

February 8, 1996

Project Reference #2985-S3

Ms. Giselle Red
State of Wisconsin
Department of Natural Resources
4041 North Richards Street
Box 12436
Milwaukee, WI 53212

RECEIVED

FEB 14 1996

D.N.R. SED Hqtrs.
Milwaukee, WI

Re: **Soil and Groundwater Quality Investigation Work Plan**
Badger Leasing
9601 West Greenfield Avenue
West Allis, Wisconsin

Dear Ms. Red:

Enclosed please find for your review the report titled, "Soil and Groundwater Quality Investigation Work Plan, Badger Leasing, 9601 West Greenfield Avenue, West Allis, Wisconsin."

If you have any questions or comments, please do not hesitate to call me at (414) 768-7144.

Respectfully submitted,

SIGMA ENVIRONMENTAL SERVICES, INC.



Kristin K. Kurzka
Staff Geologic Engineer

KKK:mk

Enclosure



RECEIVED

FID # 241855460 ERR
LUST

FEB 14 1996

D.N.R. SED Hqtrs.
Milwaukee, WI

**SOIL AND GROUNDWATER
QUALITY INVESTIGATION
WORK PLAN
BADGER LEASING
9601 WEST GREENFIELD AVENUE
WEST ALLIS, WISCONSIN**

PREPARED FOR:
**MS. CHRISTINE VERNON
BADGER LEASING
9601 WEST GREENFIELD AVENUE
WEST ALLIS, WISCONSIN**

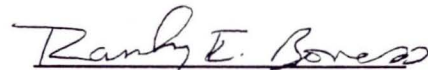
PREPARED BY:
**SIGMA ENVIRONMENTAL SERVICES, INC.
220 EAST RYAN ROAD
OAK CREEK, WISCONSIN 53154-4533
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PROJECT REFERENCE #2985-S3

FEBRUARY 1996



Kristin K. Kurzka
Staff Geologic Engineer



Randy E. Boness
Senior Scientist

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1. INTRODUCTION

Sigma Environmental Services, Inc. (Sigma) is pleased to submit the following site investigation work plan for the activities described in Sigma's December 11, 1995, *Proposal for Investigation Activities at Badger Leasing, 9601 West Greenfield Avenue, West Allis, Wisconsin*. The work plan provides a general review of site background information, presents the proposed subsurface investigation strategy, presents the sampling and analysis program to be implemented at the site, presents a general quality assurance and quality control plan to ensure that the results of the investigation meet the requirements of the WDNR, provides a site specific Health and Safety Plan (HASP), and summarizes the anticipated project schedule.

2. BACKGROUND INFORMATION

- 2.1 **Site Description.** Badger Leasing is located on the corner of West Greenfield Avenue and South 96th Street. The site address is 9601 West Greenfield Avenue, West Allis, Wisconsin [Southwest $\frac{1}{4}$ of the Southeast $\frac{1}{4}$ of Section 32, Township 7 North, Range 21 East (Figure 1)]. Based on information obtained from the USGS topographic map [Wauwatosa Quadrangle, Wisconsin 7.5 Minute Series [(Topographic), SW/4 Wauwatosa 15' Quadrangle, 1958], the elevation of the site is approximately 777 feet above mean sea level (MSL).
- 2.2 **Site History.** A preliminary site assessment was completed in September 1995, by Sigma, to determine if the subsurface had been impacted near the areas of two underground storage tanks (USTs) formerly used at the property. It was reported that the USTs were formerly used to store gasoline. The investigation results indicated that Gasoline Range Organic (GRO) constituents were present within the subsurface materials at the site. The DNR was notified on the release on October 27, 1995, and a Responsible Party (RP) letter was received in January 1996.

2.3 Physiographic Setting.

2.3.1 Regional Geology. The regional geology in the vicinity of the Badger Leasing site consists of Quaternary glacial deposits that are typically present throughout southeastern Wisconsin. The soil types consist of unstratified clay, silt, sand, gravel, and boulders.

Beneath the Quaternary glacial deposits and underlying the entire region, the typical sequence of bedrock (from oldest to youngest) consists of undifferentiated Pre-Cambrian Crystalline bedrock, Cambrian sandstones, Ordovician dolomites, sandstones, and shales, Silurian dolomite, and Devonian dolomite.

2.3.2 Regional Hydrogeology. The natural drainage within the area of investigation is developed and controlled by paved streets, catchment basins, and local storm sewer systems.

Groundwater beneath the City of West Allis is abundant with its major source of recharge contribution through precipitation. Groundwater typically occurs within two aquifer systems, the shallow aquifer system consisting of unconsolidated Quaternary glacial deposits and Silurian-age dolomite bedrock, and the deeper aquifer system consisting of water bearing sandstones. Groundwater flow in the shallow aquifer system typically flows toward nearby rivers, streams, and/or lakes. Regional groundwater flow in the deep artisan system flows from the west along flow paths generally toward Lake Michigan. Groundwater flow beneath the site is anticipated to flow toward the Menomonee River.

3. PROPOSED INVESTIGATION

3.1 Purpose and Objective. In accordance with Chapter NR 716.05 of the Wisconsin Administrative Code, a site investigation of the Badger Leasing property is required to determine the nature and extent of soil and/or groundwater impacted with petroleum hydrocarbons. The specific goals of the subsurface soil and groundwater quality investigation are:

- 1) To evaluate the hydrogeological and stratigraphic conditions or characteristics beneath the site;
- 2) To evaluate the horizontal flow conditions beneath the site;
- 3) To evaluate the horizontal and vertical extent of petroleum hydrocarbon impacts beneath the site; and
- 4) To provide, identify, and evaluate potentially applicable remedial alternatives for the site.

The following is a detailed discussion of the scope of work necessary to complete these objectives.

3.2 Scope of Work. The scope of work proposed for this project was developed in consideration of the requirements of the Wisconsin Administrative Code, Chapter NR 716, and other applicable WDNR guidelines.

3.2.1 Utility Survey. Prior to the initiation of any intrusive investigative activities, Sigma will contact the City of West Allis, and the public and private utilities to identify and locate buried utilities and clearly mark right-of-ways in the vicinity of the site. These features are to be included on the site plan map generated for the site.

3.2.2 Elevation and Location Survey. Following completion of the drilling activities proposed for the site, an elevation and location survey will be conducted for all monitoring wells and soil borings completed at the site. Monitoring well top of casing elevations will be surveyed to a vertical accuracy of ± 0.01 feet and a horizontal accuracy of 1.0 feet. Vertical elevations will be referenced to a USGS benchmark datum MSL, and horizontal locations will be referenced to the Wisconsin State Plane Coordinate System. Static water level measurements referenced to the top of casing elevation will enable Sigma to determine accurate

groundwater flow direction and hydraulic gradients beneath the site. All survey activities, as previously stated, will be performed by a professional registered land surveyor.

3.2.3 Soil Boring Installations. To determine the nature and extent of impacts to soil immediately beneath the site, Sigma will install five to seven soil borings (B-1 through B-7) strategically located near the former UST and pump island areas (Figure 2). Soil borings will be installed to a depth of approximately 20 feet below ground surface (bgs). Boring depths may be completed shallower (less than 20 feet bgs) based upon observations noted in the field.

3.2.4 Groundwater Monitoring Well Locations. Groundwater monitoring wells will be installed into the observed shallow unconsolidated water table beneath the site to determine if the abandoned underground storage tank system has impacted groundwater quality. In addition groundwater elevation data will be collected and utilized to evaluate groundwater flow. To obtain this information, a series of three shallow groundwater monitoring wells (MW-1 through MW-3) will be installed at three of the soil boring locations.

4. METHODOLOGY AND SAMPLING AND ANALYSIS PROGRAM

4.1 Soil Boring Installation and Soil Sampling Methods. Based on Sigma's understanding of the subsurface geology and hydrogeology beneath the site, it is anticipated that the soil borings will be installed to a depth of approximately 20 feet below ground surface. However, boring depths may be completed shallower (less than 20 feet) based upon observations noted in the field.

The soil borings will be installed by the contracted driller utilizing a hollow stem auger drill rig. The soil borings will be advanced through the unconsolidated material with 4¼-inch inside diameter hollow stem augers. Boreholes not

converted to monitoring wells will be abandoned in accordance with applicable Chapter NR 141, Wisconsin Administrative Code requirements. WDNR Borehole Abandonment Forms (3300-5B) will be completed to document each abandonment.

Standard split-spoon methodologies (ASTM Standard D-1586/87) will be used to collect predominantly undisturbed soil samples continuously to the termination depth. Split-spoon soil samples will be collected and the soils visually inspected and classified according to the Unified Soil Classification System (USCS). Soil sample descriptions will include details regarding the structural features of the soil, mottling, voids, layering, lenses, heterogeneities, fractures, organic matter content, and apparent geologic origin. Subsurface soil descriptions will be compiled on a WDNR Soil Boring Long Form 4400-122.

Duplicate soil samples will be collected throughout the soil sample interval. A portion of the soil sample will be containerized and preserved for potential submittal to the project laboratory, and the remaining portion of the soil sample will be placed in jars for headspace analysis. Headspace analysis, utilizing a Photoionization Detector (PID) and/or Flame ionization Detector (FID) to analyze for total ionizable Volatile Organic Compounds (VOC) vapors, will be performed according to the following procedure:

- 1) VOC screening samples will be collected and containerized in clean four-ounce jars which will be filled with soil approximately $\frac{1}{2}$ to $\frac{3}{4}$ full.
- 2) Immediately after the headspace sample is placed in the jar, the jar will be sealed with a teflon lined cap to minimize the loss of any volatile constituents present.
- 3) Once the headspace sample is sealed, the sample will be agitated for at least 30 seconds to break soil clods and release VOC vapors.

- 4) After the sample has been agitated, the sample will be allowed to equilibrate for 20 to 40 minutes at approximately 70°F, out of direct sunlight.
- 5) Following equilibration to room temperature, the headspace sample will be analyzed by inserting the tip of the PID and/or FID probe approximately halfway between the lid and the sample surface and recording the highest instrument reading.
- 6) To enhance instrument sensitivity and to provide a greater range of potential target compound detection, the PID (if utilized) will have a lamp strength of 11.7 electron volts (eV). The PID and/or FID will be properly maintained and operated according to the manufacturer's specifications. The PID will be field calibrated daily for direct response to a 100 parts per million (ppm) isobutylene standard, and the FID to a 1,000 ppm methane standard. Results of daily calibration are recorded in a calibration logbook.

The soil sample(s) indicating the highest total VOC vapor readings or the samples most visually affected, will be selected for laboratory analysis. Based upon the depth of the water table (anticipated to be approximately 20 feet bgs), two soil samples will likely be selected from the unsaturated and unsaturated/saturated soil intervals. If the water table is observed to be at ten feet bgs or less, only one soil sample will be submitted for chemical characterization.

4.2 Groundwater Monitoring Well Construction and Groundwater Sampling. Each of the proposed monitoring wells (MW-1 through MW-3) will be constructed of two-inch inside diameter PVC casing coupled to a 10 foot section of 0.010-inch factory slotted PVC well screen. Schedule-40 PVC well materials will be used in the construction of the shallow monitoring wells. The casing and screen will be field assembled from hermetically-sealed packages to ensure well integrity. The wells will be installed with the screened portion intersecting the

water table (or as specified for the piezometer) to determine groundwater quality and provide groundwater flow direction and horizontal gradient information.

All monitoring wells will be completed in accordance with Chapter NR 141, Wisconsin Administrative Code requirements. The position of the filter pack, filter pack seal, annular space seal and surface seal will be confirmed by measuring with a weighted measuring tape. Following the complete removal of the augers, each well will be protected by a locked above ground steel protective casing and/or flush mounted monitoring well vault. Monitoring Well Construction Diagrams (WDNR Form 4400-113A) will be completed for each well and presented as an appendix in the final investigation report.

Each monitoring well will be developed by the removal of 10 well volumes of water or until sediment-free water is obtained. The first round of groundwater samples will be collected a minimum of two weeks after well installation. Prior to groundwater sampling, the wells will be purged of an additional three well volumes and then appropriately sampled. All development and purge water will be containerized into 55-gallon Department of Transportation (DOT) approved drums. Development/purge water drums will be temporarily stored within the secured perimeter of the site boundary until disposal arrangements can be made.

Based on the initial sampling round, one to two consecutive quarterly sampling rounds of groundwater samples may be collected from the monitoring wells. After purging, groundwater samples will be collected by gently lowering a dedicated teflon bailer equipped with a bottom-emptying device into the well. After allowing the bailer to fill with water, the contents will be gently transferred through the bottom of the bailer into the pre-labeled and laboratory preserved sample containers.

4.3 Sampling and Analysis Program. The parameters for which the investigation samples will be analyzed, the analytical methods utilized by the project

laboratory, and the quantity of investigative and quality control samples to be obtained during the investigation are listed in Table 1 (Summary of Sampling and Analysis Program).

4.3.1 Soil Analytical Parameters. One to two soil samples for each soil boring are to be collected and analyzed for Gasoline Range Organics (GRO), Petroleum Volatile Organic Compounds (PVOCs) and total lead analysis.

4.3.2 Groundwater Analytical Parameters. Groundwater samples from the monitoring well network will be collected during two consecutive quarterly rounds and submitted for analysis of Volatile Organic Compounds (VOCs), GRO, and Soluble Lead.

The VOC and GRO samples will be preserved with hydrochloric acid to a pH less than 2.0. The vials for VOC and GRO analysis will be sealed, insuring that no headspace is present, and will be placed in a cooler with ice for transport to the laboratory.

4.4 Quality Assurance/Quality Control (QA/QC) Methods. In order for the results of the subsurface soil and groundwater quality investigation to be both valid and useful, appropriate quality assurance and quality control (QA/QC) measures will be implemented throughout the investigation. Sigma's proposed scope of services is designed and will be implemented in accordance with all appropriate QA/QC measures to ensure that the results of the investigation meet the needs of the WDNR and are consistent with the requirements under Chapter NR 716.

Other quality assurance (QA) measures include the use of specific equipment decontamination procedures before beginning the on-site drilling activities. All drilling equipment including drilling rigs, augers, rods, split-spoon samples and drill bits will be thoroughly steam cleaned prior to mobilizing to the site. Between each boring, the split-spoon will be decontaminated by steam cleaning, rinsing with tap quality water, and triple rinsing with distilled water

by the drill rig operator. Between each sampling event, the split-spoon will be washed in a hot water/alconox soap solution and rinsed with clean tap water.

During the advancement of the augers and installation of the monitoring wells, precautions will be taken not to introduce any foreign materials or contaminants into the borehole or well. Only new PVC material will be used for well construction; no solvent or epoxy-based adhesives will be used for well construction. All sample handlers and well installation personnel will wear disposable latex gloves.

An individual bailer will be assigned to each monitoring well and thoroughly decontaminated at Sigma's office before mobilizing to the site. The bailers will be decontaminated by a double wash in a hot water/alconox soap solution, triple tap water rinse, methanol rinse, triple deionized water rinse and then wrapped in aluminum foil for transport to the site.

All samples collected for laboratory analysis will be placed in appropriate laboratory supplied sample jars, properly preserved, sealed, labeled and placed in a cooler with ice for delivery to the laboratory. Sampling personnel will initiate a chain-of-custody document for all the samples and will follow appropriate chain-of-custody protocol.

All laboratory analysis will be completed by Sigma's subcontracted laboratory. Specific laboratory procedures and methods have been selected based on both the general acceptance by the WDNR and the EPA, and on the ability of the methods to meet the appropriate regulatory standards and the lowest level of detection.

In addition to the aforementioned QA measures, Sigma will also implement several quality control procedures including the preparation of a trip blank and one field blank for each day of groundwater sampling, and the preparation of one duplicate sample for every ten groundwater samples or a minimum of one duplicate sample per day. All trip blanks, field blanks and duplicate samples

will be containerized, preserved and handled in the same manner as the groundwater samples and submitted to the laboratory for the same analysis.

5. WASTE MINIMIZATION/MANAGEMENT

All soil auger spoils will be drummed in DOT approved drums or placed on, and covered with, visquene and temporarily staged on-site pending disposal. Analytical information obtained during previous site activities will be utilized to apply for possible landfill disposal permitting, if applicable. Groundwater development and purge water will be containerized on-site in 55-gallon steel DOT drums pending the results of the groundwater sampling.

6. REPORT PREPARATION

- 6.1 Remedial Investigation Report.** Following completion of the investigative activities and upon determining the nature and extent of soil and/or groundwater impacts, Sigma will prepare a draft remedial investigation (RI) report (consistent with the minimum requirements of Chapters NR 716.15 and 716.17) that summarizes the completed field activities and presents an interpretation of the existing physical and chemical subsurface site conditions. After comments are received, the document will be reviewed, and if necessary revised.

Assuming no additional investigative activities are warranted after completion of the proposed scope of work presented herein, a feasibility study (FS) will be conducted. If an FS is prepared, it will evaluate remedial action alternatives that will prevent, mitigate or otherwise remedy any release or threatened release of contaminants from the site.

Typically, remedial techniques are separated into those that are active and those that are passive. The active techniques are further subdivided into those approaches that either remediate unsaturated soil material, and those that remediate groundwater and unsaturated soil material. Potential remedial

techniques will not be fully evaluated through completion of the FS, unless the results of the RI indicate that soil impacts (and potentially groundwater impacts) are sufficiently defined, and that soil and groundwater quality (with respect to applicable State standards and/or limits) warrant implementation of a corrective action at the site.

6.1.1 Documentation. Soil boring logs will be included in the RI report for each boring completed on the site. Soil boring logs will be prepared in accordance with Chapter NR 141.23 and NR 716.15(3)(i) of the Wisconsin Administrative Codes. Each soil boring log will include soil descriptions, sampling methods, sample depths and elevations, any odors noted during the soil sampling, results of field and headspace screening, the date of the completed soil boring, land surface elevation information, bottom of boring/well elevation information, moisture content and density (in the form of blow counts). All elevations will be referenced to a USGS datum and reported in feet mean sea level (MSL).

Water levels at the time of drilling and the dates of water level measurements will be included for all soil borings converted to groundwater monitoring wells. Soil boring logs will be included as an appendix to the RI report.

In addition to the other forms to be included in the RI report, appendices will include the following applicable WDNR forms:

- WDNR Groundwater Monitoring Well Construction Form (4400-113A).
- WDNR Groundwater Monitoring Well Development Form (4400-113B).
- WDNR Soil Boring Log Information Form (4400-122).

- WDNR Well/Drill Hole/Borehole Abandonment Form (3300-5B).
- WDNR Groundwater Monitoring Well Information Form (4400-89).

Soil and groundwater samples will be accompanied by a properly completed Chain-of-Custody form (COC). This document records the transfer of custody of samples from the sampler to the project laboratory. Copies of the COC forms will accompany the analytical data as an appendix to the RI report.

6.1.2 Data Presentation. Specific data generated during the subsurface soil and groundwater quality investigation will be presented consistent with the RFP and the requirements of Chapter NR 716.15 of the Wisconsin Administrative Code. Data presentation will include:

- A site plan map showing the locations of all soil borings, monitoring wells, buried utility lines, etc.;
- A water table map, including elevations of perched water if encountered, and elevations of potentiometric surface within the piezometer locations;
- Groundwater contaminant iso-concentration maps (if applicable); and
- A geologic cross-sections showing the distribution of geologic materials, potential waste material, water levels and contaminant concentrations.

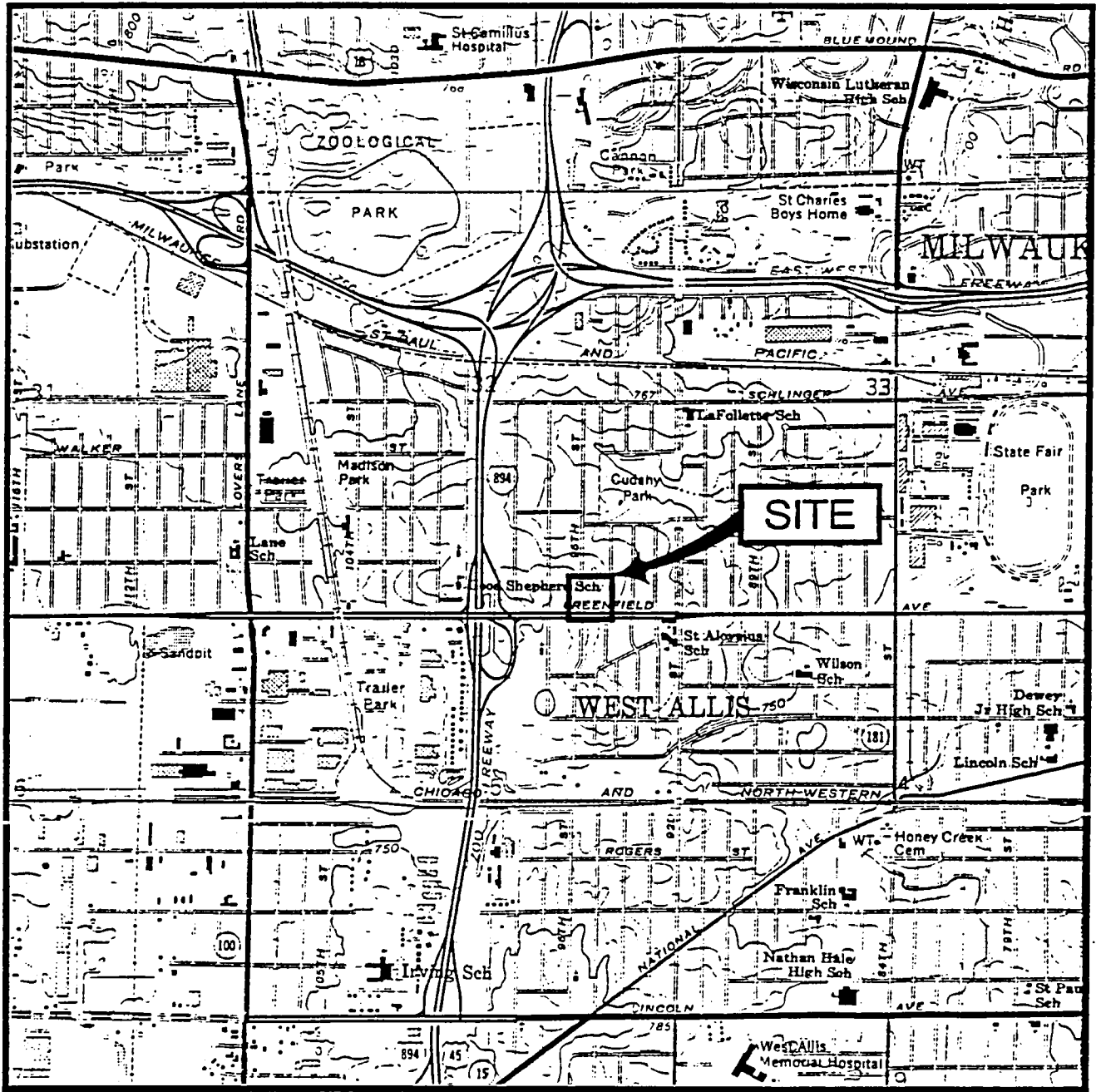
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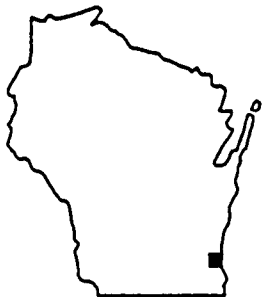
TABLE

TABLE 1 SUMMARY OF THE SAMPLING AND ANALYSIS PROGRAM Badger Leasing					
Sample Matrix	Field Measurements	Laboratory Parameters	Number of Samples	Number of QA/QC Samples	Matrix Total
Soil	PID and/or FID Screening ⁽¹⁾	VOCs	14	--	6
		GRO	14	--	12
		Total Lead	7	--	6
Groundwater	- pH - Specific Conductance - Temperature - Static Water Levels	VOCs	6	3	7
		GRO	6	0	6
		Soluble Lead	4	0	4
<p>⁽¹⁾ The PID and/or FID screening will provide qualitative information on the level of potential total VOC vapors and provide information for health and safety purposes. An anticipated two soil samples from each boring will be submitted for laboratory analysis.</p> <p>* Two soil samples will be submitted for total organic carbon and biological characterization to evaluate potential passive or very limited remedial action alternatives, if appropriate.</p> <p>VOCs = Volatile Organic Compounds GRO = Gasoline Range Organics</p>					

FIGURES




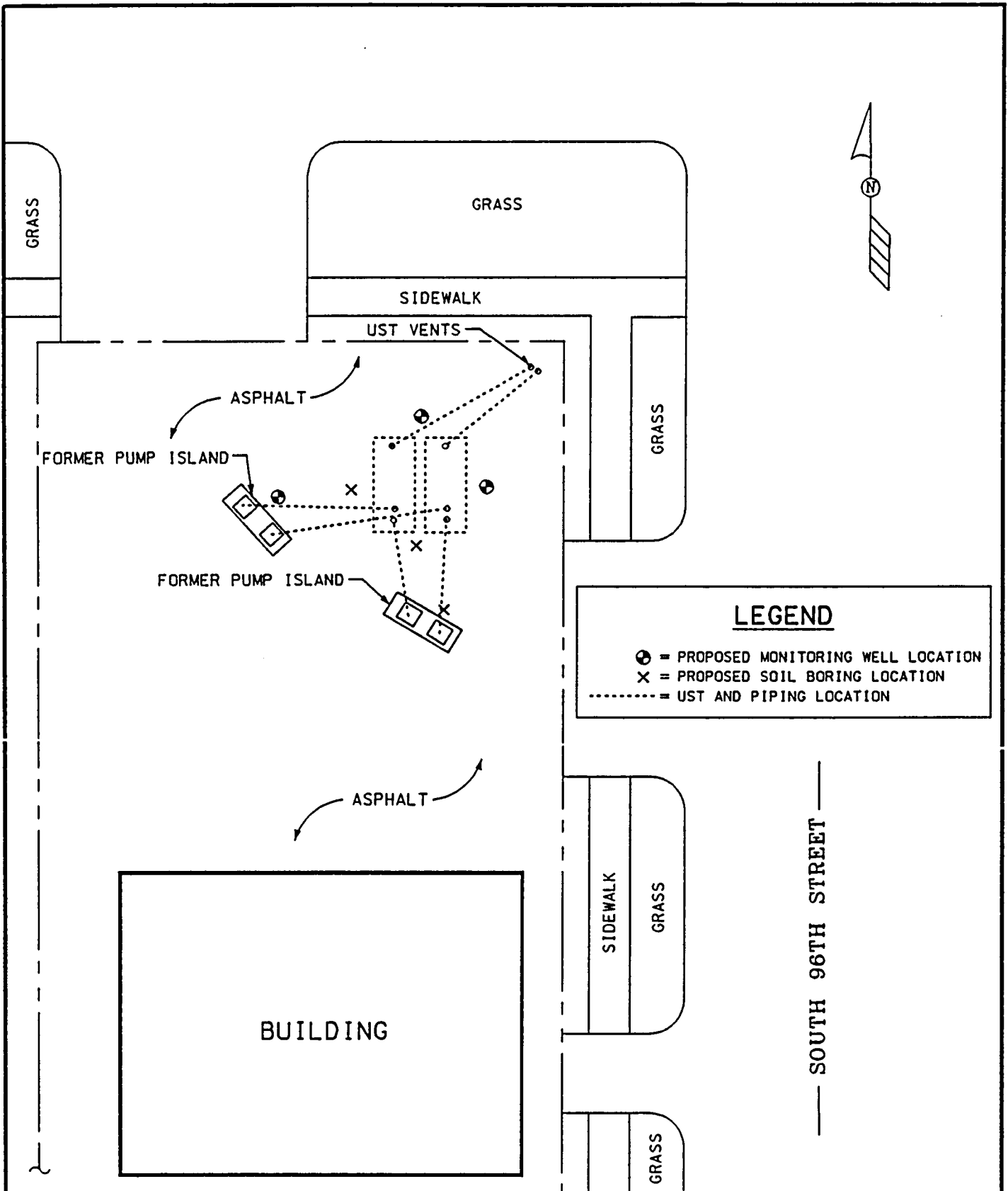
SW/4 SE/4 Sec.32 T.7N R.21E



WISCONSIN

ADAPTED FROM U.S.G.S. 7.5 MINUTE SERIES, WAUWATOSA, WISCONSIN QUADRANGLE DATED 1958 PHOTOREVISED 1971

BADGER LEASING			 SIGMA ENVIRONMENTAL SERVICES INC.
9601 W. GREENFIELD AVE., WEST ALLIS, WI			
DATE: 1-10-96	DR. BY: TMM	DR.# 2985-001	SCALE: SEE ABOVE
SITE LOCATION MAP			FIGURE 1



LEGEND

- ⊙ = PROPOSED MONITORING WELL LOCATION
- X = PROPOSED SOIL BORING LOCATION
- = UST AND PIPING LOCATION

BADGER LEASING
 9601 W. GREENFIELD AVE., WEST ALLIS, WI
 DATE: 10-12-95 | DR. BY: TMM | DR.# 2985-002

SIGMA
 ENVIRONMENTAL SERVICES INC.

SCALE: NOT TO SCALE

LOCATION MAP

FIGURE 2

APPENDIX A

SITE HEALTH AND SAFETY PLAN

7

Site Safety Plan

(UST Assessment, Non Hazardous Investigation, GW Monitoring)

GENERAL

DATES PLAN IN USE: 1996 DATES PREPARED: 01/10/96

PREPARED BY: Kristin Kurzka AREA NAME: Badger Leasing

LOCATION 9601 West Greenfield Avenue, West Allis, Wisconsin

HAZARDOUS MATERIAL FORM: GAS LIQUID SLUDGE SOLID

CONTAINMENT: DRUM PIT TANK(ABOVEGROUND) TANK(UNDERGROUND)

SOIL DEBRIS OTHER CONDITION

CHARACTERISTICS: CORROSIVE IGNITABLE VOLATILE TOXIC

SITE/AREA SPECIFICS

HIGH HAZARD MATERIAL

COMPOUND	ANTICIPATED CONCENTRATION	WARNING PROPERTIES
<u>Petroleum related hydrocarbons</u>	<u>0 to 1000's ppm</u>	<u>Strong odor, headaches</u>

HAZARD ASSESSMENT

EVALUATION OF EXPECTED HAZARD (work assignments, operational consideration, routes of exposure, health effects, material stability):

Use of heavy equipment (drill rig and support vehicles), underground and above ground utilities, note strong petroleum odors

OPERATIONAL PROCEDURES

SITE COMAND AND CONTROL (Include sketch or map as appropriate)

PERIMETER CONTROL Barracades if necessary

STAGING AREA Five to ten foot radius of drill and support equipment

EQUIPMENT REQUIREMENTS No special requirements

PERSONNEL PROTECTION

GENERAL LEVEL OF PROTECTION REQUIRED: C D

AUTHORIZED TEAM PERSONNEL

NAME	POSITION/EMPLOYER	TRAINING (type/date)
<u>Kristin Kurska</u>	<u>Staff Geologic Engineer/Sigma</u>	<u>40 Hour safety training 1995</u>
<u>Randy Boness</u>	<u>Senior Scientist/Sigma</u>	<u>40 Hour safety training 1995</u>
<u>Marty Nessman</u>	<u>Staff Hydrogeologist/Sigma</u>	<u>40 Hour safety training 1995</u>
<u>Scott Kirsop</u>	<u>Environmental Technician/Sigma</u>	<u>40 Hour safety training 1995</u>
<u>Monica Weis</u>	<u>Staff Scientist/ Sigma</u>	<u>40 Hour safety training 1995</u>

EMERGENCY PROCEDURES

HIGH HAZARD MATERIALS (known or anticipated):

NAME	ACUTE EXPOSURE SYMPTOMS	FIRST AID
Gasoline	vomiting, nausea, headache, cramping	wash with soap and water (skin), aspiration
Diesel	vomiting, nausea, headache, cramping	wash with soap and water (skin), aspiration

EMERGENCY PHONE NUMBERS

NAME	LOCATION	PHONE #
Emergency Gov't Hotline	Wisconsin	1-608-266-3232
Ambulance		911
Fire		911
Police		911
Hospital		911
Environmental	Chemtrec	1-800-424-9300
Utilities	Wisconsin Natural Gas	764-2220

ROUTE TO HOSPITAL West Greenfield Avenue east to 92nd Street, South on 92nd to Lincoln Avenue, East to West Allis Memorial Hospital

EQUIPMENT CHECKLIST (safety bag)

PROTECTIVE AND SAFETY EQUIPMENT (type, material, amount required):

- FULL FACE _____
- CARTRIDGE _____
- FACE SHIELD _____
- SAFETY GLASSES _____
- GLOVES:
 - Surgical X Chem _____
 - Outer _____
- DISPOSABLE COVERALLS _____
- BOOTS Steel toe boots
- FIRST AID EQUIPMENT potable water and soap
- FIRE EXTINGUISHER located in Sigma support vehicle
- DECON MATERIALS Alconox soap and deionized water
- HALF FACE _____
- HARD HAT required
- CHEM GOGGLES _____
- EAR PROTECTION optional
- SPLASH SUITS _____

AFTER ACTION REPORT TO: Sigma Personnel DATE: _____

PLAN APPROVED BY: *Dan E. Brown* DATE: 1-12-96

APPENDIX B
PROJECT SCHEDULE

**Schedule For
Subsurface Soil and Groundwater Quality Investigation
Badger Leasing
West Allis, Wisconsin**

Task Description	Month	January					February				March				April				
	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1) Finalize Work Plan																			
2) Bid Solicitation & Scheduling																			
3) Soil Boring/ Monitoring Well Installations																			
4) Well Development																			
5) Groundwater Sampling																			
6) Laboratory Analytical Results (Soil & Groundwater)																			
7) Data Evaluation																			
8) Final Investigation Report *																			

Footnote: * Final Investigation Report including Remedial Action Plan, if extents of impacts defined.