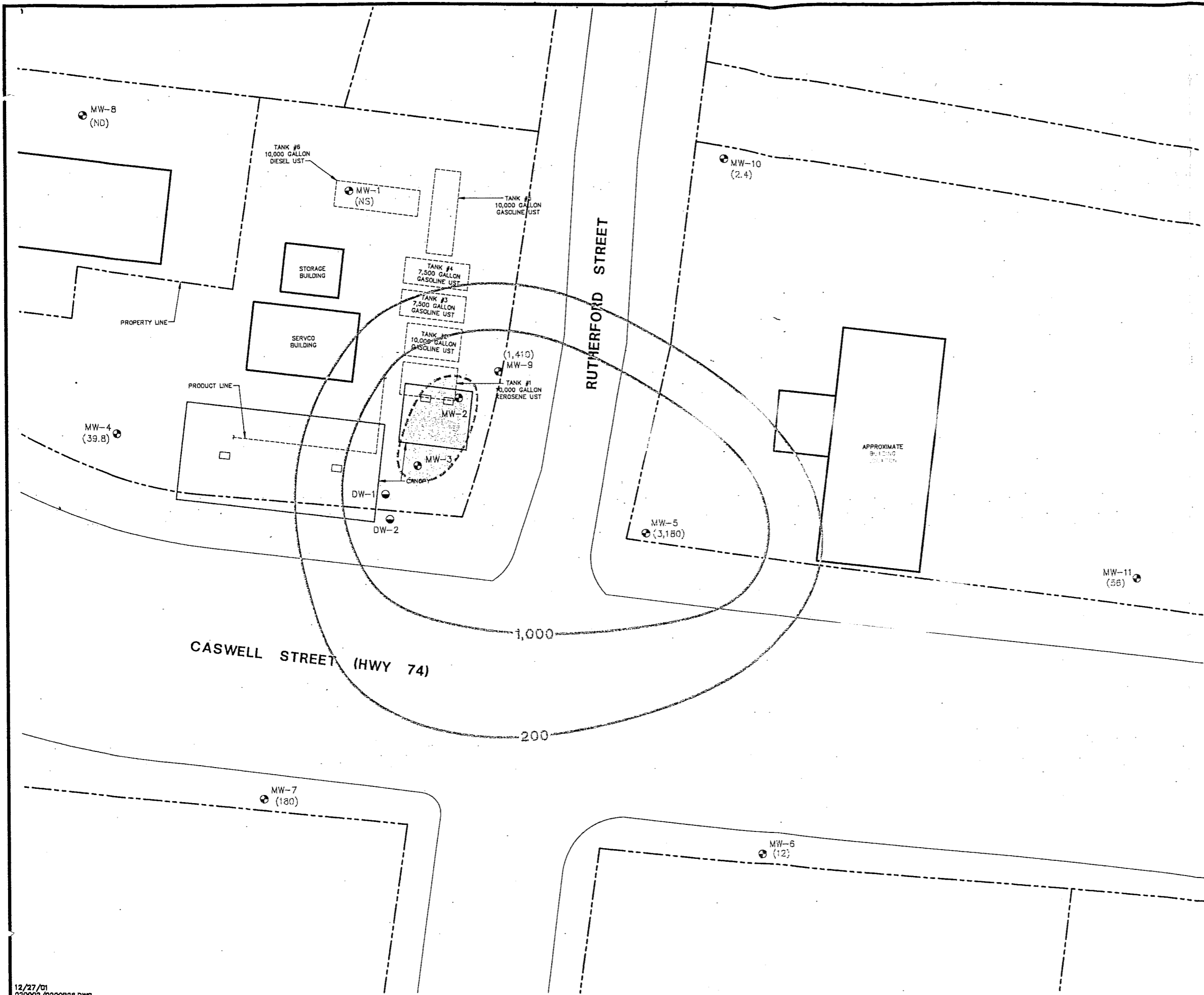
**TOTAL XYLENES  
ISOCONCENTRATION MAP  
OCTOBER 31, 2001**



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**FIGURE  
17**



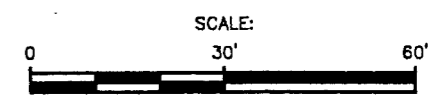


**LEGEND**

- FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (180) MTBE CONCENTRATION IN GROUND WATER (ug/L)
- 200 ——— MTBE CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- ▭ APPROXIMATE EXTENT OF FREE PRODUCT

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

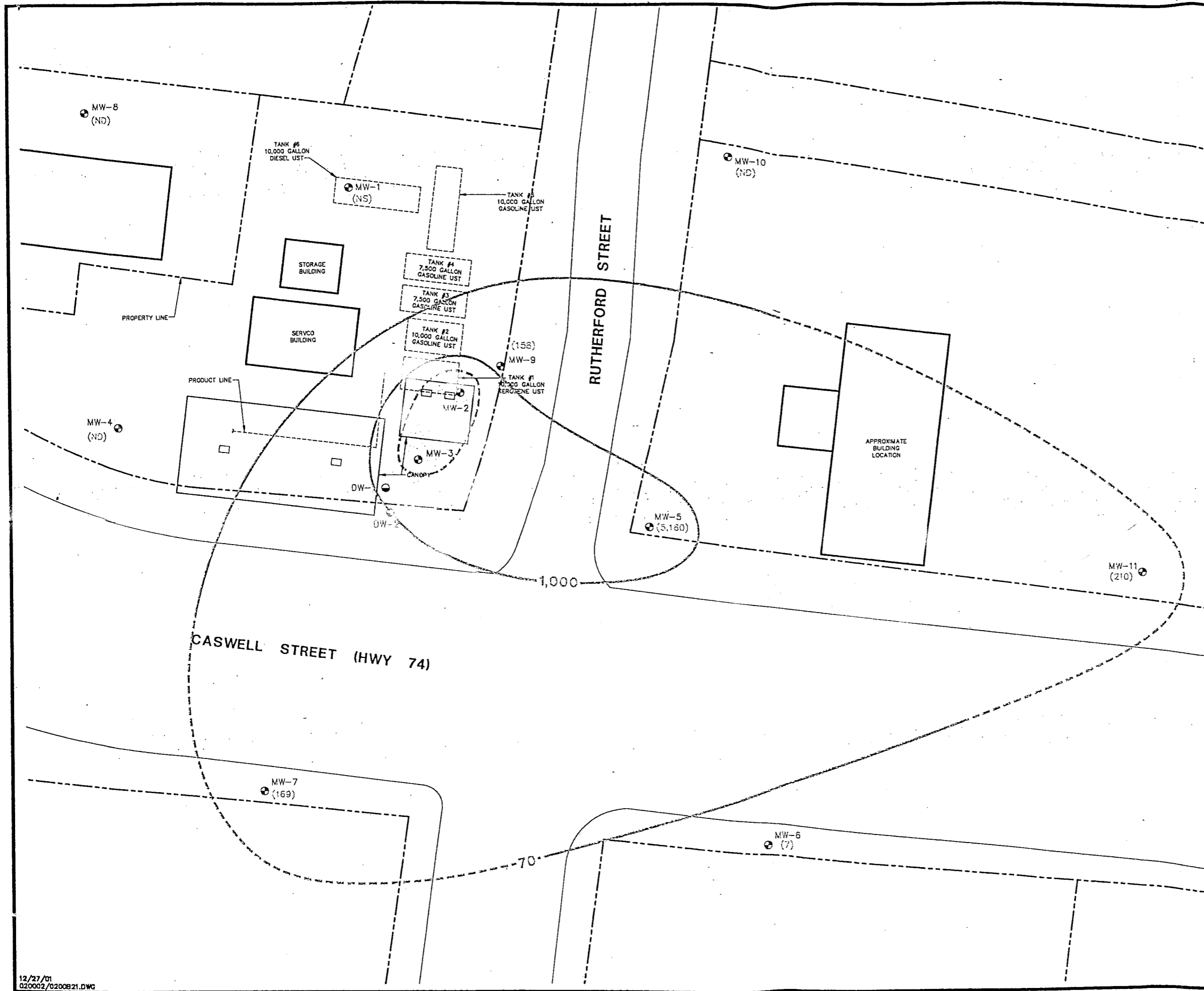


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 WADESBORO, NORTH CAROLINA

**MTBE  
 ISOCONCENTRATION MAP  
 OCTOBER 31, 2001**

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**FIGURE 18**

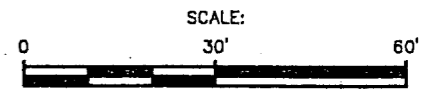


**LEGEND**

- FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (210) IPE CONCENTRATION IN GROUND WATER (ug/L)
- 70 — IPE CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- ▭ APPROXIMATE EXTENT OF FREE PRODUCT

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

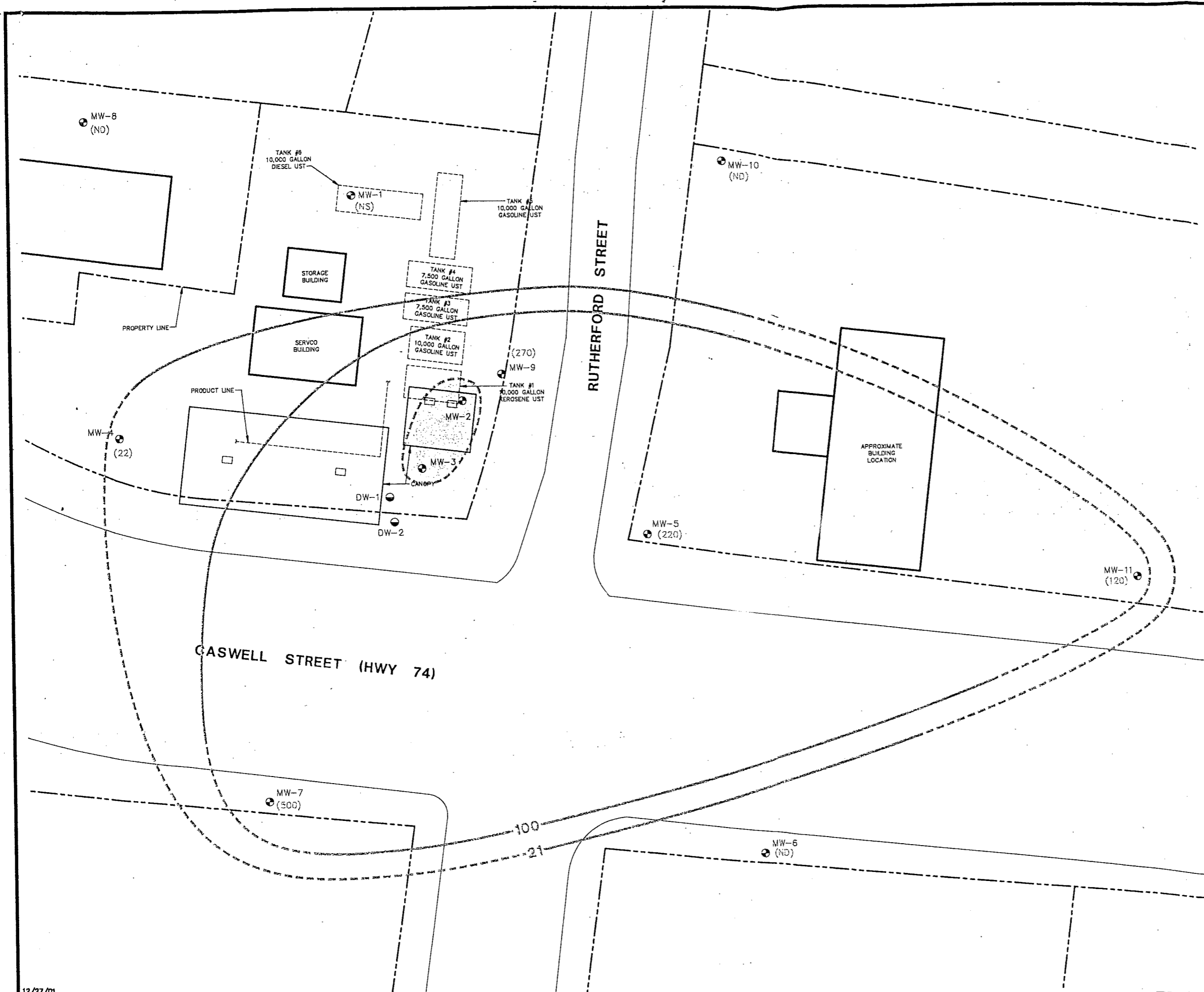


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**IPE  
 ISOCONCENTRATION MAP  
 OCTOBER 31, 2001**

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**FIGURE  
 19**

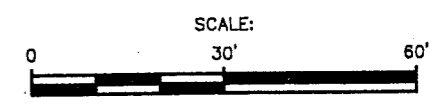


**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (220) NAPHTHALENE CONCENTRATION IN GROUND WATER (ug/L)
- 21 NAPHTHALENE CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- APPROXIMATE EXTENT OF FREE PRODUCT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



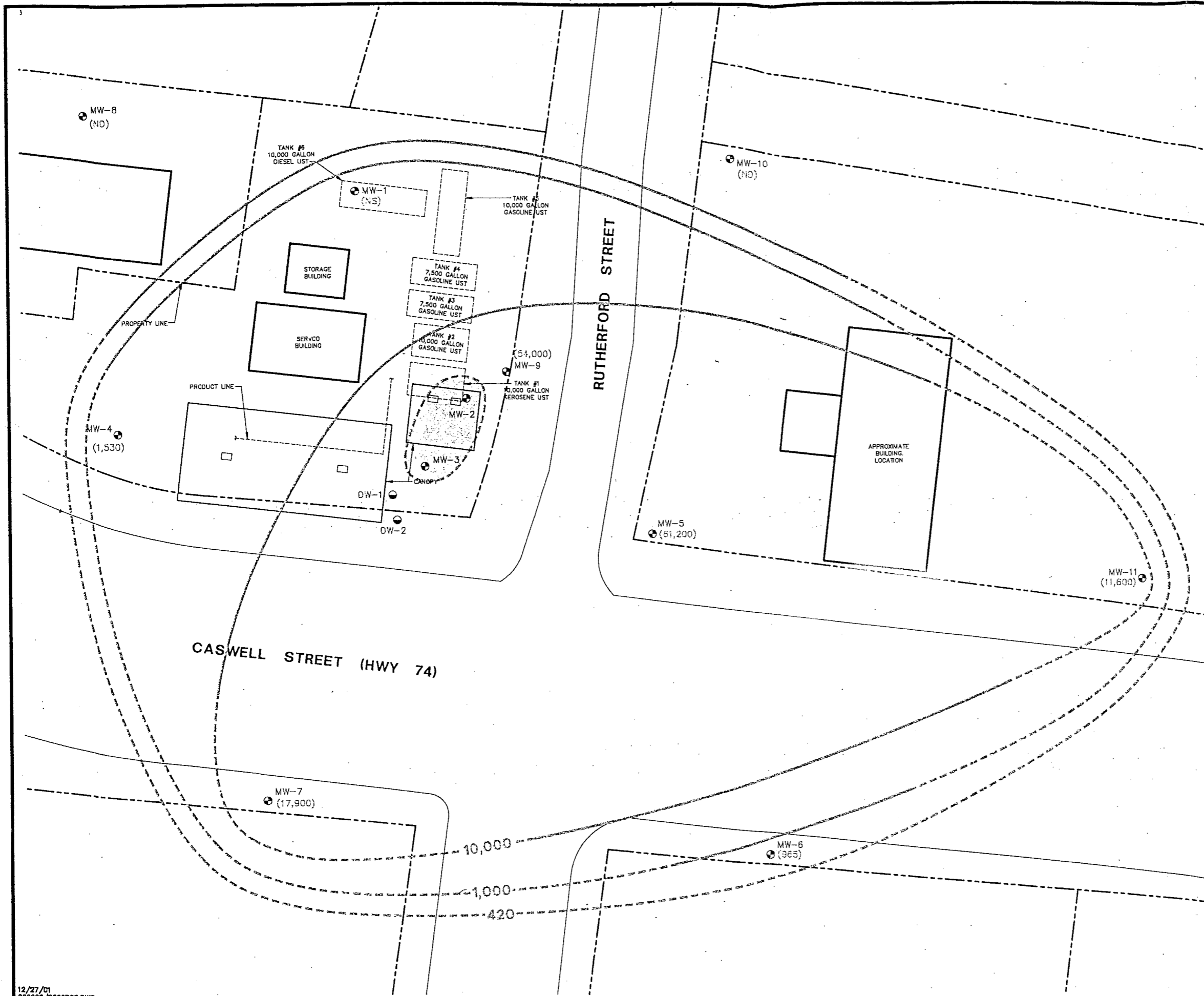
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**NAPHTHALENE  
 ISOCONCENTRATION MAP  
 OCTOBER 31, 2001**



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**FIGURE  
 20**

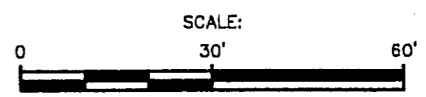


**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (985) C5-C8 ALIPHATICS CONCENTRATION IN GROUND WATER (ug/L)
- 420 — C5-C8 ALIPHATICS CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- ▭ APPROXIMATE EXTENT OF FREE PRODUCT

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

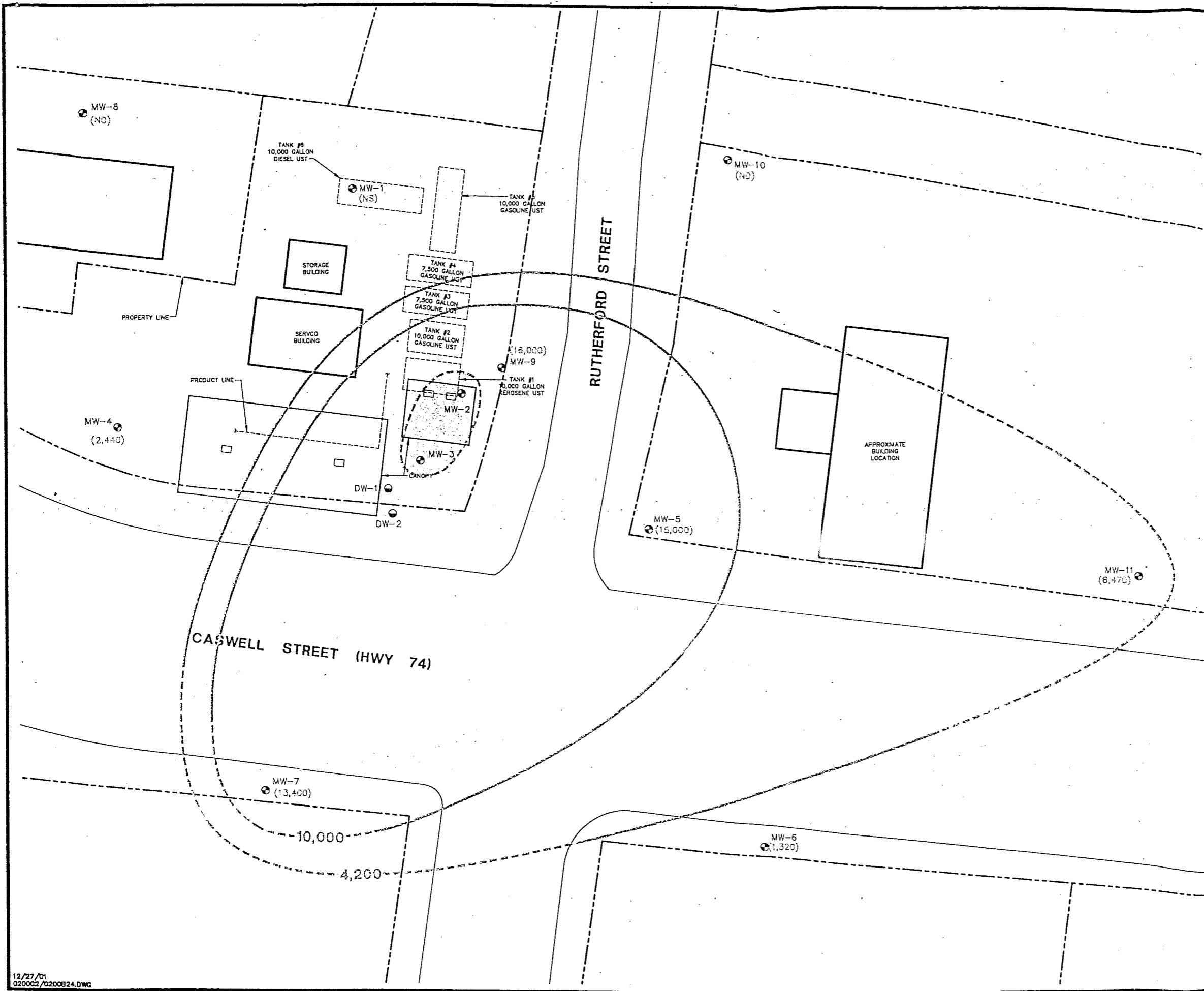


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 WADESBORO, NORTH CAROLINA

**C5-C8 ALIPHATICS  
 ISOCONCENTRATION MAP  
 OCTOBER 31, 2001**

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**FIGURE  
 21**

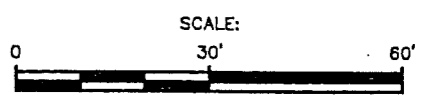


**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (1,320) C9-C18 ALIPHATICS CONCENTRATION IN GROUND WATER (ug/L)
- 4,200 C9-C18 ALIPHATICS CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
- APPROXIMATE EXTENT OF FREE PRODUCT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



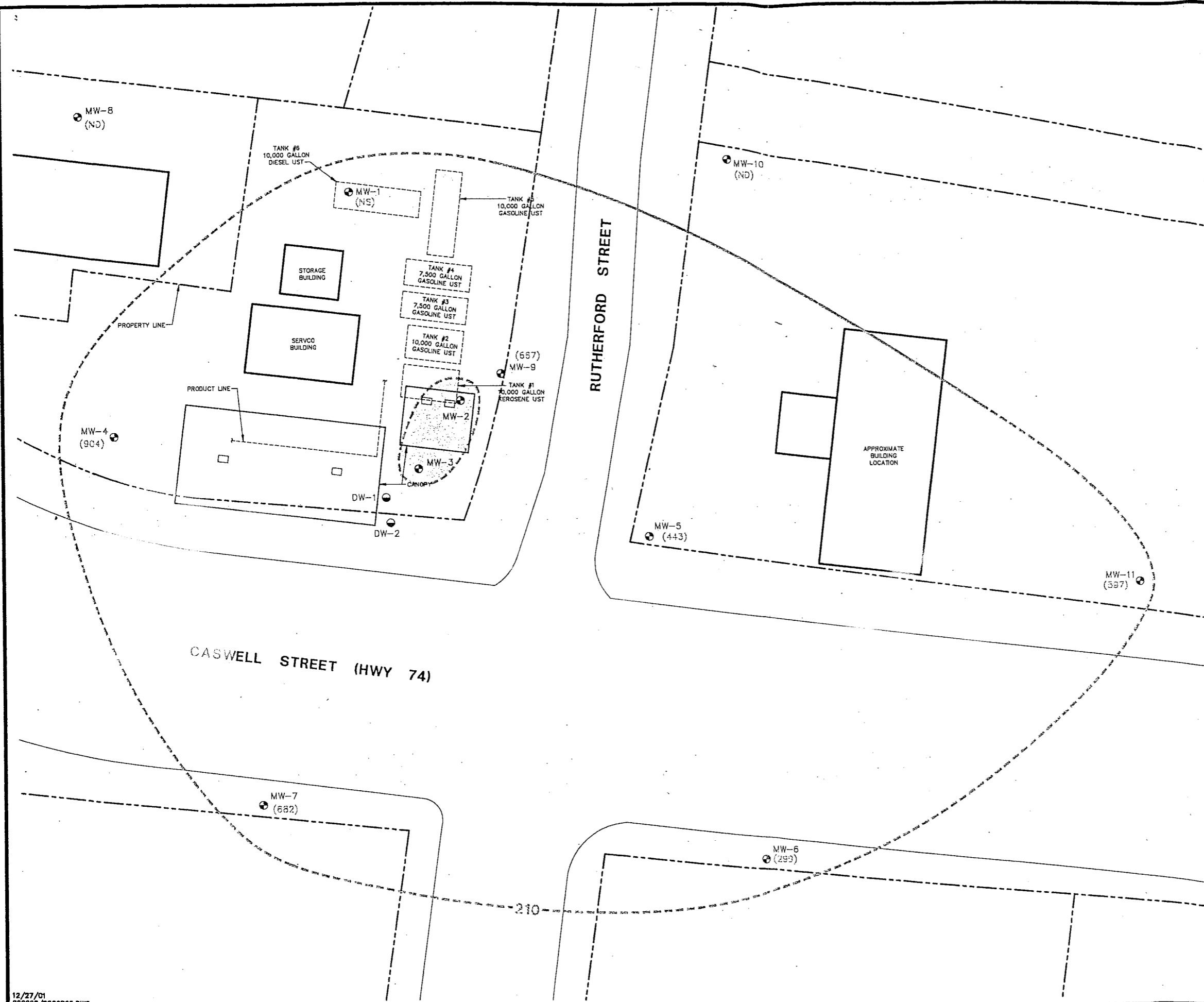
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**C9-C18 ALIPHATICS  
ISOCONCENTRATION MAP  
OCTOBER 31, 2001**









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**FIGURE  
22**

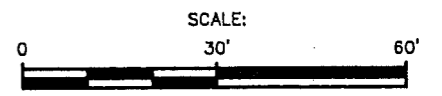


**LEGEND**

-  FUEL PUMP
-  MONITORING WELL - SHALLOW
-  MONITORING WELL - DEEP
-  (293) C9-C22 AROMATICS CONCENTRATION IN GROUND WATER (ug/L)
-  210 C9-C22 AROMATICS CONCENTRATION CONTOUR LINE (ug/L), DASHED WHERE INFERRED
-  APPROXIMATE EXTENT OF FREE PRODUCT


**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



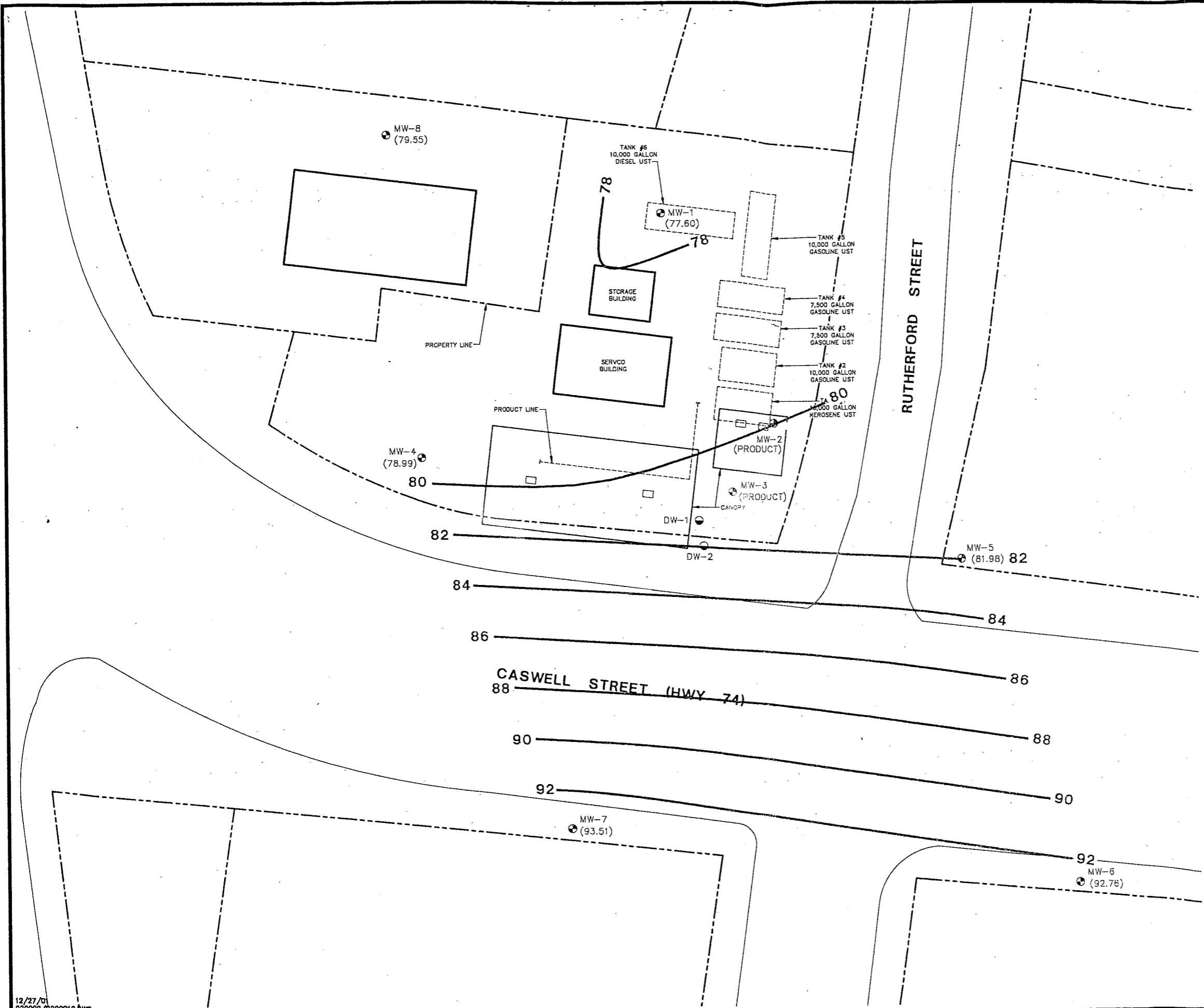
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WADESBORO, NORTH CAROLINA

**C9-C22 AROMATICS  
ISOCONCENTRATION MAP  
OCTOBER 31, 2001**



Wallace-Lee Consultants, L.L.C.  
Assessment • Design • Remediation

**FIGURE  
23**

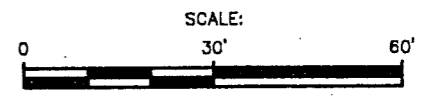


**LEGEND**

- FUEL PUMP
- MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (78.99) GROUND-WATER ELEVATION (FEET)
- 80 — GROUND-WATER ELEVATION CONTOUR LINE (FEET)

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.

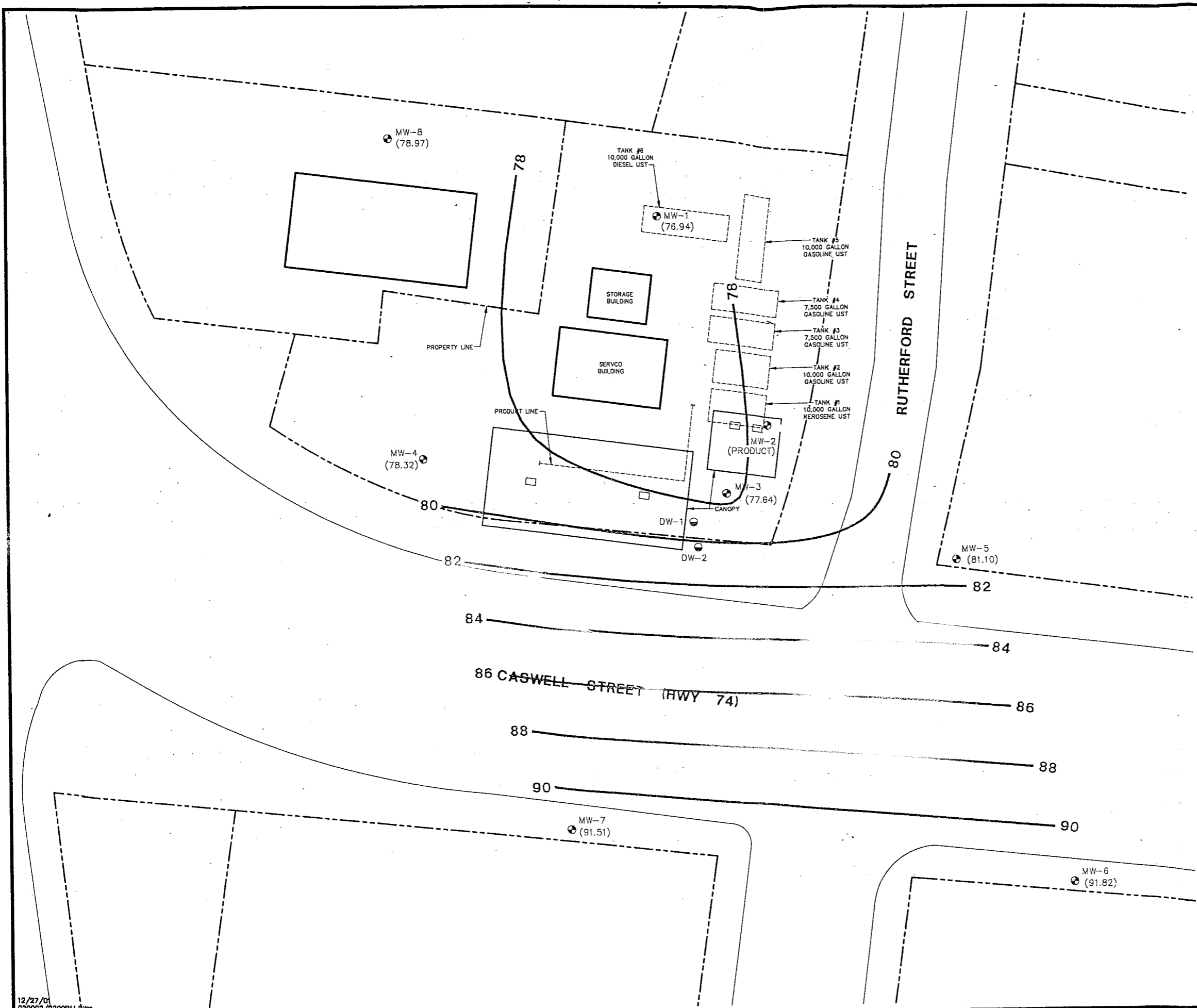


SERVCO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**GROUND-WATER ELEVATION  
 CONTOUR MAP  
 JULY 25, 2001**

Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

**FIGURE 24**

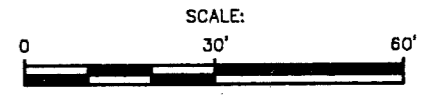


**LEGEND**

- ☐ FUEL PUMP
- ⊕ MONITORING WELL - SHALLOW
- MONITORING WELL - DEEP
- (78.32) GROUND-WATER ELEVATION (FEET)
- 80 — GROUND-WATER ELEVATION CONTOUR LINE (FEET)

**NOTES:**

1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
2. ALL LOCATIONS ARE APPROXIMATE.



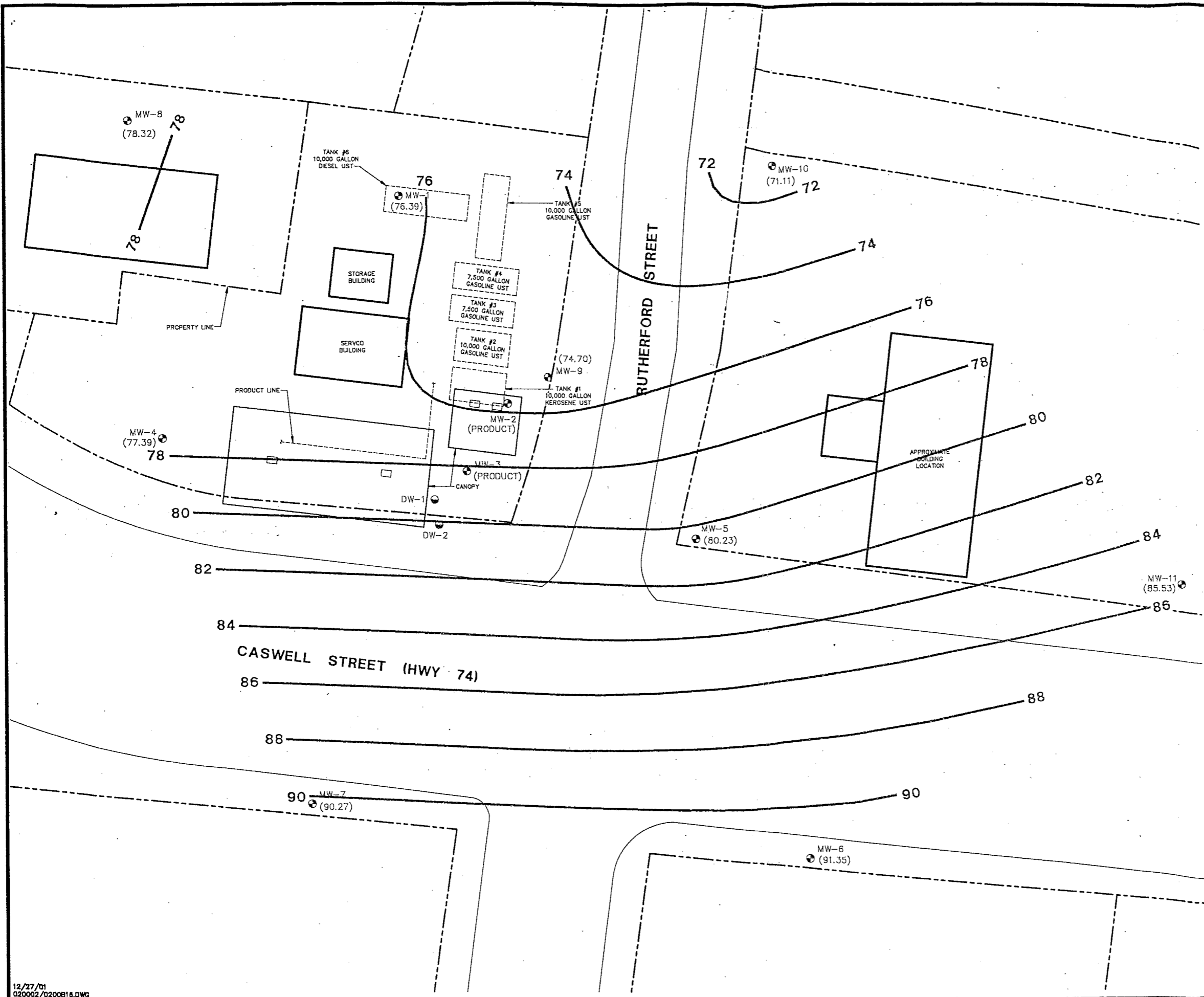
SERVCO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**GROUND-WATER ELEVATION  
 CONTOUR MAP  
 SEPTEMBER 6, 2001**

Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

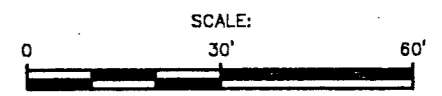
**FIGURE  
 25**





- LEGEND**
- FUEL PUMP
  - ⊕ MONITORING WELL - SHALLOW
  - MONITORING WELL - DEEP
  - (80.23) GROUND-WATER ELEVATION (FT)
  - 80 — GROUNDWATER ELEVATION CONTOUR LINE

- NOTES:**
1. BASE MAP DEVELOPED FROM SITE SKETCH BY WALLACE-LEE FIELD PERSONNEL AND FROM ANSON COUNTY TAX MAP, NO. 6474-11.
  2. ALL LOCATIONS ARE APPROXIMATE.



SERVCO # 00911  
 302-304 CASWELL STREET  
 WADESBORO, NORTH CAROLINA

**GROUND-WATER ELEVATION  
 CONTOUR MAP  
 OCTOBER 31, 2001**



Wallace-Lee Consultants, L.L.C.  
 Assessment • Design • Remediation

**FIGURE  
 26**



# LOG OF BORING DW-1

(Page 1 of 2)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 11/27/00  
Date Completed : 11/28/00  
Drilling Method : Hollow Stem Auger/Mud Rotary  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 58 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.79	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph	Well: DW-1 Elev.: 99.25 feet	Depth in Feet
								10 50		
0										0
99		SP		Brown SILTY SAND.					Cover Surface Casing	
5				Old concrete or rock fill from 4 to 9 feet. No split spoon taken.						5
94										
10				Orange and brown dense fine to medium SANDY SILT. Petroleum odor.						10
89										
15									Grout	15
84									PVC Casing	
20		SM								20
79										
25										25
74										
30										30

\*Lithologies between 0 and 36 feet were taken from boring MW-3, drilled approximately 8 feet from DW-1.

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# LOG OF BORING DW-1

(Page 2 of 2)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 11/27/00  
Date Completed : 11/28/00  
Drilling Method : Hollow Stem Auger/Mud Rotary  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 58 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.79	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph	Well: DW-1 Elev.: 99.25 feet	Depth in Feet
30	69									30
35	64									35
40	59	SM			1	>1000	29		Surface Casing	30
45	54				2	180	50/3		Grout	35
45	54				3	510	50/4			40
45	54				4	64	50/5		PVC Casing	45
45	54				5	60	50/5			50
50	49				6	40	17 17 20 23		Bentonite Seal	50
50	49				7	36	27 50/5			55
55	44	SS		Bedrock - cuttings appear to be quartz SANDSTONE.					Sand Pack	55
60									Screen	60

Lithologies between 0 and 36 feet were taken from boring MW-3, drilled approximately 8 feet from DW-1.

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12-04-C



# LOG OF BORING DW-2

(Page 1 of 3)

SERVO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 7/18/01  
Date Completed : 7/19/01  
Drilling Method : Hollow Stem Auger/Mud Rotary  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 82 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.57	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph		Well: DW-2 Elev.: 99.33 feet	Depth in Feet
								10	50		
0	99	AR		Black asphalt and fill material	1	0.0					0
				Red brown to tan brown SILTY CLAY	2	342.5					5
5	94				3	521.2					10
				Orange and brown dense fine to medium SANDY SILT. Geoprobe refusal at 14.0'	4	3987.0					15
10	89				5	3987.0					20
					6	3987.0					25
15	84				7	3987.0					30
		SM									
20	79										
25	74										
30											

Lithologies between 14 and 54 feet taken from MW-3 and DW-1 both drilled in close proximity to DW-2.

Groundwater encountered in bedrock fracture at a depth of approximately 79'.



# LOG OF BORING DW-2

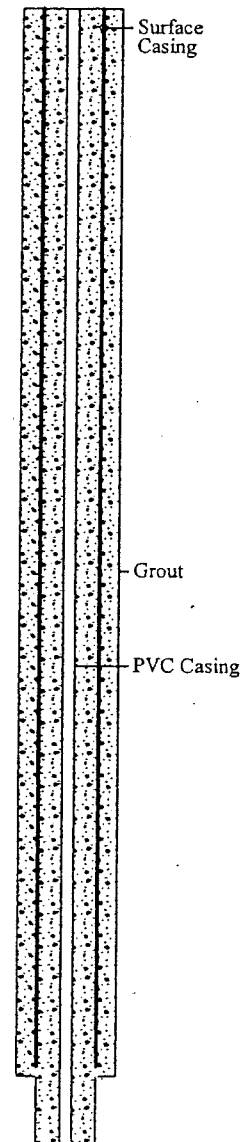
(Page 2 of 3)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 7/18/01  
Date Completed : 7/19/01  
Drilling Method : Hollw Stem Auger/Mud Rotary  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 82 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.57	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph		Well: DW-2 Elev.: 99.33 feet	Depth in Feet
								10	50		
30	69										30
35	64										35
40	59										40
45	54	SM									45
50	49										50
55	44	SS		Bedrock appears to be Quartz Sandstone from cuttings.							55
60											60



Lithologies between 14 and 54 feet taken from MW-3 and DW-1 both drilled in close proximity to DW-2.

Groundwater encountered in bedrock fracture at a depth of approximately 79'.



# LOG OF BORING DW-2

(Page 3 of 3)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 7/18/01  
Date Completed : 7/19/01  
Drilling Method : Hollow Stem Auger/Mud Rotary  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 82 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.57	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph		Well: DW-2 Elev.: 99.33 feet	Depth in Feet
								10	50		
60	39	SS		Water bearing fracture in bedrock located at a depth of approximately 79 feet.							60
65	34										65
70	29										70
75	24										75
80	19										80
85	14										85
90											90

Lithologies between 14 and 54 feet taken from MW-3 and DW-1 both drilled in close proximity to DW-2.

Groundwater encountered in bedrock fracture at a depth of approximately 79'.



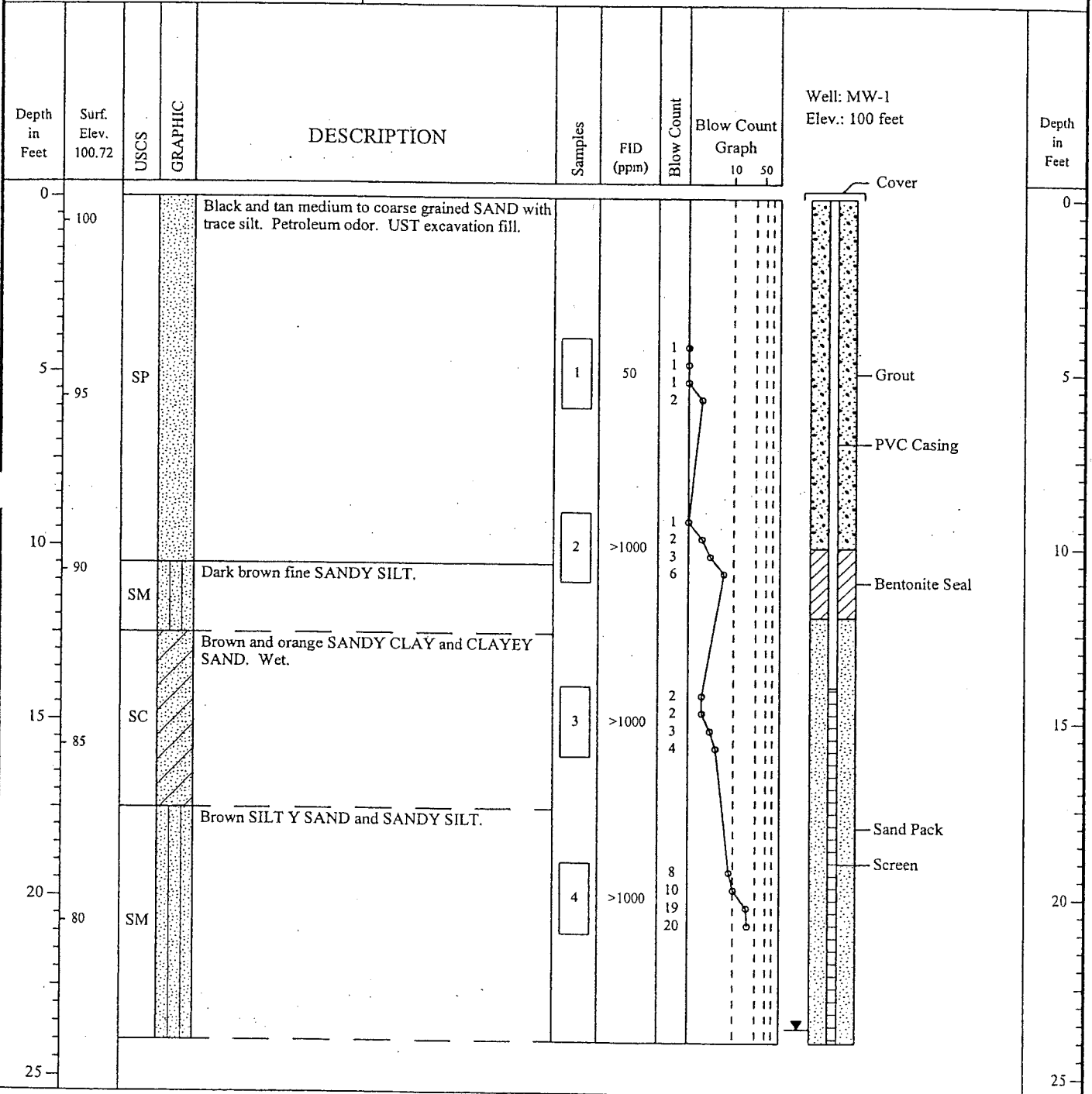
# LOG OF BORING MW-1

(Page 1 of 1)

SERVCO # 00911  
 302-304 Caswell Street  
 Wadesboro, North Carolina 28170

Date Started : 10/16/00  
 Date Completed : 10/16/00  
 Drilling Method : Hollow Stem Auger  
 Driller : SAEDACCO  
 Sampling Method : Split Spoon

Borehole Depth : 24 feet  
 Geologist : John G. Cargill, IV, P.G.



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12-04-2



# LOG OF BORING MW-2

(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 10/16/00  
Date Completed : 10/16/00  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 36 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.63	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph	Well: MW-2 Elev.: 99 feet	Depth in Feet
								10 50		
0	99			Orange and brown medium to coarse grained SAND.						0
5	94	SP			1	>1000				5
10	89	SM		Red and brown fine SANDY SILT with traces of clay.	2	>1000	16			10
15	84			Dense red and orange SANDY SILT and SILTY SAND.	3	>1000	16 50/5			15
20	79	SM			4	>1000	16 21 29 50/5			20
25	74				5	>1000	20 50/5			25
30	69				6	>1000	28 50/5			30
35	64	SP		gray and black saprolitic SANDS.	7	>1000	15 24 50/5		35	
40									40	

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# LOG OF BORING MW-3

(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 10/16/00  
Date Completed : 10/17/00  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 36 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.60	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph	Well: MW-3 Elev.: 99.3 feet	Depth in Feet
0	99			Brown SILTY SAND.						0
5	94	SP		Old concrete or rock fill from 4 to 9 feet. No split spoon taken.	1	--	NS			5
10	89			Orange and brown dense fine SANDY SILT. Petroleum odor.	2	750	13 16 23			10
15	84				3	>1000	15 50/5			15
20	79	SM			4	>1000	13 15 51			20
25	74				5	>1000	11 17 30/4			25
30	69				6	>1000	15 42 50/5			30
35	64				7	>1000	50/5		35	
40									40	

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12-04-20



# LOG OF BORING MW-4

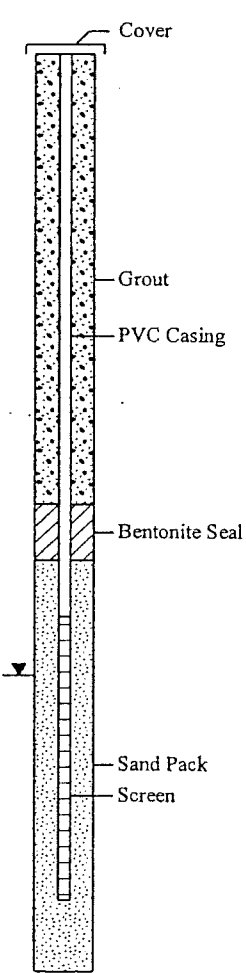
(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 11/27/00  
Date Completed : 11/28/00  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 32.5 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.63	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph		Well: MW-4 Elev.: 99.49 feet	Depth in Feet
								10	50		
0	99	CL		Dark brown SILTY CLAY. Wood fragments from 5.5 to 5.7 feet.							0
5	94	SP		Mottled red, brown, tan and black fine grained SAND.	1	200	7 9 11				5
10	89	SM		Dense brown and red SILTY fine to medium SAND. Petroleum odor.	2	310	13 16 18				10
15	84				3	180	5 11 27 35				15
20	79				4	940	7 10 15 17				20
25	74				5	90	8 17 28 39				25
30	69				6	80	10 24 30 41				30
35	64										35
40											40



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# LOG OF BORING MW-5

(Page 1 of 1)

SERVCO # 00911  
 302-304 Caswell Street  
 Wadesboro, North Carolina 28170

Date Started : 07/18/01  
 Date Completed : 07/18/01  
 Drilling Method : Hollow Stem Auger  
 Driller : SAEDACCO  
 Sampling Method : Geoprobe

Borehole Depth : 40 feet  
 Geologist : Brian A Parks

Depth in Feet	Surf. Elev. 99.82	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Well: MW-5 Elev.: 99.43	
							Depth in Feet	Diagram
0	99			Tan brown to pink brown SANDY SILT	1	0.0	0	
					2	0.0		
5	94	SC		Tan brown to pink CLAYEY SAND	3	0.0	5	
					4	0.0		
10	89			Tan brown to red brown sandy CLAYEY SILT	5	14.4	10	
					6	4.4		
					7	14.2		
15	84				8	0.0	15	
					9	0.0		
20	79			Brown to dark brown SANDY SILT	10	0.0	20	
25	74						25	
30	69						30	
35	64						35	
40							40	

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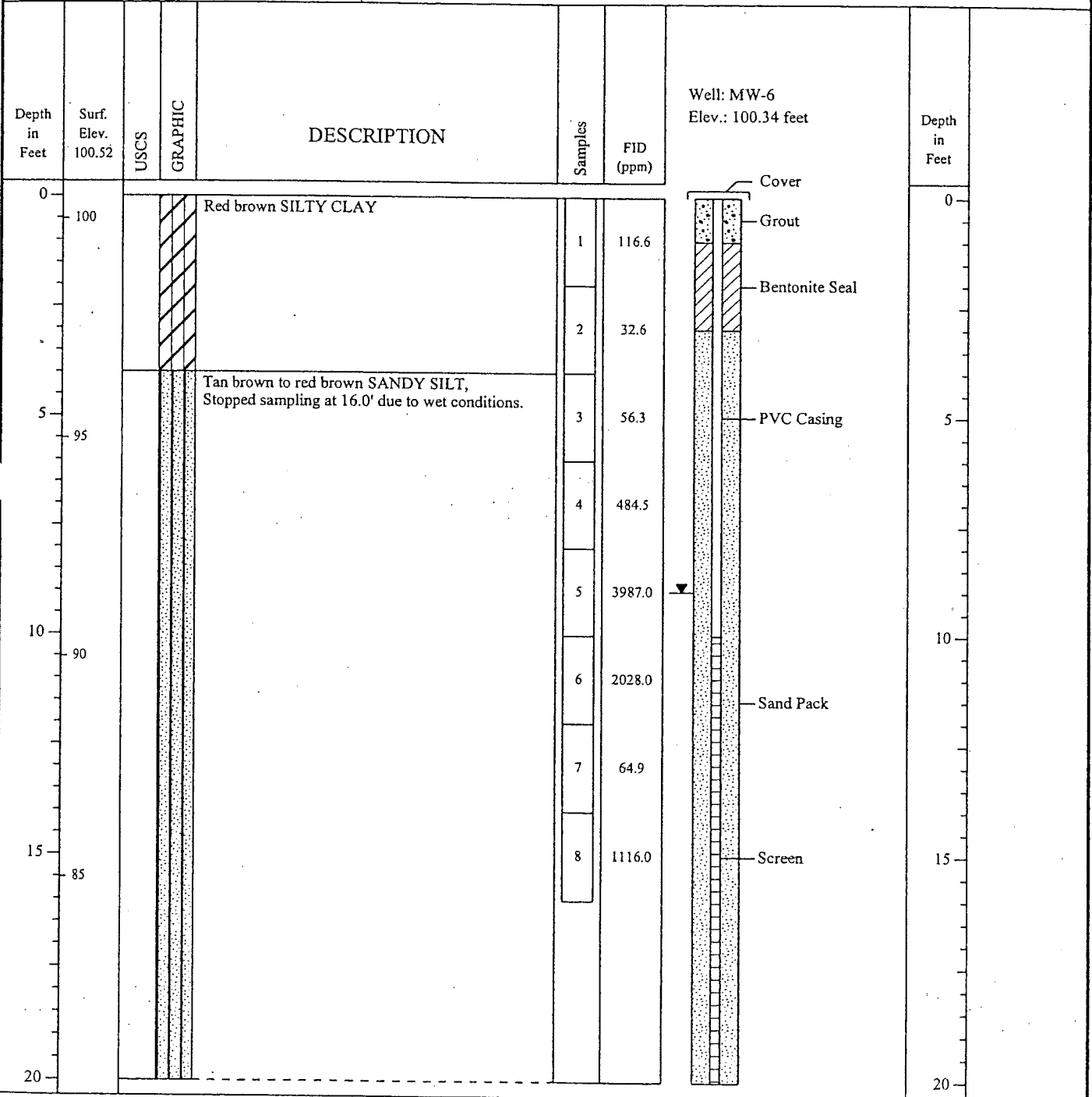
# LOG OF BORING MW-6

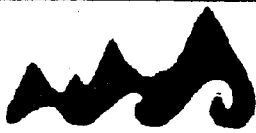
(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 07/18/01  
Date Completed : 07/18/01  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Geoprobe

Borehole Depth : 20 feet  
Geologist : Brian A Parks





# LOG OF BORING MW-7

(Page 1 of 1)

SERVCO # 00911  
 302-304 Caswell Street  
 Wadesboro, North Carolina 28170

Date Started : 07/18/01  
 Date Completed : 07/18/01  
 Drilling Method : Hollow Stem Auger  
 Driller : SAEDACCO  
 Sampling Method : Geoprobe

Borehole Depth : 16 feet  
 Geologist : Brian A Parks

Depth in Feet	Surf. Elev. 98.77	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Well: MW-7 Elev.: 98.51	Depth in Feet
0				Black asphalt and fill material	1	187.0		0
1				Dark brown SILTY CLAY	2	3809.0		1
2				Tan brown moist SANDY SILT, Refusal at 16.0'	3	3898.0		2
3					4	3890.0		3
4					5	1114.0		4
5					6	2127.0		5
10								10
15								15
20								20
25								25



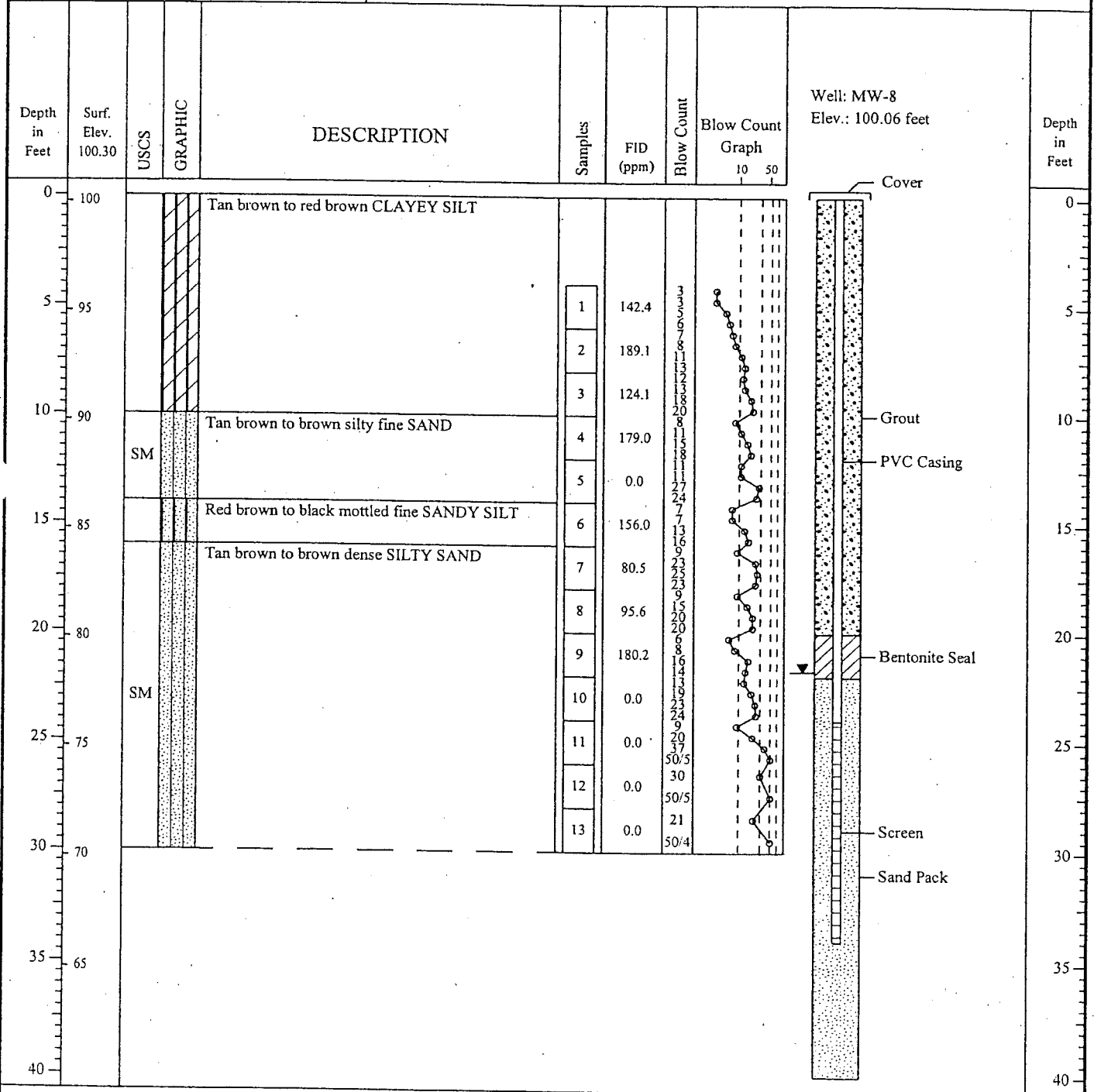
# LOG OF BORING MW-8

(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 07/18/01  
Date Completed : 07/18/01  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 40 feet  
Geologist : John G. Cargill, IV, P.G.



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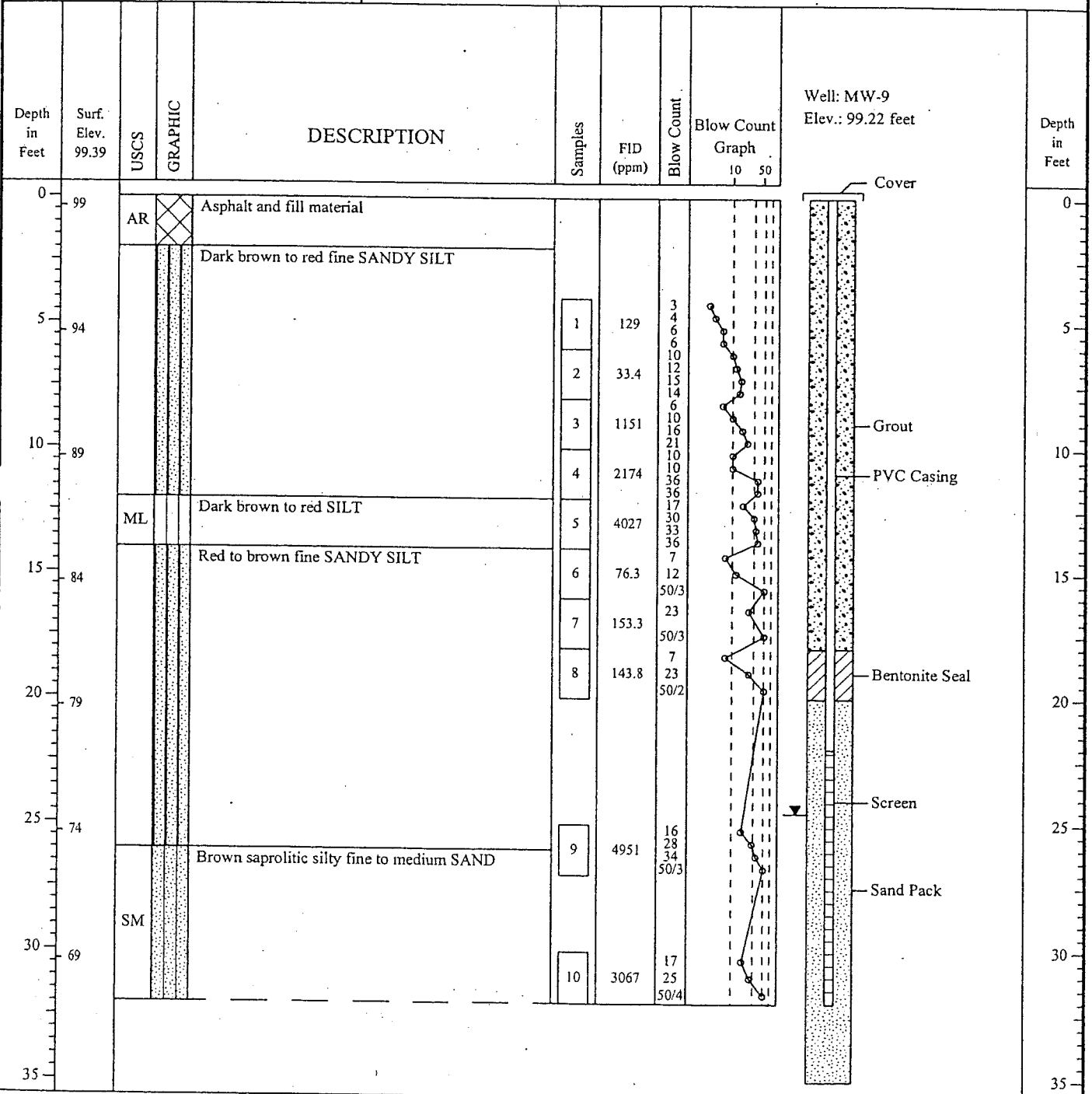
# LOG OF BORING MW-9

(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 32 feet  
Geologist : John G. Cargill, IV, P.G.





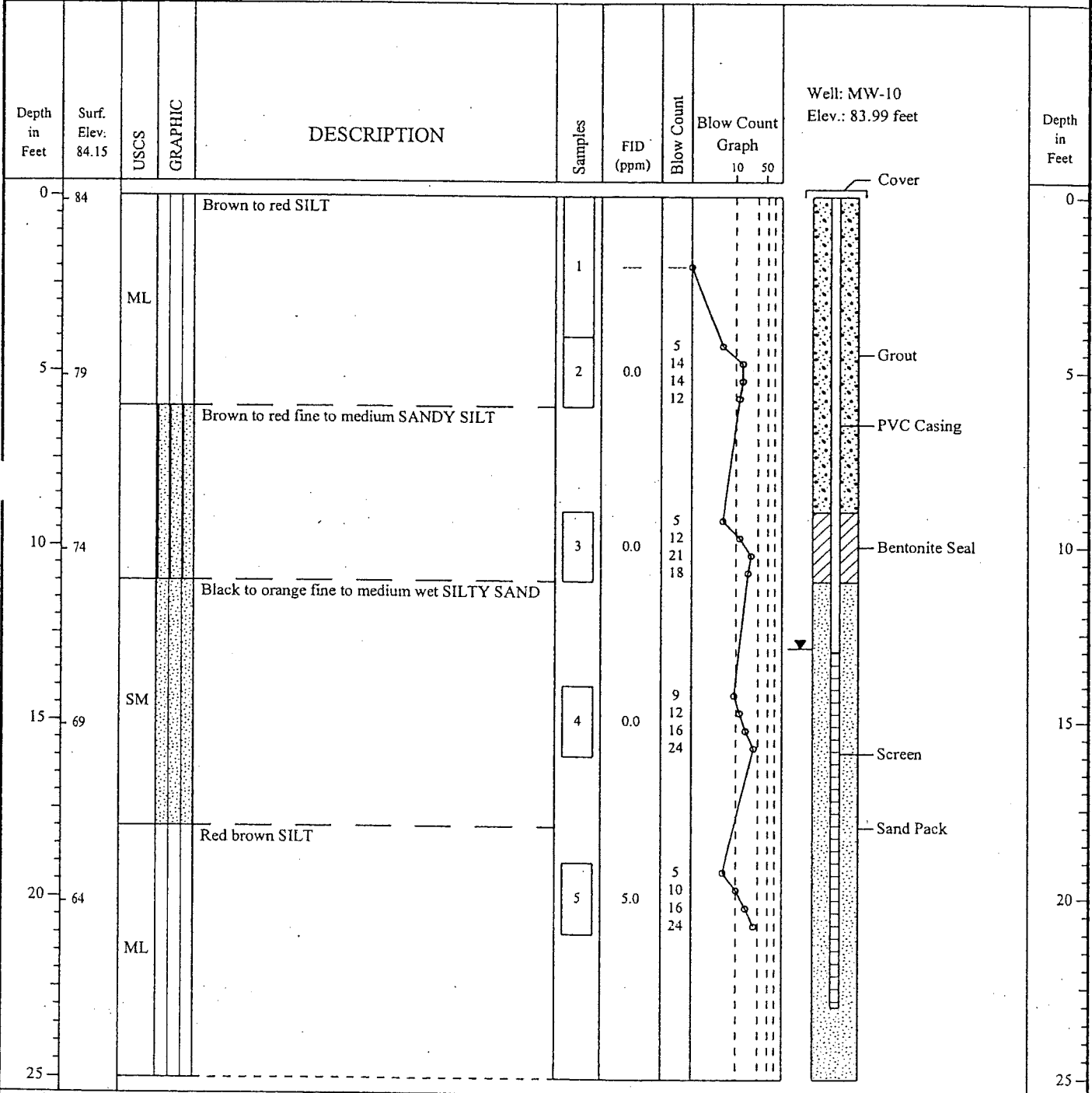
# LOG OF BORING MW-10

(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Split Spoon

Borehole Depth : 25 feet  
Geologist : John G. Cargill, IV, P.G.



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# LOG OF BORING MW-11

(Page 1 of 1)

SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Direct Push and Hollow Stem Auger  
Driller : SAEDACCO  
Sampling Method : Geoprobe and Split Spoon

Borehole Depth : 35 feet  
Geologist : John G. Cargill, IV, P.G.

Depth in Feet	Surf. Elev. 99.36	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph		Well: MW-11 Elev.: 99.20 feet	Depth in Feet				
								10	50						
0	99	ML		Red brown SILT	1	1.7					0				
				2	205.6						5				
5	94			CL		Red brown to dark brown fine to medium SANDY SILT	3	78.7					10		
						4	136.5						15		
10	89	CL		Red brown CLAY	5	465.8					20				
				6	500.6						25				
15	84			CL		Red brown to orange CLAYEY SILT	7	1027					30		
						8	2047						35		
20	79					CL			9		55.9				
								10	287.5						
25	74	CL		Red brown to orange sandy CLAYEY SILT	11	169	6								
				12	141	10									
30	69						18								
35							34								
							50/4								

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12-04-2001



# LOG OF BORING GP-1

(Page 1 of 1)

Service #00911  
 302-304 Caswell Street  
 Wadesboro, NC 28170

Date Started : 07/18/01  
 Date Completed : 07/18/01  
 Drilling Method : Geoprobe  
 Driller : SAEDACCO  
 Sampling Method : Continuous Core

Borehole Depth : 20 feet  
 Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black to brown SANDY SILT			0
1	ML			1	24.0	1
2			Tan brown SILTY CLAY			2
3	CL			2	90.0	3
4			Tan brown SANDY SILT			4
5				3	102.0	5
6						6
7				4	146.2	7
8						8
9				5	N/A	9
10	ML					10
11				6	521.8	11
12						12
13				7	3986.0	13
14			Moist SANDY SILT			14
15				8	2561.0	15
16			Tan brown moist SILTY CLAY			16
17				9	267.1	17
18	CL					18
19				10	1084	19
20						20



# LOG OF BORING GP-2

(Page 1 of 1)

Service #00911  
 302-304 Caswell Street  
 Wadesboro, NC 28170

Date Started : 07/18/01  
 Date Completed : 07/18/01  
 Drilling Method : Geoprobe  
 Driller : SAEDACCO  
 Sampling Method : Continuous Core

Borehole Depth : 20 feet  
 Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt and gravel fill			0
1				1	N/A	1
2			Red brown SILTY CLAY			2
3				2	172.0	3
4						4
5	CL			3	213.2	5
6						6
7				4	162.0	7
8			Dark gray SILTY CLAY			8
9				5	469.2	9
10	CL					10
11				6	302.1	11
12			Tan brown to gray moist SANDY SILT			12
13				7	996.6	13
14	ML					14
15				8	3987	15
16			Tan brown moist SILTY CLAY			16
17				9	3987	17
18	CL					18
19				10	1107	19
20						20

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# LOG OF BORING GP-3

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/18/01  
Date Completed : 07/18/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt and gravel fill			0
1				1	224.0	1
2			Red brown SILTY CLAY			2
3				2	417.0	3
4						4
5				3	84.8	5
6	CL					6
7				4	117.3	7
8						8
9				5	88.7	9
10			Red brown moist SILTY CLAY			10
11				6	449.8	11
12						12
13				7	1495.0	13
14						14
15	CL			8	3986.0	15
16						16
17				9	1514.0	17
18						18
19				10	1644.0	19
20						20

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12-05-20'



# LOG OF BORING GP-4

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/18/01  
Date Completed : 07/18/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt and fill material			0
1				1	0.0	1
2			Red brown SILTY CLAY			2
3				2	28.3	3
4						4
5				3	63.7	5
6						6
7	CL			4	161.7	7
8						8
9				5	183.9	9
10						10
11				6	123.4	11
12			Tan brown moist SANDY SILT			12
13				7	486.5	13
14						14
15				8	392.1	15
16	ML					16
17				9	128.1	17
18						18
19				10	72.3	19
20						20

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12-05-20



# LOG OF BORING GP-5

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/18/01  
Date Completed : 07/18/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Red brown SILTY CLAY			0
1				1	47.0	1
2						2
3	CL			2	125.7	3
4						4
5				3	504.8	5
6			Tan brown to red brown moist SILTY CLAY			6
7				4	1642.0	7
8						8
9				5	0.0	9
10	CL					10
11				6	1202.0	11
12						12
13				7	1545.0	13
14			Tan brown moist SANDY SILT			14
15				8	1530.0	15
16						16
17	ML			9	102.8	17
18						18
19				10	1905.0	19
20						20

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# LOG OF BORING GP-6

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt and fill material			0
1				1	0.0	1
2			Red brown SILTY CLAY			2
3				2	0.0	3
4	CL					4
5				3	0.0	5
6			Red brown moist SILTY CLAY			6
7				4	527.0	7
8						8
9				5	1832.0	9
10	CL					10
11				6	3987.0	11
12						12
13				7	2372.0	13
14			Red brown moist SANDY SILT			14
15				8	1892.0	15
16						16
17	ML			9	N/A	17
18						18
19				10	N/A	19
20						20

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12-05-20f



# LOG OF BORING GP-7

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	
0			Concrete			0	
1	CL		Red brown SILTY CLAY	1	19.3	1	
2							2
3				2	4.0	3	
4							4
5				3	0.0	5	
6						6	
7				4	0.0	7	
8	CL		Red brown moist SILTY CLAY			8	
9							9
10							10
11				5	0.0	11	
12				6	358.0	12	
13						13	
14				7	1463.0	14	
15	ML		Red brown moist CLAYEY SILT			15	
16							16
17				8	1753.0	17	
18							18
19				9	3987.0	19	
20						20	
				10	133.6	19	

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12-05-201





# LOG OF BORING GP-8

(Page 1 of 1)

Service #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Concrete			0
1			Red brown SILTY CLAY	1	6.5	1
2						2
3						3
4	CL		Red brown moist SILTY CLAY	2	0.0	4
5						5
6						6
7			Red brown moist SILTY CLAY	4	0.0	7
8						8
9	CL					9
10			Red brown moist SILTY CLAY	5	32.0	10
11						11
12						12
13			No Recovery	7	N/A	13
14			Red brown moist CLAYEY SILT			14
15						15
16	ML		Red brown moist CLAYEY SILT	8	678.0	16
17						17
18			Refusal at 18'	9	2080.0	18
19						19
20						20

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# LOG OF BORING GP-9

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Concrete and fill material			0
1				1	0.0	1
2						2
3				2	0.0	3
4						4
5				3	19.3	5
6			Dark brown SILTY CLAY			6
7	CL		Probe refusal at 10.00'	4	1151	7
8			Dark brown CSE SANDY SILT			8
9	ML			5	538.9	9
10						10

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# LOG OF BORING GP-10

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt material			0
1			Tan brown to red brown SILTY CLAY	1	0.0	1
2						2
3				2	284	3
4						4
5				3	126.7	5
6			Red brown sandy CLAYEY SILT			6
7				4	88.4	7
8						8
9				5	18.3	9
10						10
11				6	25.5	11
12						12
13				7	32.5	13
14						14
15			Refusal at 16.0'	8	55.9	15
16						16
17						17
18						18
19						19
20						20

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# LOG OF BORING GP-11

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
1	SM		Tan brown SILTY SAND	1	0.0	1
2			Tan brown to red brown silty SANDY CLAY	2	0.0	2
3				3	0.0	3
4				4	22.0	4
5				5	114.3	5
6			Tan brown to red brown moist sandy CLAYEY SILT	6	44.8	6
7				7	3987.0	7
8				8	3987.0	8
9						9
10						10
11						11
12						12
13						13
14						14
15			Refusal at 16.0'			15
16						16
17						17
18						18
19						19
20						20

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# LOG OF BORING GP-12

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt material			0
1	SM		Tan brown SAND	1	70.7	1
2			Tan brown to red brown silty SANDY CLAY			2
3				2	30.4	3
4						4
5				3	218.6	5
6			Tan brown to red brown moist CLAYEY SILT			6
7				4	15.2	7
8						8
9				5	190.7	9
10						10
11				6	202.5	11
12						12
13				7	2160.0	13
14						14
15			Refusal at 16.0'	8	595.0	15
16						16
17						17
18						18
19						19
20						20



# LOG OF BORING GP-13

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
1			Tan brown silty SANDY CLAY	1	13.5	1
2						2
3				2	97.3	3
4						4
5				3	41.5	5
6			Tan brown SILTY SAND			6
7	SM			4	40.7	7
8			Tan brown to red brown SILTY CLAY			8
9				5	177.0	9
10			Tan brown to yellow brown sandy CLAYEY SILT			10
11				6	676.8	11
12						12
13				7	187.5	13
14						14
15			Refusal at 16.0'	8	2536.0	15
16						16
17						17
18						18
19						19
20						20

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# LOG OF BORING GP-14

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/19/01  
Date Completed : 07/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt material			0
1			Red brown to tan brown sandy SILTY CLAY	1	0.0	1
2						2
3				2	145.4	3
4						4
5				3	120.6	5
6						6
7						7
8						8
9						9
10						10
11			Refusal at 12.0'	6	92.7	11
12						12

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# LOG OF BORING GP-15

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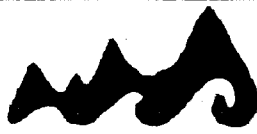
Servco #00911  
302-304 Caswell St  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt material			0
1			Red brown to brown sandy SILTY CLAY Refusal at 6.0'	1	20.1	1
2				2	120.8	2
3				3	94.7	3
4				4	N/A	4
5				5	N/A	5
6				6	N/A	6
7				7	N/A	7
8				8	N/A	8
9				9	N/A	9
10				10	N/A	10
11					11	
12					12	
13					13	
14					14	
15					15	
16					16	
17					17	
18					18	
19					19	
20					20	





# LOG OF BORING GP-16

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet	
0			Black asphalt			0	
1			Red brown CLAYEY SILT	1	0.0	1	
2						2	
3					2	0.0	3
4							4
5					3	30.7	5
6						6	
7				4	51.5	7	
8						8	
9				5	1135.0	9	
10			Red brown SILTY CLAY			10	
11					6	3987.0	11
12						12	
13				7	269.6	13	
14			Red brown CLAYEY SILT			14	
15					8	269.0	15
16						16	
17			Refusal at 18.0'	9	1089	17	
18						18	
19						19	
20						20	

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# LOG OF BORING GP-17

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Servo #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt material			0
1			Red brown SILTY CLAY	1	36.1	1
2			Yellow to yellow brown SAND			2
3				2	24.5	3
4	SW					4
5				3	0.0	5
6						6
7			Red brown CLAYEY SILT	4	126.4	7
8						8
9				5	43.2	9
10						10
11				6	1925.0	11
12			Red brown SILTY CLAY			12
13				7	3987.0	13
14						14
15				8	3987.0	15
16			Red brown CLAYEY SILT			16
17				9	387.0	17
18			Refusal at 18.0'			18
19						19
20						20

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# LOG OF BORING GP-18

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Gravel fill			0
1			Yellow to yellow brown SAND	1	1.0	1
2	SW					2
3			Red brown to tan brown silty SANDY CLAY	2	0.0	3
4						4
5				3	0.0	5
6						6
7				4	0.0	7
8						8
9				5	0.0	9
10						10
11				6	192.6	11
12						12
13				7	904.0	13
14						14
15				8	3154.0	15
16			Red brown CLAYEY SILT			16
17				9	239.6	17
18			Red brown silty SANDY CLAY			18
19				10	2400.0	19
20						20

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12-05-201



# LOG OF BORING GP-19

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Service #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
1			Red brown sandy SILTY CLAY	1	0.0	1
2						2
3					2	3
4						4
5					3	5
6					6	
7			Yellow brown sandy SILTY CLAY	4	0.0	7
8						8
9			Red brown sandy SILTY CLAY	5	0.0	9
10			Refused at 10.0'			10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19
20						20



# LOG OF BORING GP-20

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Coarse fill sand			0
1				1	0.0	1
2	SW					2
3				2	0.0	3
4			Tan brown silty SANDY CLAY			4
5				3	0.0	5
6						6
7				4	0.0	7
8			Gray moist coarse SAND			8
9	SW			5	0.0	9
10			Red brown to tan brown sandy CLAYEY SILT			10
11				6	79.1	11
12						12
13				7	58.6	13
14						14
15				8	3987.0	15
16						16
17			Refusal at 18.0'	9	3907.0	17
18						18
19						19
20						20



# LOG OF BORING GP-21

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Service #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 07/20/01  
Date Completed : 07/20/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Concrete and fill materia			0
1				1	0.0	1
2			Red brown sandy CLAYEY SILT			2
3				2	1655.0	3
4						4
5				3	66.4	5
6						6
7				4	19.3	7
8						8
9				5	3987.0	9
10						10
11				6	3987.0	11
12			Red brown CLAYEY SILT			12
13				7	3987.0	13
14						14
15				8	3648.0	15
16			Refusal at 16.0'			16
17						17
18						18
19						19
20						20

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12-05-201



# LOG OF BORING GP-23

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SERVCO # 00911  
302-304 Caswell Street  
Wadesboro, North Carolina 28170

Date Started : 7/18/01  
Date Completed : 7/19/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 14 feet  
Geologist : Brian A. Parks

Depth in Feet	Surf. Elev. 99.57	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Blow Count	Blow Count Graph		Well: Elev.:	Depth in Feet
								10	50		
0				Black asphalt and fill							0
99		AR		Red brown to tan brown SILTY CLAY	1	0.0					
					2	342.5					
5					3	521.2					5
94				Tan brown to red brown CLAYEY SILT	4	3987.0					
					5	3987.0					
10					6	3987.0					10
89					7	3987.0					
				Refusal at 14'.							
15											15

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# LOG OF BORING GP-24

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Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 20 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0	AR		Black asphalt			0
1			Red brown to tan brown SILTY CLAY	1	21.9	1
2						2
3				2	80.9	3
4			Tan brown to brown CLAYEY SILT			4
5				3	39.7	5
6						6
7				4	64.7	7
8						8
9				5	92.1	9
10			Crushed concrete, brick and sand			10
11	AR			6	87.8	11
12			Tan brown to brown sandy CLAYEY SILT			12
13				7	26.2	13
14						14
15				8	21.5	15
16						16
17				9	33.6	17
18						18
19				10	64.1	19
20						20





# LOG OF BORING GP-25

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Service #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 12 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0	AR		Black asphalt			0
1			Red brown SILTY CLAY with Quartz gravel	1	0.7	1
2						2
3				2	0.4	3
4						4
5				3	13.8	5
6			Red brown to tan brown CLAYEY SILT			6
7				4	25.7	7
8						8
9				5	26.8	9
10						10
11				6	18.6	11
12			Probe refusal at 12 feet			12




















# LOG OF BORING GP-26

(Page 1 of 1)

Service #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 16 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0	AR		Black asphalt			0
1			Red brown SILTY CLAY	1	3.3	1
2						2
3				2	61.7	3
4						4
5				3	287.3	5
6			Red brown to tan brown CLAYEY SILT			6
7				4	616.6	7
8						8
9				5	256.8	9
10						10
11				6	282.4	11
12						12
13				7	663.9	13
14						14
15				8	1021.9	15
16			Wet at 16 feet.			16




# LOG OF BORING GP-27

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 10 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
0.5	AR					
1			Red brown SILTY CLAY	1	3.5	1
2						2
3				2	1.0	3
4						4
5				3	9.2	5
6			Red brown CLAYEY SILT			6
7				4	558.3	7
8						8
9				5	50.8	9
10			Wet at 10 feet.			10

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12-05-20



# LOG OF BORING GP-28

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 14 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
1	AR		Red brown SANDY SILT	1	0.9	1
2						2
3				2	0.0	3
4						4
5				3	0.5	5
6						6
7				4	3.2	7
8			Red brown to tan brown CLAYEY SILT			8
9				5	5.2	9
10						10
11				6	13.4	11
12						12
13				7	610.2	13
14			Wet at 14 feet.			14



# LOG OF BORING GP-29

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 11 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
0 - 1	AR					
1			Tan brown SILTY CLAY	1	8.8	1
2						2
3				2	14.6	3
4			Red brown SANDY SILT			4
5				3	19.2	5
6						6
7				4	12.7	7
8			Yellow brown SILTY SAND			8
9				5	22.1	9
10	SM					10
11			Refusal at 11 feet.	6	18.8	11




# LOG OF BORING GP-30

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 11 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
1	AR		Red brown SILTY CLAY	1	0.0	1
2						2
3				2	0.0	3
4			Red brown CLAYEY SILT			4
5				3	0.6	5
6						6
7				4	1.7	7
8						8
9				5	14.7	9
10						10
11			Refusal at 11 feet.	6	68.4	11

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12-05-20



# LOG OF BORING GP-31

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 8 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0	AR		Black asphalt			0
1	SM		Yellow brown fill SAND	1	467.8	1
2			Tan brown to red brown silty SANDY CLAY			2
3				2	120	3
4			Tan brown to yellow brown sandy CLAYEY SILT			4
5				3	146.8	5
6						6
7				4	2.3	7
8			Wet at 8 feet.			8

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12-05-21




# LOG OF BORING GP-32

(Page 1 of 1)

Servco #00911  
302-304 Caswell Street  
Wadesboro, NC 28170

Date Started : 10/23/01  
Date Completed : 10/23/01  
Drilling Method : Geoprobe  
Driller : SAEDACCO  
Sampling Method : Continuous Core

Borehole Depth : 10 feet  
Geologist : Brian A. Parks

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	FID (ppm)	Depth in Feet
0			Black asphalt			0
1	AR		Red brown SILTY CLAY	1	0.0	1
2						2
3			Red brown CLAYEY SILT	2	0.0	3
4						4
5				3	125.6	5
6						6
7				4	199.6	7
8						8
9				5	275.1	9
10			Refusal at 10 feet.			10

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12-05-



**Appendix C**

**Boring Logs**



**Hart & Hickman**  
A Professional Corporation  
501 Minuet Lane Suite 101  
Charlotte, North Carolina  
(704)586-0007 (704)586-0373-fax

# LOG OF BORING: DPT-1

Project: **DPT - ROW Wadesboro**  
Job No: **ROW-013**  
Location: **Wadesboro, NC**

Surface Elev:  
Top of Casing Elev:  
Drilling Rig/Method: **Geoprobe 666**  
Sampling Method: **DPT - Sample Tubes**

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION <small>(The stratification lines represent approximate boundaries. The transition may be gradual.)</small>	SPT, Blow Counts	OVA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0					Asphalt & base 0-6"				
			ML	100	Brown-Red Clayey Sandy Silt	N/A	0.0	0.0	N/A
							0.0	0.0	
5			ML	100			0.0	0.0	
							0.0	0.0	
10			ML	100	Brown-Tan Sandy Silt		0.0	0.0	
							0.0	0.0	
15					Terminated @ 15'				
20									
25									

Completion Depth: **15'**  
Date Boring Started: **10/17/03**  
Date Boring Completed: **10/17/03**  
Engineer/Geologist: **TWB**  
Drilling Contractor: **SEI**

Remarks: **Grid 80-110**

Revision	Drawn By	Date	Checked	Approved

# LOG OF BORING: DPT-2

Project: *DOT-ROW Wadesboro*  
 Job No: *ROW-013*  
 Location: *Wadesboro, NC*

Surface Elev:  
 Top of Casing Elev:  
 Drilling Rig/Method: *Geoprobe GC*  
 Sampling Method: *DPT - Sample Tubes*

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	OVA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0					<i>Asphalt &amp; Base cover</i>				
			<i>ML 100</i>		<i>Red-Brown clayey fine-Med sandy Silt</i>	<i>N/A</i>	<i>0.0</i>	<i>0.0</i>	<i>N/A</i>
							<i>0.0</i>	<i>0.0</i>	
	<i>5</i>						<i>0.0</i>	<i>0.0</i>	
			<i>ML 100</i>		<i>Same w/ white mottling</i>		<i>0.0</i>	<i>0.0</i>	
	<i>10</i>						<i>0.0</i>	<i>0.0</i>	
			<i>ML 100</i>				<i>0.0</i>	<i>0.0</i>	
	<i>15</i>				<i>Boring Terminated @ 15'</i>		<i>0.0</i>	<i>0.0</i>	
	<i>20</i>								
	<i>25</i>								

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Completion Depth: *15*  
 Date Boring Started: *10/17/03*  
 Date Boring Completed: *10/17/03*  
 Engineer/Geologist: *TWB*  
 Drilling Contractor: *SEI*

Remarks: *Grid 110-90*

Revision	Drawn By	Date	Checked	Approved

# LOG OF BORING: DPT-3

Project: DOT-ROW Wadesboro  
 Job No: ROW-013  
 Location: Wadesboro, NC

Surface Elev:  
 Top of Casing Elev:  
 Drilling Rig/Method: Geoprobe Co  
 Sampling Method: DPT - Sample Tubes

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	OWA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0					Asphalt & Base	N/A			N/A
			ML 100		Red-Brown Clayey Fine-Med Sandy Silt		0.0	00	
							0.0	31	
5			ML 109		Brown-Tan Clayey Fine Sandy Silt		0.0	5.3	
							0.0	4.7	
10			ML 100				0.0	1.3	
15					Boring Terminated @ 15'				
20									
25									

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Completion Depth: 15'  
 Date Boring Started: 10/17/03  
 Date Boring Completed: 10/17/03  
 Engineer/Geologist: TWB  
 Drilling Contractor: SEI

Remarks: Grid 120-50

Revision	Drawn By	Date	Checked	Approve.

# LOG OF BORING: DPT-4

Project: *DOT-ROW Wadesboro*  
 Job No: *ROW-013*  
 Location: *Wadesboro, NC*

Surface Elev:  
 Top of Casing Elev:  
 Drilling Rig/Method: *Casper Co Co*  
 Sampling Method: *DPT - Sample Tube*

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	BKG. OVA (ppm)		WELL DIAGRAM
							BKG.	OVA SAMP.	
0					<i>Asphalt &amp; Base</i>				
				100	<i>Red-Brown Clayey fine-med sandy silt</i>	<i>N/A</i>	00	0.0	<i>N/A</i>
		<i>ML</i>					00	0.8	
	5			100	<i>Rock @ 6'</i>		00	1.0	
		<i>ML</i>			<i>Same w/ more tan sands</i>		00	2.58	
	10			100			00	6.99	
		<i>ML</i>					00	2.8	
	15				<i>Terminated @ 15'</i>				
	20								
	25								

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Completion Depth: *15*  
 Date Boring Started: *10/17/03*  
 Date Boring Completed: *10/17/03*  
 Engineer/Geologist: *TWB*  
 Drilling Contractor: *SEI*

Remarks: *Grid 150-105*

Revision	Drawn By	Date	Checked	Approve

# LOG OF BORING: DPT-5

Project: DOT - ROW Wadesboro  
 Job No: ROW - 013  
 Location: Wadesboro, NC

Surface Elev:  
 Top of Casing Elev:  
 Drilling Rig/Method: Geoprobe GC  
 Sampling Method: DPT - Sample Tubes

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	BKG. OVA (ppm)		WELL DIAGRAM
							BKG.	OVA SAMP.	
0	0				Asphalt & Base				
			ML 100		Red-Brown clayey fine Med Sandy Silt	N/A	0.0	9.0	N/A
							0.0	0.0	
	5						0.0	0.0	
			ML 100		Red-Brown clayey fine Sandy silt		0.0	0.2	
							0.0	0.6	
	10						0.0	0.7	
			ML 100				0.0	0.7	
	15				Terminated @ 15'				
	20								
	25								

Completion Depth: 15  
 Date Boring Started: 10/17/03  
 Date Boring Completed: 10/17/03  
 Engineer/Geologist: TWB  
 Drilling Contractor: SEI

Remarks: Grid 155-130

Revision	Drawn By	Date	Checked	Approve.
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# LOG OF BORING: DPT-6e

Project: DOT-ROW Wadesboro  
 Job No: ROW-013  
 Location: Wadesboro, NC

Surface Elev:  
 Top of Casing Elev:  
 Drilling Rig/Method: Geoprobe GC  
 Sampling Method: DPT - Sample Tubes

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	OVA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0					concrete cover	N/A	0.0	0.0	N/A
			ML	100	Red-Brown clayey fine sandy silt		0.0	0.2	
	5		ML	100			0.0	0.0	
	10		ML	100	Same w/ more medium sand		0.0	0.6	
	15		ML	100			0.0	0.0	
	20				Boring Terminated @ 15		0.0	0.0	
	25								

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Completion Depth: 15  
 Date Boring Started: 10/17/03  
 Date Boring Completed: 10/17/03  
 Engineer/Geologist: TWB  
 Drilling Contractor: SEI

Remarks: Grid 138-133

Revision	Drawn By	Date	Checked	Approved

# LOG OF BORING: DPT-7

Project: *DOT-ROW Wadesboro*  
 Job No: *ROW-013*  
 Location: *Wadesboro, NC*

Surface Elev:  
 Top of Casing Elev:  
 Drilling Rig/Method: *Geoprobe CoCo*  
 Sampling Method: *DPT - Sample Tubes*

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	OVA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0					<i>Asphalt &amp; Base</i>	<i>N/A</i>			<i>N/A</i>
			<i>ML 100</i>		<i>Red-Brown clayey fine sandysilt</i>		<i>0.0</i>	<i>0.0</i>	
					<i>Same w/ tan mottling</i>		<i>0.0</i>	<i>0.0</i>	
5					<i>Brown-tan fine sandysilt</i>		<i>0.0</i>	<i>0.0</i>	
			<i>ML 100</i>				<i>0.0</i>	<i>0.0</i>	
10					<i>Boring Terminated @ 10'</i>				
15									
20									
25									

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Completion Depth: *10*  
 Date Boring Started: *10/17/03*  
 Date Boring Completed: *10/17/03*  
 Engineer/Geologist: *TWB*  
 Drilling Contractor: *SEI*

Remarks: *Grid 50-130*

Revision	Drawn By	Date	Checked	Approved



# LOG OF BORING: DPT-8

Project: DOT - ROW Wadesboro  
Job No: ROW-013  
Location: Wadesboro, NC

Surface Elev:  
Top of Casing Elev:  
Drilling Rig/Method: Geoprobe G6  
Sampling Method: DPT - Sample Tubes

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	OVA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0					Asphalt # Base	N/A			N/A
			ML 100		Tan - Brown clayey Med Sand silt		00	1.8	
					Red - Brown clayey fine Med Sand silt		00	09	
5					Same, more sand		00	4.3	
			ML 100						
10					Terminated @ 10'			00	8.7
15									
20									
25									

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Completion Depth: 10'  
Date Boring Started: 10/17/03  
Date Boring Completed: 10/17/03  
Engineer/Geologist: TWB  
Drilling Contractor: SEI

Remarks: Ord 165-105

Revision	Drawn By	Date	Checked	Approved

# LOG OF BORING: DPT-9

Project: *DOT-ROW Wadesboro*  
 Job No: *ROW-013*  
 Location: *Wadesboro, NC*

Surface Elev: \_\_\_\_\_  
 Top of Casing Elev: \_\_\_\_\_  
 Drilling Rig/Method: *Geoprobe G60*  
 Sampling Method: *DPT - Sample Tubing*

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	BKG. OVA (ppm)		WELL DIAGRAM
							BKG.	OVA SAMP.	
	0				<i>Asphalt &amp; Base</i>	<i>N/A</i>			<i>N/A</i>
		<i>ML</i>		<i>80</i>	<i>Red-Brown clayey med sand/silt with gravel</i>		<i>0.0</i>	<i>424</i>	
		<i>GC</i>			<i>Tan &amp; Gray sandy silty Gravel</i>		<i>0.0</i>	<i>3.8</i>	
	5	<i>SL</i>		<i>60</i>	<i>Orange &amp; Tan coarse-med silty sand</i>		<i>0.0</i>	<i>314</i>	
		<i>SP</i>			<i>Tan Medium Sand</i>		<i>0.0</i>	<i>138</i>	
	10	<i>SP</i>		<i>60</i>	<i>Red-Brown clayey med sand/silt</i>		<i>0.0</i>	<i>108</i>	
		<i>ML</i>			<i>Red-Brown clayey med sand/silt</i>		<i>0.0</i>	<i>377</i>	
	15				<i>Terminated @ 15'</i>				
	20								
	25								

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Completion Depth: *15*  
 Date Boring Started: *10/17/03*  
 Date Boring Completed: *10/17/03*  
 Engineer/Geologist: *TWB*  
 Drilling Contractor: *SEI*

Remarks: *Grid 830/120*

Revision	Drawn By	Date	Checked	Approved

# LOG OF BORING: DPT-10

Project: DOT-ROW Wadesboro  
Job No: ROW-013  
Location: Wadesboro, NC

Surface Elev:  
Top of Casing Elev:  
Drilling Rig/Method: Geoprobe GC  
Sampling Method: DPT - Sample Tubes

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	BKG. OVA (ppm)		WELL DIAGRAM
							BKG.	OVA SAMP.	
0	0				Gravel cover Red Brown clayey Med-Fine Sand/silt	N/A	0.0	0.0	N/A
			ML 60				0.0	1.4	
	5				Same With more H <sub>2</sub> O & Sporadic gravels		0.0	10.6	
			ML 80				0.0	9.54	
	10				Terminated @ 10'				
	15								
	20								
	25								

Completion Depth: 10'  
Date Boring Started: 10/17/03  
Date Boring Completed: 10/17/03  
Engineer/Geologist: TWB  
Drilling Contractor: SEI

Remarks: Bid - 210/95

Revision	DrawnBy	Date	Checked	Approve

S:\Master F... \A-Master Templates\Symbols & Templates\Titleblocks\logbore20.dwg, 1:1



# LOG OF BORING: DPT-12

Project: DOT-ROW Wadesboro  
Job No: ROW-013  
Location: Wadesboro, NC

Surface Elev.:  
Top of Casing Elev.:  
Drilling Rig/Method: Geoprobe GC  
Sampling Method: DPT - Sample Tubes

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	OVA (ppm)		WELL DIAGRAM
							BKG.	SAMP.	
0	0				Asphalt & Base	N/A			N/A
					Dark Brown Clayey Medium Sandy silt		0.0	2.3	
			ML 80				0.0	6.2	
	5						0.0	37.7	
			ML 80		Red-Brown Clayey Med-Fine Sandy silt		0.0	11.0	
	10				Terminated @ 10'				
	15								
	20								
	25								

M:\Master Templates\Symbols\templates\Titleblock\borlog.dwg, 1:1

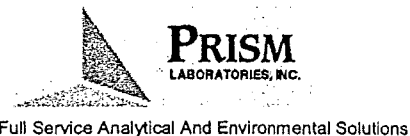
Completion Depth: 10  
Date Boring Started: 10/17/03  
Date Boring Completed: 10/17/03  
Engineer/Geologist: TWB  
Drilling Contractor: SEI

Remarks: Grid 150-50

Revision	Drawn By	Date	Checked	Approved

**Appendix D**  
**Laboratory Analytical Reports**

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID:** Wadesboro ROW-013  
**Customer Sample ID:** DPT-1 (2.5-5)  
**Prism Sample ID:** AC97235     **Matrix:** Soil  
**Login Group:** 3058L14  
**Sample Collection Date/Time:** 10/17/03     10:35  
**Lab Submittal Date/Time:** 10/17/03     18:29

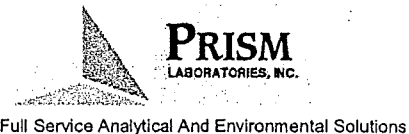
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 03:45	EHT
SURR: GRO	73	%	34-128	8015B/5030	10/21/03 03:45	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 03:45	EHT
CALCULATIONS BASED ON DRY WT.	86	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.26g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/23/03 02:14	JMV
SURR: o-TERPHENYL	68	%	20-151	SW846-8015B	10/23/03 02:14	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/23/03 02:14	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID: Wadesboro ROW-013**  
**Customer Sample ID: DPT-2 (2.5-5)**  
**Prism Sample ID: AC97236**     **Matrix: Soil**  
**Login Group: 3058L14**  
**Sample Collection Date/Time: 10/17/03 11:10**  
**Lab Submittal Date/Time: 10/17/03 18:29**

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

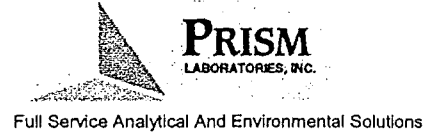
TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/20/03 23:30	EHT
SURR: GRO	71	%	34-128	8015B/5030	10/20/03 23:30	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/20/03 23:30	EHT
CALCULATIONS BASED ON DRY WT.	88	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.16g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/23/03 03:00	JMV
SURR: o-TERPHENYL	68	%	20-151	SW846-8015B	10/23/03 03:00	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/23/03 03:00	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services



# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID: Wadesboro ROW-013**  
**Customer Sample ID: DPT-3 (2.5-5)**  
**Prism Sample ID: AC97237**    **Matrix: Soil**  
**Login Group: 3058L14**  
**Sample Collection Date/Time: 10/17/03 11:20**  
**Lab Submittal Date/Time: 10/17/03 18:29**

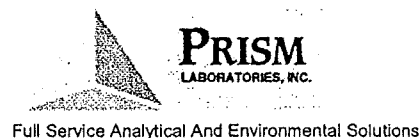
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 04:58	EHT
SURR: GRO	81	%	34-128	8015B/5030	10/21/03 04:58	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 04:58	EHT
CALCULATIONS BASED ON DRY WT.	83	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.07g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	58	mg/kg	10	SW846-8015B	10/24/03 04:37	JMV
SURR: o-TERPHENYL	94	%	20-151	SW846-8015B	10/24/03 04:37	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/24/03 04:37	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID: Wadesboro ROW-013**  
**Customer Sample ID: DPT-4 (2.5-5)**  
**Prism Sample ID: AC97238**    **Matrix: Soil**  
**Login Group: 3058L14**  
**Sample Collection Date/Time: 10/17/03 11:40**  
**Lab Submittal Date/Time: 10/17/03 18:29**

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 03:09	EHT
SURR: GRO	84	%	34-128	8015B/5030	10/21/03 03:09	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 03:09	EHT
CALCULATIONS BASED ON DRY WT.	81	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.28g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/22/03 18:35	JMV
SURR: o-TERPHENYL	65	%	20-151	SW846-8015B	10/22/03 18:35	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/22/03 18:35	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID:** Wadesboro ROW-013  
**Customer Sample ID:** DPT-4 (7.5-10)  
**Prism Sample ID:** AC97239     **Matrix:** Soil  
**Login Group:** 3058L14  
**Sample Collection Date/Time:** 10/17/03     11:45  
**Lab Submittal Date/Time:** 10/17/03     18:29

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

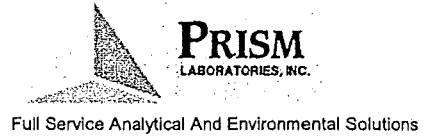
TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	1.1	mg/kg	1.0	8015B/5030	10/22/03 03:24	EHT
SURR: GRO	73	%	34-128	8015B/5030	10/22/03 03:24	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/22/03 03:24	EHT
CALCULATIONS BASED ON DRY WT.	84	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.13g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	740	mg/kg	100	SW846-8015B	10/24/03 07:40	JMV
SURR: o-TERPHENYL	DO	%	20-151	SW846-8015B	10/24/03 07:40	JMV
DILUTION FACTOR	10	mg/kg		SW846-8015B	10/24/03 07:40	JMV

Sample Comments:

Analysis note for DRO: Surrogate was diluted out.

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID: Wadesboro ROW-013**  
**Customer Sample ID: DPT-5 (5-7.5)**  
**Prism Sample ID: AC97240**     **Matrix: Soil**  
**Login Group: 3058L14**  
**Sample Collection Date/Time: 10/17/03 12:00**  
**Lab Submittal Date/Time: 10/17/03 18:29**

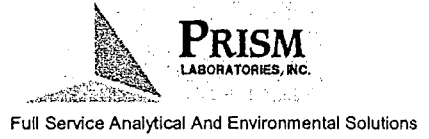
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 01:56	EHT
SURR: GRO	70	%	34-128	8015B/5030	10/21/03 01:56	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 01:56	EHT
CALCULATIONS BASED ON DRY WT.	81	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.34g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/22/03 13:58	JMV
SURR: o-TERPHENYL	83	%	20-151	SW846-8015B	10/22/03 13:58	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/22/03 13:58	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID: Wadesboro ROW-013**  
**Customer Sample ID: DPT-6 (5-7.5)**  
**Prism Sample ID: AC97241**     **Matrix: Soil**  
**Login Group: 3058L14**  
**Sample Collection Date/Time: 10/17/03 12:20**  
**Lab Submittal Date/Time: 10/17/03 18:29**

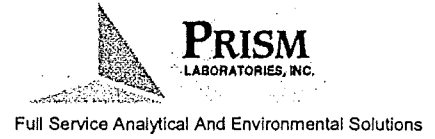
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 06:48	EHT
SURR: GRO	75	%	34-128	8015B/5030	10/21/03 06:48	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 06:48	EHT
CALCULATIONS BASED ON DRY WT.	83	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.08g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/23/03 03:45	JMV
SURR: o-TERPHENYL	82	%	20-151	SW846-8015B	10/23/03 03:45	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/23/03 03:45	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

Customer Project ID: Wadesboro ROW-013  
Customer Sample ID: DPT-7 (2.5-5)  
Prism Sample ID: AC97242 Matrix: Soil  
Login Group: 3058L14  
Sample Collection Date/Time: 10/17/03 13:40  
Lab Submittal Date/Time: 10/17/03 18:29

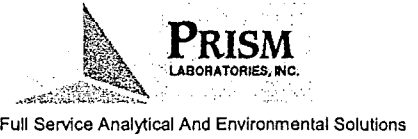
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 00:06	EHT
SURR: GRO	77	%	34-128	8015B/5030	10/21/03 00:06	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 00:06	EHT
CALCULATIONS BASED ON DRY WT.	88	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.07g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/22/03 15:27	JMV
SURR: o-TERPHENYL	88	%	20-151	SW846-8015B	10/22/03 15:27	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/22/03 15:27	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID:** Wadesboro ROW-013  
**Customer Sample ID:** DPT-8 (7.5-10)  
**Prism Sample ID:** AC97243     **Matrix:** Soil  
**Login Group:** 3058L14  
**Sample Collection Date/Time:** 10/17/03     14:00  
**Lab Submittal Date/Time:** 10/17/03     18:29

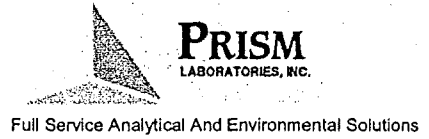
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/20/03 22:17	EHT
SURR: GRO	78	%	34-128	8015B/5030	10/20/03 22:17	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/20/03 22:17	EHT
CALCULATIONS BASED ON DRY WT.	81	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.30g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	Not detected	mg/kg	10	SW846-8015B	10/23/03 04:30	JMV
SURR: o-TERPHENYL	82	%	20-151	SW846-8015B	10/23/03 04:30	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/23/03 04:30	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID:** Wadesboro ROW-013  
**Customer Sample ID:** DPT-9 (0-2.5)  
**Prism Sample ID:** AC97244 **Matrix:** Soil  
**Login Group:** 3058L14  
**Sample Collection Date/Time:** 10/17/03 14:15  
**Lab Submittal Date/Time:** 10/17/03 18:29

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

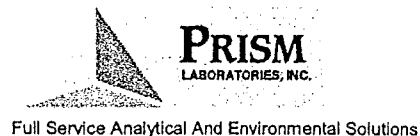
TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	31	mg/kg	2.0	8015B/5030	10/22/03 23:44	EHT
SURR: GRO	118	%	34-128	8015B/5030	10/22/03 23:44	EHT
DILUTION FACTOR	10	mg/kg		8015B/5030	10/22/03 23:44	EHT
CALCULATIONS BASED ON DRY WT.	88	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.16g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	34	mg/kg	10	SW846-8015B	10/22/03 14:44	JMV
SURR: o-TERPHENYL	96	%	20-151	SW846-8015B	10/22/03 14:44	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/22/03 14:44	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services



# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID: Wadesboro ROW-013**  
**Customer Sample ID: DPT-10 (7.5-10)**  
**Prism Sample ID: AC97245**    **Matrix: Soil**  
**Login Group: 3058L14**  
**Sample Collection Date/Time: 10/17/03 14:50**  
**Lab Submittal Date/Time: 10/17/03 18:29**

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

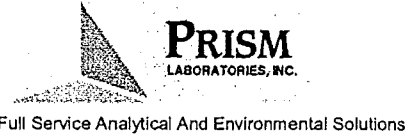
TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	190	mg/kg	10	8015B/5030	10/23/03 07:37	EHT
SURR: GRO	109	%	34-128	8015B/5030	10/23/03 07:37	EHT
DILUTION FACTOR	50	mg/kg		8015B/5030	10/23/03 07:37	EHT
CALCULATIONS BASED ON DRY WT.	81	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.10g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	770	mg/kg	100	SW846-8015B	10/24/03 06:54	JMV
SURR: o-TERPHENYL	DO	%	20-151	SW846-8015B	10/24/03 06:54	JMV
DILUTION FACTOR	10	mg/kg		SW846-8015B	10/24/03 06:54	JMV

Sample Comments:

Analysis note for DRO: Surrogate was diluted out.

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

Customer Project ID: Wadesboro ROW-013  
Customer Sample ID: DPT-11 (2.5-5)  
Prism Sample ID: AC97246 Matrix: Soil  
Login Group: 3058L14  
Sample Collection Date/Time: 10/17/03 15:00  
Lab Submittal Date/Time: 10/17/03 18:29

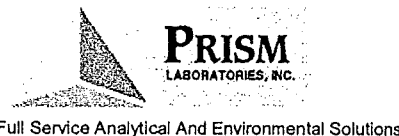
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 04:22	EHT
SURR: GRO	84	%	34-128	8015B/5030	10/21/03 04:22	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 04:22	EHT
CALCULATIONS BASED ON DRY WT.	86	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.16g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	15	mg/kg	10	SW846-8015B	10/23/03 05:16	JMV
SURR: o-TERPHENYL	109	%	20-151	SW846-8015B	10/23/03 05:16	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/23/03 05:16	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID:** Wadesboro ROW-013  
**Customer Sample ID:** DPT-12 (5-7.5)  
**Prism Sample ID:** AC97247 **Matrix:** Soil  
**Login Group:** 3058L14  
**Sample Collection Date/Time:** 10/17/03 15:15  
**Lab Submittal Date/Time:** 10/17/03 18:29

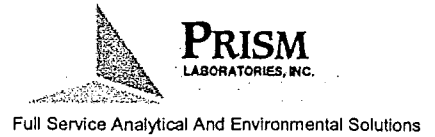
The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
GASOLINE RANGE ORGANICS (GRO)	Not detected	mg/kg	1.0	8015B/5030	10/21/03 00:43	EHT
SURR: GRO	87	%	34-128	8015B/5030	10/21/03 00:43	EHT
DILUTION FACTOR	1	mg/kg		8015B/5030	10/21/03 00:43	EHT
CALCULATIONS BASED ON DRY WT.	87	% DRY WT.	0.01	SM 2540 G	10/22/03 10:25	EJM
PREP. METHOD 3545 FOR DIESEL	25.20g-mL			SW846-3545	10/21/03 11:30	CWC
DIESEL RANGE ORGANICS (DRO)	31	mg/kg	10	SW846-8015B	10/23/03 06:02	JMV
SURR: o-TERPHENYL	98	%	20-151	SW846-8015B	10/23/03 06:02	JMV
DILUTION FACTOR	1	mg/kg		SW846-8015B	10/23/03 06:02	JMV

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

# Lab Report



10/24/03

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Hart & Hickman  
Mike Crouch  
501 Minuet Lane, Suite 101  
Charlotte, NC 28217

**Customer Project ID:** Wadesboro ROW-013  
**Customer Sample ID:** QC  
**Prism Sample ID:** AC97248 **Matrix:** Soil  
**Login Group:** 3058L14  
**Sample Collection Date/Time:** 10/17/03  
**Lab Submittal Date/Time:** 10/17/03 18:29

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

TEST PARAMETER	TEST RESULT	UNITS	REPORTING LIMIT	METHOD REFERENCE	DATE/TIME STARTED	ANALYST
DRO QC REPORT				xDRO-8015/MOD	10/20/03 11:34	JMV
QC DATA FOR DRO / 3550						
Batch ID: SDRO-102003						
Spiked Sample:						
	True Value mg/kg	Observed mg/kg	% Recovery	Acceptance Range		
Method Blank	N/A	< 10	N/A	< 10		
Blank Spike	80.0	55.9	70	54-143%		
Matrix Spike	80.0	60.0	75	44-147%		
MS Duplicate	80.0	56.0	70	44-147%		
RPD			7	< 36%		
GRO QC REPORT				xGRO/8015MOD	10/20/03 18:00	EHT
QC DATA FOR 8015 / GRO SOILS						
Batch ID: VGC-E-102003						
Spiked sample: AC97246						
	True Value mg/kg	Observed mg/kg	% Recovery	Acceptance Range		
Method Blank	N/A	< 1.0	N/A	< 1.0		
LCS	2.0	1.66	83	64-124%		
Matrix Spike	2.0	1.70	85	37-126%		
MS Duplicate	2.0	1.57	79	37-126%		
RPD			8.0	< 34		

Sample Comments:

Angela D. Overcash, V.P. Laboratory Services

NC Certification No. 402 - SC Certification No. 99012 - NC Drinking Water Cert. No. 37735 - FL Certification No. E87519

449 Springbrook Road - PO Box 240543 - Charlotte, NC 28224-0543  
Phone: 740-529-6364 - Toll Free Number: 1-800-529-6364 - Fax: 704-525-0409