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**ENVIRONMENTAL**



**PROFESSIONALS LTD.<sup>SM</sup>**

DEPARTMENT OF  
NATURAL RESOURCES  
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November 13, 1996

Binyoti F. Amungwafor  
Hydrogeologist  
Superfund Program  
State of Wisconsin DNR  
4041 N. Richards St.  
P.O. Box 12436  
Milwaukee, WI 53212

RE: Workplan to Provide Investigation and Remediation Services  
Redi-Quick Cleaners  
9508 West Greenfield Avenue  
West Allis, WI 53214  
WDNR FID# 241170490

Environmental Professionals, Ltd. (EPL) is pleased to submit this Workplan to investigate and recommend appropriate subsurface remediation on the subject Property (Project).

Services described herein represent EPL's best knowledge and belief of existing conditions as well as appropriate analysis and improvements required, based upon EPL's present understanding developed through site visits, review of reports provided by the Operators, and discussions with representatives of the Operators and Wisconsin Department of Natural Resources (WDNR) staff. The Clients and EPL understand that actual conditions encountered may vary from assumed conditions and may require modifications to this Agreement.

Services described herein are intended to conform to applicable WDNR regulations and guidance and to meet the work plan and schedule requirements contained in WDNR's 12/8/94 letter.

**A. GENERAL INFORMATION**

1. Facility Name, Location and Contact  
Redi-Quick Cleaners  
9508 West Greenfield Avenue  
West Allis, WI 53214



Mr. and Mrs. Serb and Dorothy Gruichich, Operators  
(414) 771-1280

2. Owner

Ms. Ruth Barnekow (Ms. Kristine Hein, Agent)  
P.O. Box 82  
Florence, WI 54121  
(715) 528-4439

**B. UNDERSTANDING OF THE PROJECT**

This Agreement is based on the following understanding of the Project:

1. Clients' Relationship to Project.

Owner has owned the Property prior to the time Operator initially leased the Property. Operator has leased the property since July, 1981 and has operated a dry cleaning establishment.

Tank removals and remediation activities to date have been provided by others under contract with the Owner. Previous reports indicate that there were two groups of two underground storage tanks (USTs) each, located approximately where shown on the attached Figure 1. The West Group was located in the southwestern portion of the Property in front of the former service bay of the original gas station (the area which was most recently occupied by an automobile striping firm before Redi-Quick Cleaners expanded into it to gain additional storage). The East Group was located in the southeastern portion of the Property, in front of that part of the building originally occupied by Redi-Quick. Gasoline-related contamination was identified in both excavations during tank removals and has been the subject of remediation activities.

EPL understands that petroleum contamination impacts have been investigated by a previous consultant. In a letter dated 06/28/94, WDNR requested the Owner to initiate active groundwater treatment, determine the extent of groundwater contamination and groundwater flow direction, and determine the source of solvent contamination. EPL understands that evidence exists of groundwater contamination as summarized in the attached Table 1.

During a walk-through visit, EPL identified a small UST within the dry cleaning area that was connected to a drain in a raised area above the floor. Probing of this UST indicated it to be an extensively corroded metal tank 56 in. long, 34 in. wide and 27 in. deep, with about 8 in. of liquid in the bottom. The Operators indicate they have noticed that the liquid level in the UST appears to rise and fall, perhaps due to local groundwater conditions.

## 2. Previous Reports

Previous consultant reports have summarized results of UST removals and subsurface investigation and remediation activities contracted by the Owner. These reports include a 12/26/89 UST Excavation Assessment, a 7/25/90 Remedial Investigation, a 5/31/91 Remedial Action Report and three reports of Groundwater Sampling Results, dated 10/28/92, 1/29/93, and 4/1/93. Another round of groundwater sampling was scheduled for May, 1993, but EPL is not aware of whether it took place. Some important observations in earlier reports include:

- a. Soil and bedrock conditions. Natural soil on the Property is predominantly glacial ground moraine consisting of unstratified till made up of stiff to hard lean clay, with some isolated sand layers in the far southeast and southwest. Sand fill was encountered in the top 8 feet of the former East Group excavation. Hydraulic conductivities are expected in the low  $10 \text{ E-7 cm/sec}$  range, (where DRO/GRO concentrations of 250 mg/kg may be allowed to remain under certain circumstances.) Undifferentiated bedrock is typically 50 to 200 feet below ground surface in this area.
- b. Groundwater location and movement. The Quarterly Monitoring Reports indicate that the water tables in monitoring wells MW-2 and MW-8, on the eastern portion of the Property, are 9.3 to 14 feet deeper than MW-4, which is located on the far western end, as indicated in the attached Table 2. The water tables in the eastern monitoring wells are 13 to 19 feet below ground surface (bgs) while the water table in MW-4 is only about 5 feet bgs. The recovery sumps in each former excavation have water tables within 4 feet bgs.

The surface slopes from west to east (2 feet from MW-4 to MW-2), and the groundwater gradient, as represented by MW-2, MW-

4 and MW-8, also slopes to the east. However, with the axis of the monitoring wells in nearly an east-west plane, it is difficult to say if the movement is directly west to east. Groundwater movement in upper portions of developed areas is often affected by underground utilities and naturally impervious soils. Groundwater recharge over the entire site can be expected to be low, although higher in the former excavations, which can be described as higher permeability catchment areas dug into the natural clay.

### 3. Presumed Existing Subsurface Conditions - East Group Area

Total Petroleum Hydrocarbon (TPH) concentrations were not detected in the four soil wall samples and one soil bottom sample taken for laboratory testing on 2/15-18/91. Lead was found in the three samples reported, at levels of 6.4 to 7.3 mg/kg. Minor levels of the following Volatile Organic Compounds (VOCs) were found in one or more of the three soil samples tested for them: n-Butylbenzene; tert-Butylbenzene; Ethylbenzene; Naphthalene; 1,2,3-Trimethylbenzene; m,p-Xylene.

Of the three groundwater sampling rounds taken during the monitoring program provided from 8/91 to 2/92, the second, provided in 11/92, had the highest overall VOC readings. However, by far the most important unresolved concern is the high levels of chlorinated hydrocarbons that were detected in the East Recovery Sump (RSE) in 11/92 and again in 2/93. Although total VOCs dropped from 630 ug/l in 11/92 to 340 ug/l in 2/93, three parameters (Tetrachloroethene, Trichloroethene, and Vinyl Chloride, remained significantly above the ES and three others (Benzene, 1,2-Dichloroethane and cis-1,2-Dichloroethene, were below the ES but exceeded the PALs.

### 4. Presumed Existing Subsurface Conditions - West Group Area

TPH concentrations (as gasoline) were detected in the soil in two of the three wall samples and one bottom sample taken for laboratory testing on 2/14/91 after remediation activities. Concentrations were 92 and 13 mg/kg. Lead was found in the two samples tested for that parameter, at levels of 8.5 and 11 mg/kg. High levels of VOCs were found in the bottom sample (Benzene, 10 times above the NR 620 standard for soil) and west wall sample (1190 ug/kg tert-Butylbenzene, 753 ug/kg Ethylbenzene, 696 ug/kg p-Isopropylbenzene, 4860 ug/kg

Isopropyltoluene, 10,800 ug/kg n-Propylbenzene, 1500 ug/kg Styrene, 516 ug/kg Toluene, 3030 ug/kg 1,2,4-Trimethylbenzene, 10,000 ug/kg 1,3,5-Trimethylbenzene, and 15,180 ug/kg Xylenes). These imply stronger cleaners and solvents than found in dry cleaning operations, and perhaps also petroleum contamination. Of the three groundwater tests taken, the last, on 02/23/93, had lower VOC readings in monitoring well MW-4, but significantly higher readings in the West Recovery Sump (RSW). No ES was exceeded in monitoring well MW-4 and only Tetrachloroethene exceeded the PAL. In the RSW, most parameters identified in RWE were present at similar or lower levels. Trichloroethene and Vinyl Chloride exceeded the ES, while Benzene, 1,1-Dichloroethene and cis-1,2-Dichloroethene exceeded PAL. Tetrachloroethene was not detected. It is unclear at this time if and how these parameters can migrate upgradient through the site, and it is possible that contamination may come from a source other than the previous or present dry cleaning operations.

Examination of the western portion of the building revealed a 24 in. dia. concrete sump 40 in. deep that was filled to a depth of 23.5 in. with a semi-solid mixture apparently consisting of sand, paint residues, vehicle cleaning material residues, and perhaps other materials. This mixture filled the sump to about the invert of a 3 in. I.D. drain pipe, which angled southeast towards the front of the building approximately as shown on the enclosed Figure 1, possibly draining to a sewer line running directly south towards West Greenfield Avenue.

#### 5. Additional WDNR Concerns.

At a recent meeting between representatives of WDNR, the Operators and EPL, WDNR requested that the following additional concerns be addressed:

- a. Impact of the remaining UST. EPL has recommended sampling and removal of any material remaining in the UST located within the Redi-Quick facility, removal of the UST itself, and sampling of surrounding soil. WDNR has also requested groundwater sampling in this location, if appropriate.
- b. Possible additional locations of non-petroleum contamination. WDNR has requested that other possible sources of VOC contamination be considered, including any vent where vapors containing VOCs could have condensed and discharged to the

ground. If found, recommendations for an additional soil boring and, if appropriate, groundwater monitoring well at each location should be considered. If such a location exists, an additional monitoring well could help identify the true water table and direction of groundwater flow.

## 6. Previous Information

Previous information generated by others has been submitted to WDNR in the following reports:

- o "UST Excavation Assessments", Midwest Engineering Services, Inc., 12/26/89
- o "Remedial Investigation", Miller Engineers, 7/25/90
- o "Remedial Action Report", Miller Engineers, 5/31/91
- o "Ground Water Sampling Results", Miller Engineers & Scientists (3 reports) 10/26/92, 1/29/93 and 4/1/93.

## 7. Project Approach

The WDNR has indicated that it will require a Closure Plan to initiate groundwater treatment for the site and, upon approval, implement the recommendations. Prior to development of the Closure Plan, additional information will be collected to assist in determining the extent of groundwater contamination and flow direction, and the source of solvent contamination. The Scope of Services contained herein describes the services to be provided during the investigation phase, including the preparation of an Investigation Report and Closure Plan.

Previous non-petroleum contamination has been primarily documented in the groundwater in the two recovery sumps. This Scope of Services will:

- o Dispose of a potential continuing source of solvent contamination by removal of the UST within the building.
- o Remove and store drain sump material in building's west area.
- o Determine if solvent contamination exists under vent in rear of building.
- o Take samples and provide laboratory tests for:
  - Hazardous wastes in the UST sludge and drain sump residue.
  - VOC levels in UST liquid, soil (and groundwater, if encountered) beneath the UST and the vent in the rear of

the building, and in existing and new monitoring wells and the existing groundwater recovery sumps.

- o Pump out and dispose of at least two volumes of groundwater in former West Group and East Group excavations. (For estimating purposes, assume 15,000 gallons are removed.)
- o Provide up to three new borings where shown on Figure 1 and convert one or more to monitoring wells.
- o Prepare and receive approvals of an Investigation Report and Closure Plan that summarizes the investigation activities, identifies the extent and source(s) of non-petroleum groundwater contamination and groundwater flow direction, and recommends any further remediation activities necessary to reach closure.

### C. SCOPE OF SERVICES

Information from previous reports has been used to help prepare this Scope of Services. All activities described herein will be provided consistent with WDNR administrative code requirements and technical guidance.

#### 1. UST Removal.

##### a. Pre-Removal Activities.

Prepare for and meet with Client and WDNR to receive approval of this Agreement. Make corrections required. This scope is based on making nominal changes only. Upon receipt of WDNR approval, provide Health and Safety Plan. Obtain local permits. Notify West Allis Fire Department and Building Inspection Department. Collect a representative sample of material within the UST in the building and convey to certified laboratory for rapid turn-around (3 day) testing. Sample will be analyzed (Waste Management Protocol B) for pH, flashpoint, specific gravity, percent moisture, Btu, percent chloride, TCLP metals to determine whether hazardous and proper disposal options, and for VOC.

##### b. UST Removal Activities.

As soon as test results under Task 1.a are known, excavate the UST and protect the building and foundation. Hang visqueen around excavation to contain dust from concrete removal. Pump out the UST, including water used during

concrete removal, and store liquid on site. Assume two 55 gallon drums of liquid are removed. If groundwater entering the UST becomes virtually the entire source of liquid, suspend pumping. Inert and remove UST and any related piping. This scope assumes closure in place is not an acceptable option. The UST is believed to be a metal container in severely rusted condition and may disintegrate upon excavation. If possible, clean UST and remove and store on site any sludge generated. Remove UST from site and dispose at an authorized facility. Stabilize excavation temporarily, if necessary to prevent cave-in due to high water table. Place 3/4 in. plywood cover temporarily over excavation. Complete UST registration and closure forms.

Provide photoionization detector (PID) field screening of soils at the four UST excavation walls and two feet below the bottom of the excavation. If groundwater is encountered, no bottom field screening will be provided. One bottom and two sidewall soil samples will be taken for laboratory testing. If groundwater is encountered at the level of the UST, one groundwater sample will be taken in place of the bottom soil sample. Samples will be tested for VOCs. Samples will be conveyed to laboratory for rapid turn around testing. This scope assumes the soil is non-hazardous.

Restoration of the concrete floor slab will be provided by others outside the scope of this Agreement.

2. Groundwater Monitoring for Solvent Determination in Existing Monitoring Wells and Recovery Sumps.

Measure depth bgs at monitoring wells MW-2 and MW-8 and recovery sump RSE in the East Group location, and monitoring well MW-4 and recovery sump RSW in the West Group location before and after sampling.

Obtain groundwater samples at existing monitoring wells MW-2, MW-4 and MW-8 and existing recovery sumps RSW and RSE. Include one duplicate sample, one field blank and one trip blank. Convey samples to certified testing laboratory for rapid turn around testing for VOC by EPA Method 8021. If levels identified exceed PAL, provide sump pumpout activities described in Task 5.



One duplicate sample, one field blank and one trip blank will be provided. This scope assumes all samples taken under Tasks 1.b, 2, 3 and 4 will be delivered at the same time.

### 3. Drain Sump Cleanup and Testing

Clean out and place in one sealed 55 gal. drum stored on site all material in the drain sump located in the west portion of the building. Take one representative sample and convey to a certified laboratory for testing. Analyze as a suspected hazardous material for pH, flashpoint, specific gravity, percent moisture, Btu, percent chloride and TLCP metals, and for VOC. Assume the material is 6.3 cu. ft. of hazardous waste.

### 4. Vent Discharge Investigation

Receive an access agreement from the property owner to the north. Notify Diggers Hotline to mark the site. Dig a test pit below the vent discharge on the north wall of the building. Obtain one soil sample at a depth of two feet below ground surface and convey to a certified laboratory for rapid turn-around testing for VOC.

### 5. Dewater Former Excavations.

If samples tested under Task 2 indicate VOC levels above PAL, dewater the West Group and East Group excavations and dispose of pumped liquid. For this Agreement, it is assumed that two volumes (15,000 gallons) of groundwater will be pumped into tanker trucks and disposed off-site as a non-hazardous waste.

### 6. New Borings and Monitoring Wells

Collect one groundwater sample at each recovery sump after the groundwater has recovered from dewatering activities described in Task 5.

After consultation with, and approval by, WDNR, provide up to three new borings. Actual number will depend upon results of initial monitoring provided under Tasks 1, 2, 3 and 4. Log and field screen the borings at 2½ ft. intervals to groundwater and convert the borings to monitoring wells. or this Scope of Services, assume three wells placed to 20 ft. bgs are required.

Provide one boring/monitoring well immediately north of the property if testing provided during UST removal under Task 1.b and/or vent discharge investigation under Task 4 identifies chlorinated hydrocarbon levels. Construct and log one boring in the driveway and convert to a monitoring well. Take two soil samples. Surge and purge well and take one groundwater sample. Convey samples to a certified testing laboratory and test for VOC. Determine groundwater elevation.

Provide one boring/monitoring well between the building and former East Group location if rapid turn around testing during UST removal and RSE sampling after pumpout determine that groundwater VOC levels exceed PAL. Construct and log one boring and convert to a monitoring well. Take two soil samples. Surge and purge the well and take one groundwater sample. Convey samples to certified soil testing laboratory and test for VOC. Determine groundwater elevation.

Provide one boring/monitoring well between the former West Group and East Group locations if RSW and RSE sampling after pumpout determine that groundwater VOC levels exceed PAL. Construct and log one boring and convert to a monitoring well. Take two soil samples. Surge and purge the well and take one groundwater sample. Convey samples to certified testing laboratory and test for VOC. Determine groundwater elevation.

One duplicate sample, one field blank and one trip blank will be provided for each delivery to the laboratory. This scope assumes all samples taken under Task 6 will be delivered to the laboratory in a single trip.

The elevations of the new wells and groundwater therein will be established based on the artificial datum provided by others for this site.

## 7. Investigation Report and Closure Plan

Prepare six copies of a report that discusses results of: the UST removal and testing; the groundwater monitoring activities provided under Task 2 above and compares results to the three previous groundwater sampling activities; the drain sump and vent discharge activities, the new boring/monitoring wells construction and sampling; and dewatering activities. The discussion will include any petroleum-related contamination

identified during these activities. Conclusions in the extent and degree of soil and groundwater solvent contamination will be provided, as well as recommendations for contamination cleanup.

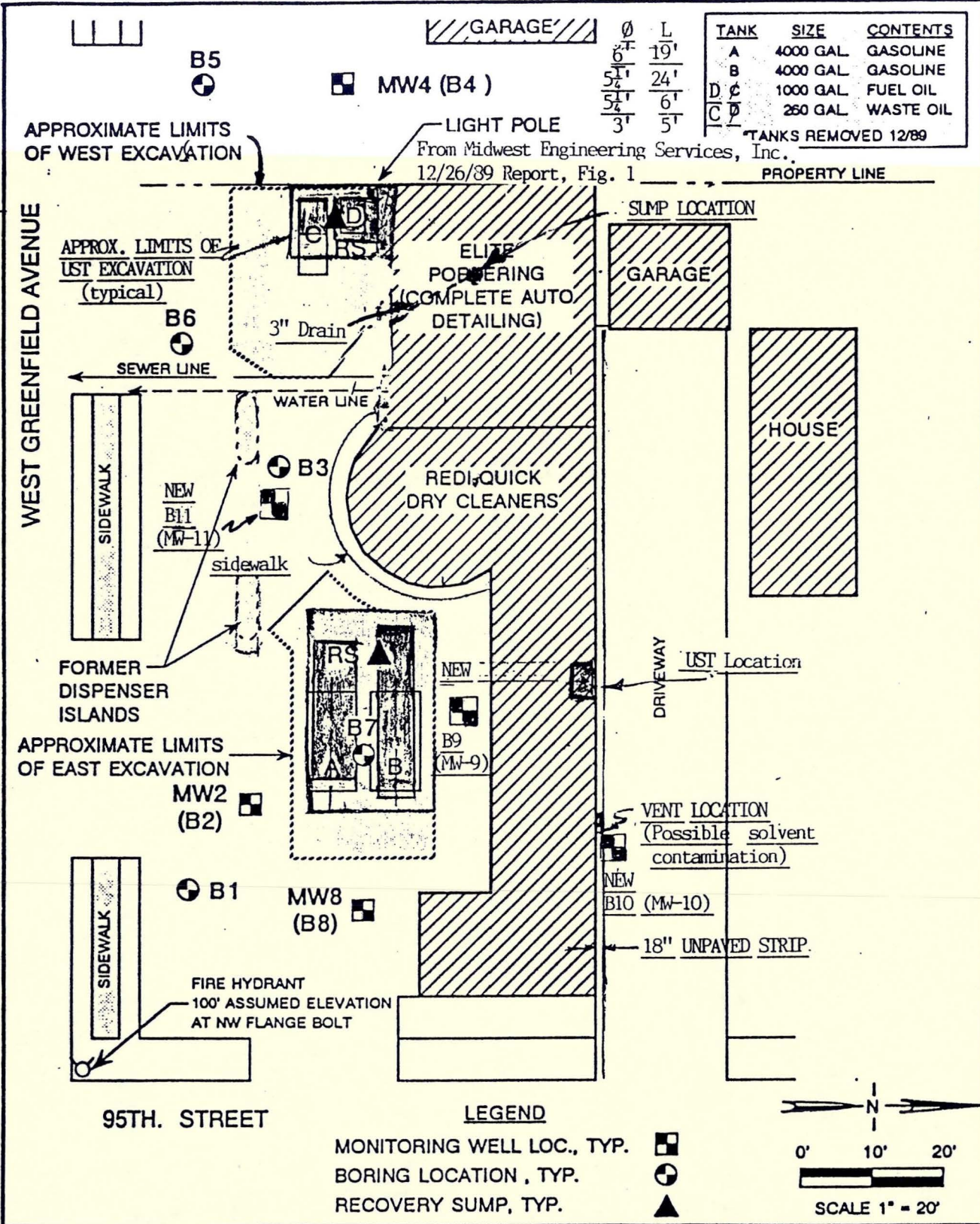
**D. SCHEDULE**

1. EPL will be available to initiate activities immediately upon receipt of a signed copy of this Agreement with deposit, which shall be considered a Notice to Proceed.
2. Field activities described in Tasks 1 through 6 will be completed within 30 working days of receipt of the signed copy of this Agreement and deposit from the Clients. Results of laboratory analyses may extend beyond this period.
3. Task 7 will be provided within 25 working days of receipt of laboratory results.

If there are any questions, please contact our office at (414) 475-2511.

Sincerely,  
ENVIRONMENTAL PROFESSIONALS LTD.

Patti Schott  
President



TANK	SIZE	CONTENTS
A	4000 GAL	GASOLINE
B	4000 GAL	GASOLINE
D	1000 GAL	FUEL OIL
C	260 GAL	WASTE OIL

\*TANKS REMOVED 12/89

Ø	L
6"	19'
5 1/4"	24'
5 1/4"	6'
3"	5'

Date	1-5-93	By	HVM	CLIENT:	KRIS BUETTNER
Job No.	10712E5	CK		JOB:	REDI QUIK - QUARTERLY SAMPLING
			LOCATION:	WEST ALLIS, WISCONSIN	

FROM MILLER ENGINEERS AND SCIENTISTS' "GROUNDWATER SAMPLING RESULTS" REPORT 4/1/93  
 MODIFIED BY ENVIRONMENTAL PROFESSIONALS LTD. 9/15/95

**BORING / MONITORING WELL LOCATION PLAN**