STATE OF WISCONSIN

CORRESPONDENCE/MEMORANDUM----------

DATE: February 2, 1990

TO: Dale Marg
Highway District #8 - Design

FROM: Julie White, Site Assessment Coordinator
Risk,Safety,and Hazardous Materials Management

Subject: ENVIRONMENTAL SITE ASSESSMENT
Property: Hedlund DX
Project I.D.# 8040-03-00

Attached are two copies of the Environmental Site Assessment for the above property.

The assessment concludes:

Soils and groundwater are contaminated.

The assessment recommends:

Phase III assessment should be instituted by the responsible parties. If you would like Risk and Safety Management to conduct Phase III, please advise.

If you have any questions about the data contained within this report or need additional information, please contact me at (608) 266-1476.

cc: Frank Smilgis; C.O.Design
DNR ✓ Tom Kendzierski
File

ENVIRONMENTAL SITE ASSESSMENT REPORT

FOR THE

HEDLUND DX

STATE HIGHWAY 70

FALUN, WISCONSIN

JANUARY 1990

PREPARED FOR THE

WISCONSIN DEPARTMENT OF TRANSPORTATION

PROJECT 8040-03-00

PREPARED BY
AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT NO. 91036

SIGNATURE PAGE

FOR THE

ENVIRONMENTAL SITE ASSESSMENT REPORT

FOR THE

HEDLUND DX

STATE HIGHWAY 70

FALUN, WISCONSIN

Prepared By _____ Date: 2/1/90

Robert A. Ehlert
Field Technician
Aqua-Tech, Inc.

Reviewed By: _____ Date: 2/1/90

Z. Vance Jackson, Jr.
Hydrogeologist
Aqua-Tech, Inc.

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1.0 SUMMARY

Aqua-Tech, Inc. has completed an environmental site assessment of the Hedlund DX Service Station underground storage tank site as contracted November 13, 1989, by the Wisconsin Department of Transportation (WDOT) Risk and Safety Management Section as part of WDOT Project 8040-03-00.

The purpose of this site assessment was to identify possible environmental contamination associated with the underground storage tanks formerly located at the site. The assessment included the following:

* Regulatory background review
* Site representative interview
* Two soil borings to a maximum depth of 13 feet
* Collection and field screening of subsurface soil samples for volatile organic compounds
* Chemical analysis of two subsurface soil samples for total petroleum hydrocarbons (TPH)
* Chemical analysis of one subsurface soil sample for E.P. Toxicity Metals
* Chemical analysis of one groundwater sample for volatile organic solvents (601/602)

The laboratory results of this investigation indicate that THE SOILS AND GROUNDWATER WITHIN THE EXISTING WDOT RIGHT-OF-WAY AND THE PROPOSED RIGHT-OF-WAY EXPANSION AT THE SITE ARE CONTAMINATED BY PETROLEUM HYDROCARBONS.

AQUA-TECH RECOMMENDS THAT ADDITIONAL INVESTIGATION BE CONDUCTED TO DETERMINE THE SOURCE AND EXTENT OF CONTAMINATION. The additional work at the site should include soil borings

which may be completed as groundwater monitoring wells if necessary.

If WDOT determines to purchase the property, it will be desirable to conclude agreements with adjacent property owners defining remedial action responsibilities prior to beginning construction. Aqua-Tech suggests that WDOT arrange concurrent remedial operations with the adjacent property owners.

2.0 SITE BACKGROUND

2.1 Introduction

This section includes information obtained from the site reconnaissance inspection, regulatory background review, and the site representative interview.

2.2 Site Location

The Hedlund DX Service Station is an abandoned vehicle service and gasoline station located on less than one acre of land in the unincorporated village of Falun, Wisconsin. It is located on the south side of State Highway 70 approximately 350 feet east from the intersection of State Highway 70 and Range Line Road in Burnett County, Wisconsin (See Figure 2-1).

2.3 Site Geology

Glaciation has been an important agent in determining the geology and physiography of the site. The site forms part of the pitted outwash left behind by the retreat of the Wisconsinan (Woodfordian) ice sheets. The site occupies what became Glacial Lake Duluth as glaciation waned.

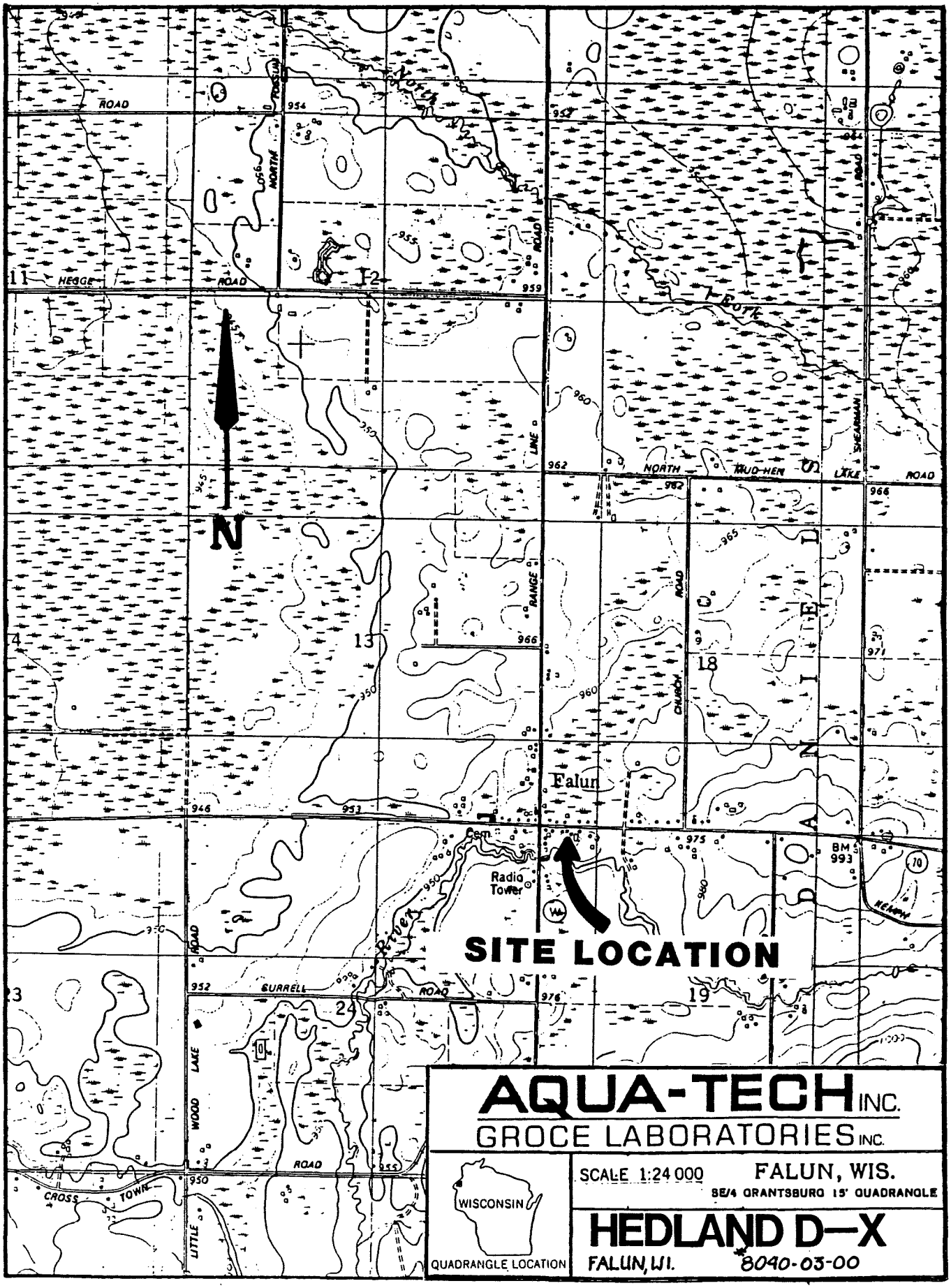
The soils encountered in the test borings consist of glacially derived medium-coarse sands and stiff gray clays.

Bedrock in the area is buried to varying depths by glacial deposits. Regionally, it consists of a series of undivided Cambrian Age sandstones with some dolomite and shale.

Surface topography at the site is flat (less than 1 percent slope) with adjacent topography sloping gently to

FIGURE 2-1

SITE LOCATION



the south toward the Wood River, approximately 400 feet from the site.

Groundwater was encountered in one test boring at a depth of 11.0 feet. No hydraulic gradient was established, however, based on the surface topography, groundwater appears to be flowing toward the south across the Hedlund DX Service Station site.

2.4 Site History

The former service station site is owned by Gerald Hedlund of Grantsburg, Wisconsin. Delores Anderson, co-owner of Andy's Bait Shop, a business adjoining the Hedlund property to the west, stated that the site was used as a service station from 1929 until approximately 1980 when the service station closed. See Appendix A for telephone records.

Two underground storage tanks were removed from the site in 1980. The tank closest to the Anderson property was observed to be leaking by the Andersons at that time. There are no petroleum tank inventory records on file with the Wisconsin Department of Industry, Labor, and Human Relations.

Prior to 1980, the Anderson's noted that their well water had a gasoline odor. After the tank was removed and the leak noted by the Andersons, they contacted the Wisconsin Department of Natural Resources (WDNR).

David Herrick, WDNR District Sanitarian reported to Mr. Otmar Anderson in a letter dated February 17, 1981 (See Appendix B) that laboratory analysis of groundwater samples

taken by the WDNR on February 3, 1981, indicated the presence of gasoline contaminants in the water. The Andersons were cautioned about the use of their water for human consumption.

The Andersons do not consume the water, but melt ice cubes from a separate source for potable water. Water from their well still has an odor of petroleum products.

2.5 Regulatory Review

The Hedlund DX site is not listed on the U.S. Environmental Protection Agency's CERCLIS inventory of potential uncontrolled hazardous waste sites. In addition, there are no regulatory response records of the site in the Wisconsin Department of Natural Resources files. These files include Wisconsin's List of Active and Abandoned Landfills, the Wisconsin Environmental Repair Fund List and the Statewide Spills and Hazardous Incident Report from January 1978 to June 1989. However, as previously noted, District WDNR files do include records of water well testing due to the Anderson's 1980 complaint.

3.0 SITE ASSESSMENT PROCEDURES AND FIELD OBSERVATIONS

3.1 Introduction

This section outlines site assessment procedures and field observations for the environmental site assessment at the Hedlund DX site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific assessment activities are also provided.

3.2 Reconnaissance Inspection

A reconnaissance inspection of the Hedlund DX site and surrounding areas was conducted on November 7, 1989 by James J. Mertes of Aqua-Tech. The reconnaissance inspection included a walk through of the site to determine appropriate sampling locations, taking into consideration the former tank bed locations, underground and overhead utilities, and site accessibility.

Reconnaissance Inspection Observations

The Hedlund DX site is located in a rural commercial district interspersed with residential housing in Falun, Wisconsin. The site is bounded to the north by State Highway 70. The boundaries to the south, west and east are surveyed property lines. The site is surrounded by adjacent business and residential properties, with the nearest business located approximately 20 feet west and the nearest residence approximately 100 feet north across State Highway 70. The adjacent property to the east, Bob's Service Station was also the object of an environmental assessment

and report as part of WDOT Project 8040-03-00.

The former underground storage tanks were located at the northeast and northwest corners of the station building. The former pump island platform is located north of the building approximately 25 feet from the existing edge of pavement of STH 70. See Appendix C for a site photorgraph.

3.3 Sampling Procedures

Samples were collected from borings at locations selected during the reconnaissance inspection to determine whether gasoline is present in the soil and/or groundwater surrounding the underground storage tank site.

On November 7, 1989, Aqua-Tech collected two subsurface soil samples and one groundwater sample within the boundaries of WDOTs proposed right-of-way acquisition. No samples were collected on the portion of the Hedlund DX property which is not being considered for right-of-way purchase. See Figure 3-1 for sampling locations.

Soil Sampling Procedures

Subsurface soil sample DX-1 was collected at the 5-to-7 foot depth interval approximately 5 feet north of the pump island.

Subsurface soil sample DX-2 was collected at the 4-to-6 foot depth interval, 40 feet west of sample DX-1 at the northwest corner of the station building.

Soil Sampling Procedures

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with hollow stem augers and two inch diameter, 24 inch split spoon sampler. The split

spoon sampler was advanced by conventional methods, including the attachment of the sampler to an AW rod and standard 140 pound hammer.

All drilling tools and equipment were washed with high-pressure steam equipment prior to the start of sampling work. All sampling tools were washed with an alconox and reagent water solution between sample points to prevent cross contamination within the boring.

A preliminary survey was conducted by screening samples with a photoionization meter immediately upon opening the split spoon sampling tube. Results from the survey were used to select the most contaminated soils from each boring for laboratory analysis. Data from the preliminary survey is recorded on the soil profile logs in Appendix D.

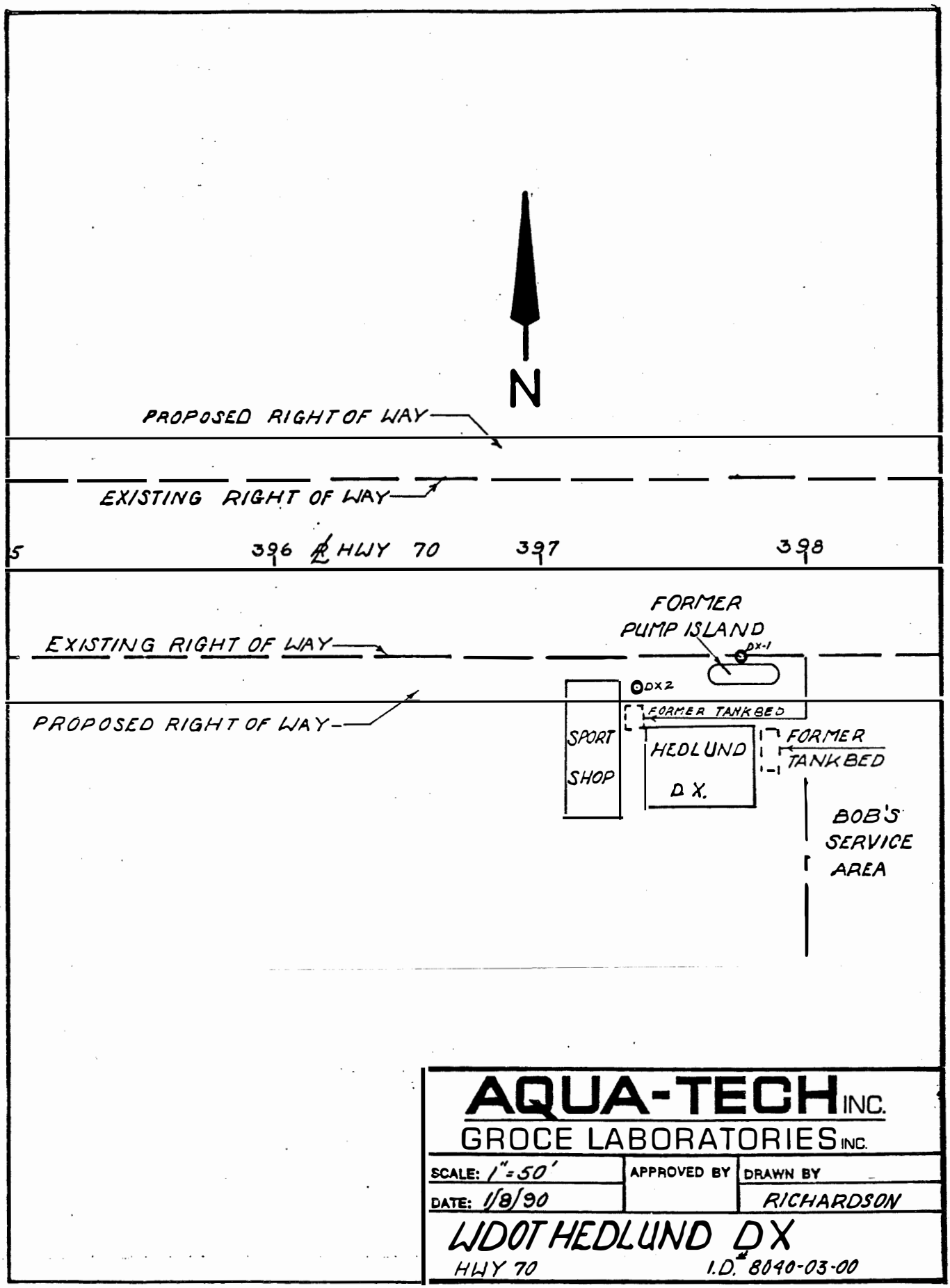
After lithologic logging (See Appendix D), the selected samples were stored in clean 4 ounce jars and cooled to 4°C for transport to the laboratory.

Upon completion of sampling, the boreholes were backfilled with bentonite mixture and surface concrete was patched where necessary.

Groundwater Sampling Procedures

Groundwater sample WDX-1 was collected to determine whether any gasoline components had migrated from the tank bed area via groundwater (See Figure 3-1). Samples were collected by inserting a clean stainless steel bailer down the hollow stem augers and transferring the contents to two 40 ml. glass vials. The vials were then sealed, taking care

FIGURE 3-1
ITE FEATURES AND SAMPLING LOCAT. NS



AQUA-TECH INC.
GROCE LABORATORIES INC.

SCALE: 1"=50'	APPROVED BY	DRAWN BY
DATE: 1/8/90		RICHARDSON

WDOT HEDLUND DX
HWY 70 I.D. 8040-03-00

to insure no air was included, and cooled to 4°C for transport to the laboratory. In addition, reagent water field and trip blanks were collected in accordance with Aqua-Tech's quality control procedures.

3.4 Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures was to ensure that the quality of the samples was maintained during their collection, transportation, storage, and analysis.

Sample identification documents were carefully prepared so that sample identification and chain of custody was maintained and sample disposition controlled. Sample identification documents included:

* Field Notebooks
* Sample Labels
* Chain of Custody Records

Each sample was labeled, physically preserved, and sealed immediately after collection. To minimize handling of sample containers, labels were filled out prior to sample collection. The sample label was completed using waterproof ink and was firmly affixed to the sample containers. The sample label provided the following information:

* Location
* Sample Number
* Date and Time of Collection

* Analysis Required

* Name of Sampler

A Chain of Custody Record (See Appendix E) was fully completed in duplicate by the Aqua-Tech sampler immediately following sample collection.

Transfer of Custody Shipment

The coolers in which the samples were packed were accompanied by the Chain of Custody Record. When transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the Chain of Custody Record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification number matched that on the Chain of Custody Record. A copy of the completed Chain of Custody Record was retained by the laboratory until analyses were completed. The record was then transferred to the site file with the analytical results.

4.0 ANALYTICAL PROCEDURES AND RESULTS

4.1 Introduction

This section includes results of chemical analysis of soil samples for total petroleum hydrocarbons (TPH) and E.P. Toxicity Metals, and of groundwater for volatile organic compounds (VOC's).

4.2 Analytical Procedures

Subsurface soil samples DX-1 and DX-2 were analyzed for total petroleum hydrocarbons (TPH) as gasoline at the NET Midwest laboratory in Rockford, Illinois by the California GC Method. Additionally, soil sample DX-2 was analyzed for E.P. Toxicity Metals by EPA Method 1310.

All water samples were analyzed for volatile organic compounds by the NET Midwest laboratory in Rockford, Illinois by EPA Methods 601 and 602.

Methodology references contain specific QC criteria associated with the particular methods. These specific requirements include calibration and QC samples and are described in detail within the methods. Daily performance tests and demonstration of precision and accuracy are required.

4.3 Results of chemical Analysis of Aqua-Tech Collected Samples

Chemical analysis of the soil samples yielded the following results.

* Subsurface sample DX-1 was contaminated at the level of 24 ug/g TPH as gasoline.

* Subsurface sample DX-2 was contaminated at the level of 56 ug/g TPH as gasoline.

* Only trace amounts of E.P. Toxic Metals were indicated in subsurface sample DX-2.

All results for TPH are calculated on a dry weight basis, as required by the Wisconsin Department of Industry, Labor and Human Relations. See Table 4-1 for complete soil sample analyses results. Appendix F contains the laboratory data reports for the samples.

Chemical analysis of groundwater samples yielded the following results.

* Groundwater sample WDX-1 was contaminated at the level of 120 ug/l as benzene, 11 ug/l as 1,2-Dichloroethane, 58 ug/l ethylbenzene, 140 ug/l as toluene, and 140 ug/l as xylene.

See Table 4-2 for groundwater sample analyses results. Appendix F contains the laboratory data reports for samples.

TABLE 4-1

HEDLAND DX SERVICE STATION

SOIL SAMPLE ANALYSIS:

E.P. TOXICITY METALS

TOTAL PETROLEUM HYDROCARBONS

DATE SAMPLED: NOVEMBER 7, 1989

Parameter	Soil Sample DX-2 4' - 6' Interval	Soil Sample DX-1 5' - 7' Interval	40 CFR Maximum Concentration
Arsenic (mg/l)	0.01	----	5.0
Barium (mg/l)	0.15	----	100.0
Cadmium (mg/l)	0.002	----	1.0
Chromium (mg/l)	0.009	----	5.0
Lead (mg/l)	0.05	----	5.0
Mercury (mg/l)	0.01	----	0.2
Selenium (mg/l)	0.01	----	1.0
Silver (mg/l)	0.001	----	5.0
Total Petroleum* Hydrocarbons** As Gasoline (ug/g)	56	24	---

* All results reported on a dry weight basis

** 10 ug/g is the maximum level of petroleum contamination allowed in soil before remediation is required by the Wisconsin Department of Industry, Labor and Human Relations.

TABLE 4-2

HEDLUND DX SERVICE STATION

GROUNDWATER ANALYSIS

DATE SAMPLED: NOVEMBER 7, 1989

Parameter	Groundwater Sample WDX-1 11.0' - 12.0' Interval
Benzene	120 ug/1
1,2-Dichloroethane	11 ug/1
Ethylbenzene	58 ug/1
Toluene	140 ug/1
Xylenes	140 ug/1

5.0 DISCUSSION OF ASSESSMENT RESULTS

5.1 Introduction

This section discusses data and information that apply to observed and potential contamination that may be attributable to the Hedlund DX site.

5.2 Soil

Field screening of soil samples indicated concentrations of volatile organic compounds in the 225 - 250 ppm range in soil samples DX-1 and DX-2. Laboratory analysis of these samples revealed TPH levels of 24 ug/g and 56 ug/g, respectively. TPH in both samples exceeds the 10 ug/g remedial action level set by the Wisconsin DILHR. E.P. Toxicity concentration levels in sample DX-2 were below the Chapter 40 CFR Maximum Concentration levels.

Based on the results of field screening and laboratory analysis of soil samples collected at the Hedlund DX site, petroleum contamination above the Wisconsin DILHR 10 ug/g action level appears to be the highest around the old tank bed at the northwest corner of the building.

Contaminated soil was identified at the surface and to a depth of 11.0 feet below ground surface. The areal extent of soil contamination has not been defined, however, Aqua-Tech believes that the contaminated soil extends beneath STH 70.

5.3 Groundwater

The groundwater table was encountered in one test boring at a depth of 11.0 feet. Laboratory analysis of

sample WDX-1 revealed a benzene level of 120 ug/l, 1,2-dichloroethane level of 11 ug/l, ethylbenzene level of 58 ug/g, toluene level of 140 ug/l, and a xylene level of 140 ug/l.

The toluene and xylene levels are above the Preventative Action Limits and benzene and 1,2-dichloroethane concentrations are above the Enforcement Standards set by Wisconsin Administrative Code NR 140.10 - Groundwater Quality Standards.

The BTEX compounds encountered are commonly associated with gasoline contamination. 1,2-dichloroethane is also included in some gasolines as a detergent additive. However, it is also present in solvents used at many service stations and may be present due to spillage of dumping of solvents.

TABLE 4-3

WISCONSIN ADMINISTRATIVE CODE

CHAPTER N.R. 140

GROUNDWATER QUALITY STANDARDS

Substance	Enforcement Standard (micrograms per liter)	Preventative Action (micrograms per liter)
Benzene	0.67	0.067
Ethylbenzene	1360	272
Toluene	343	68.6
Xylene	620	124
1,2-Dichloroethane	0.5	0.05

6.0 RECOMMENDATIONS

After completing the environmental site assessment for the Hedlund DX site, Aqua-Tech concludes that soil and groundwater within the existing and proposed WDOT right-of-way are contaminated by petroleum hydrocarbons.

Aqua-Tech recommends that additional investigation be conducted to determine the source and extent of contamination. The additional work at the site should include exploratory soil borings and the installation of groundwater monitoring wells as needed to develop a remedial action plan.

If WDOT determines to purchase the proposed right-of-way, it will be desirable to conclude agreements with adjacent property owners defining remedial action responsibilities prior to beginning construction operations. Adjacent sites evaluated as part of WDOT Project 8040-03-00 were also found to be contaminated by petroleum products, and Aqua-Tech suggests that WDOT arrange concurrent remedial operations with adjacent property owners. No cost of remedial actions can be given at this time.

APPENDIX A

AQUA-TECH, INCORPORATED
140 South Park Street, Port Washington, WI 53074

TELEPHONE LOG

REFERENCE

CONTACT	COMPANY or AGENCY	POSITION
Delores Anderson	Andy's Bait Shop	Co-owner

CONTACT ADDRESS	CONTACT PHONE NUMBER
Rt. 1 Falun	715 689 2265

EMPLOYEE	DATE	TIME
Rob Ehlert	1/4/90	11 15 AM

PROJECT NUMBER	SITE NAME and LOCATION
91036	Heoland Ox - Falun

DISCUSSION

- Owns w/ Otwan
- operated as gas station 1929 → ≈'80
- removed tanks ≈'80, tanks were leaking badly
- reported to DNR - DNR said not to drink water
- they melt ice cubes for water to drink
- haven't drunk water since 1980, water still smells

SIGNATURE

PAGE 1 OF 1

AQUA-TECH, INCORPORATED
160 South Park Street, Port Washington, WI 53074

TELEPHONE LOG

REFERENCE

CONTACT.	COMPANY or AGENCY	POSITION
Tom KENDZIERSKI	WDNR - Spooner	

CONTACT ADDRESS	CONTACT PHONE NUMBER
Spooner, WI	

EMPLOYEE	DATE	TIME
Rob Ehlert	1/4/90	11:45 AM

PROJECT NUMBER	SITE NAME and LOCATION
91036	HEDLAND DX - FALUN

DISCUSSION

The Anderson's reported a leak from a UST, well water smelled, and they wanted an investigation.

He will forward a copy of the letter/report generated by the DNR on 2/17/81.

SIGNATURE Rob Ehlert

PAGE 1 OF 1

APPENDIX B

file

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Northwest District Headquarters
Box 309
Spooner, WI 54801

Anthony S. Earl
Secretary

February 17, 1981

IN REPLY REFER TO: 3320

Mr. Otmar Anderson
Andy's Bait Shop
Rt. 1
Siren, WI 54872

Dear Mr. Anderson:

Reference is made to the samples collected recently from your water supply. The laboratory analysis showed the presence of weathered gasoline in the water based on the detection of the aromatic hydrocarbons benzene, toluene and xylene, and the lack of saturated hydrocarbons (alkanes). Apparently the alkanes are more readily lost through contact with the soil while moving through it, hence the "weathered" aspect.

I must caution you about the use of this water. The substances detected can be considered hazardous to health, and I recommend that you do not use this water for consumption. Water for drinking and cooking should be obtained from some other uncontaminated source.

It is difficult to say how long the well will be contaminated. Once a petroleum product has gotten into the groundwater it is usually there for long periods of time. Usually the source is not known, or that a problem even exists until gasoline is already in the groundwater and has shown up in someone's well. Groundwater flows very slowly through the ground, usually in the tens of feet per year. As you can see, based on these reasons the problem can persist for long periods of time, sometimes years as in the case of an undetected continous leak. Oftentime's a new well, drilled to a deeper depth that has not been contaminated with the product, is the only answer.

I have contacted Mr. Jim Conner of the Department of Industry Labor and Human Relations in Superior regarding this problem. He will be looking into the problem of unused and improperly abandoned buried gasoline tanks in your area with the local fire chief. Hopefully this approach will eliminate the source of the problem.

If you have any question's on this please feel free to contact me. My telephone number is 715 635-2101.

Sincerely,

David W. Herrick

David W. Herrick
District Sanitarian

cc: Bill Sachliben - Zoning Administrator
Burnett Co. Courthouse
Webster, WI. 54893
Jim Connor - DILHR Superior, WI (Safety & Buildings)
Kevin Kessler, Chief, Private Water Supply Section
Dair Stewart, Fire Chief, Siren Fire Department

DWH:klh

DEPARTMENT OF NATURAL RESOURCES
ATTN: PAUL PETERSON

WATER CHEMISTRY - WATER SUPPLY

FORM 3200—36 REV. 6/78

FACILITY I.D. NUMBER

WATER SYSTEM NAME: Andy's Bait Shop

COUNTY: Burnett COUNTY CODE: 07

P.O. OR MUNICIPALITY: Rt 1 Siren

COLLECTION DATE: 02/03/81 (M M D D Y Y) TIME (24 HR. CLOCK): 13:30 (H H : M M)

FIELD NO.

SAMPLE SOURCE AND ADDRESS: 2 Bottles (1 with air space, 1 without)

SEND REPORT TO:
NAME: Dept. of Natural Resources Northwest District Headquarters
ADDRESS: Box 309
CITY, STATE: Spooner, Wisconsin 54801

COLLECTED BY: DAVE HERRICK

PRIMARY STATION NUMBER: STORET ONLY

ACCOUNT NUMBER: FOR LAB USE ONLY

PUBLIC WATER SYSTEM TYPE (✓ONE)
- ☐ M COMMUNITY—MUNICIPAL
- ☐ O COMMUNITY—OTHER THAN MUNICIPAL
- ☐ N NON-COMMUNITY

IF SURFACE SOURCE (✓HERE) ☐

SAMPLE TYPE (✓ONE)
SDWA:
- ☐ D REGULAR DISTRIBUTION SAMPLE
- ☐ C CHECK SAMPLE
  DATE INITIAL SAMPLE COLLECTED __/__/__ (M M D D Y Y)

SPECIAL PURPOSE:
- ☐ W NEW WELL SAMPLE — WELL NO.
- ☒ I INVESTIGATIONS & COMPLAINTS

MAXIMUM CONTAMINANT LEVELS ARE INDICATED IN BRACKETS [ ]
ALL MCL'S ARE HEALTH LIMITS EXCEPT THOSE INDICATED BY [*] WHICH ARE AESTHETIC LIMITS.

INORGANICS

	131	TEMPERATURE (°C) FIELD	
	096	pH - FIELD	
☐	002	ALKALINITY, TOTAL (as $CaCO_3$)	mg/l
☐	022	ARSENIC (As) [50.]	µg/l
☐	023	BARIUM (Ba) [1000.]	µg/l
☐	031	CADMIUM (Cd) [10.]	µg/l
☐	032	CALCIUM (Ca)	mg/l
☐	035	CHLORIDE (Cl) [250.*]	mg/l
☐	040	CHROMIUM, TOTAL (Cr) [50.]	µg/l
☐	043	COLOR [15*]	cu
☐	044	COPPER (Cu) [1000.*]	µg/l
☐	065	FLUORIDE (F) [2.2]	mg/l
☐	139	FOAMING AGENTS (MBAS) [0.5*]	mg/l
☐	068	HARDNESS, TOTAL (as $CaCO_3$)	mg/l
☐	073	IRON (Fe) [0.3*]	mg/l
☐	074	LEAD (Pb) [50.]	µg/l
☐	076	MAGNESIUM (Mg)	mg/l
☐	079	MANGANESE (Mn) [50.*]	µg/l
☐	080	MERCURY (Hg) [2.]	µg/l
☐	085	$NO_3 + NO_2$ (as N) [10.]	mg/l
☐	097	pH - LAB	
☐	110	SELENIUM (Se) [10.]	µg/l
☐	112	SILVER (Ag) [50.]	µg/l
☐	113	SODIUM (Na)	mg/l
☐	116	SULFATE (SO_4) [250*]	mg/l
☐	138	TOTAL RESIDUE	mg/l
☐	119	TURBIDITY [1.]	NTU
☐	120	ZINC (Zn) [5000.*]	µg/l

ORGANICS

☐	064	ENDRIN [0.2]	µg/l
☐	075	LINDANE [4.]	µg/l
☐	012	METHOXYCHLOR [100.]	µg/l
☐	152	TOXAPHENE [5.]	µg/l
☐	123	2,4 - D [100.]	µg/l
☐	153	2,4,5-TP SILVEX [10.]	µg/l

RADIOACTIVITY

date 2/11/81

☐	140	GROSS ALPHA [15.]	pCi/l
☐	141	GROSS BETA	pCi/l

Weathered ≡ Primarily benzene, toluene + xylenes

- ☒ GASOLINE (LEADED?) Weathered gasoline
- ☒ GASOLINE (UNLEADED?) can't specify leaded or unl
- ☒ FUEL OIL? ~ 1 mg/l
- ☐

DATE RECEIVED AND LAB. NO. FEB 4 81050137

DATE REPORTED FEB 9'8114

S. L. INHORN, M.D., DIRECTOR
WISCONSIN STATE LABORATORY OF HYGIENE
MADISON, WISCONSIN 53706

DEPARTMENT OF NATURAL RESOURCES

WATER CHEMISTRY - WATER SUPPLY
FORM 3200-36 REV. 6/78

FACILITY I.D. NUMBER

WATER SYSTEM NAME: Other Anderson - Owner; Andy's Bait Shop - Falun

COUNTY: Burnett — COUNTY CODE: 07

P.O. OR MUNICIPALITY: Rt 1 Siren Wi

COLLECTION DATE: 01/26/81 (M M D D Y Y) — TIME (24 HR. CLOCK): 13:30 (H H : M M)

FIELD NO.

SAMPLE SOURCE AND ADDRESS

SEND REPORT TO:
NAME: Dept. of Natural Resources Northwest District Headquarters
ADDRESS: Box 309
CITY, STATE, ZIP CODE: Spooner Wisconsin 54801

COLLECTED BY: Dave Herricks

PRIMARY STATION NUMBER — STORET ONLY

ACCOUNT NUMBER — FOR LAB USE ONLY

PUBLIC WATER SYSTEM TYPE (✓ONE)
IF SURFACE SOURCE (✓HERE) ☐
☐ M COMMUNITY–MUNICIPAL
☐ O COMMUNITY–OTHER THAN MUNICIPAL
☐ N NON-COMMUNITY

SAMPLE TYPE (✓ONE)
SDWA:
☐ D REGULAR DISTRIBUTION SAMPLE
☐ C CHECK SAMPLE
DATE INITIAL SAMPLE COLLECTED __/__/__ (M M D D Y Y)

SPECIAL PURPOSE:
☐ W NEW WELL SAMPLE — WELL NO.
☒ I INVESTIGATIONS & COMPLAINTS

MAXIMUM CONTAMINANT LEVELS ARE INDICATED IN BRACKETS [ ]
ALL MCL'S ARE HEALTH LIMITS EXCEPT THOSE INDICATED BY [*] WHICH ARE AESTHETIC LIMITS.

INORGANICS

131	TEMPERATURE (°C) FIELD		
096	pH - FIELD		
☐ 002	ALKALINITY, TOTAL (as $CaCO_3$)		mg/l
☐ 022	ARSENIC (As) [50.]		µg/l
☐ 023	BARIUM (Ba) [1000.]		µg/l
☐ 031	CADMIUM (Cd) [10.]		µg/l
☐ 032	CALCIUM (Ca)		mg/l
☐ 035	CHLORIDE (Cl) [250.*]		mg/l
☐ 040	CHROMIUM, TOTAL (Cr) [50.]		µg/l
☐ 043	COLOR [15*]		cu
☐ 044	COPPER (Cu) [1000.*]		µg/l
☐ 065	FLUORIDE (F) [2.2]		mg/l
☐ 139	FOAMING AGENTS (MBAS) [0.5*]		mg/l
☐ 068	HARDNESS, TOTAL (as $CaCO_3$)		mg/l
☐ 073	IRON (Fe) [0.3*]		mg/l
☐ 074	LEAD (Pb) [50.]		µg/l
☐ 076	MAGNESIUM (Mg)		mg/l
☐ 079	MANGANESE (Mn) [50.*]		µg/l
☐ 080	MERCURY (Hg) [2.]		µg/l
☐ 085	$NO_3 + NO_2$ (as N) [10.]		mg/l
☐ 097	pH - LAB		
☐ 110	SELENIUM (Se) [10.]		µg/l
☐ 112	SILVER (Ag) [50.]		µg/l
☐ 113	SODIUM (Na)		mg/l
☐ 116	SULFATE (SO_4) [250*]		mg/l
☐ 138	TOTAL RESIDUE		mg/l
☐ 119	TURBIDITY [1.]		NTU
☐ 120	ZINC (Zn) [5000.*]		µg/l

ORGANICS

☐ 064	ENDRIN [0.2]		µg/l
☐ 075	LINDANE [4.]		µg/l
☐ 012	METHOXYCHLOR [100.]		µg/l
☐ 152	TOXAPHENE [5.]		µg/l
☐ 123	2,4-D [100.]		µg/l
☐ 153	2,4,5-TP SILVEX [10.]		µg/l

RADIOACTIVITY

☐ 140	GROSS ALPHA [15.]		pCi/l
☐ 141	GROSS BETA		pCi/l

2/6/81

Not Analyzed since Mason Jar had leaked → sent him New septa sealed bottles

☒ Gasoline
☒ Fuel Oil
☒ Gasoline Type ?
☐

DATE RECEIVED AND LAB. NO. JAN 27 81 048493

DATE REPORTED FEB 9'81 14

S. L. INHORN, M.D., DIRECTOR
WISCONSIN STATE LABORATORY OF HYGIENE
MADISON, WISCONSIN 53706

APPENDIX C

APPENDIX C

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hedland DX PAGE 1 OF 1

U.S. EPA ID: N/A

DATE: > 11/7/89

TIME: > 1:30 P.M.

DIRECTION OF PHOTOGRAPH:
> Southwest

WEATHER CONDITIONS:
> Clouds

> 45°F

PHOTOGRAPHED BY:
> Mitch Evenson

SAMPLE ID (if applicable):
> N/A

DESCRIPTION: > Hedlund DX located west of Bob's Service Station (not shown)

> Andy's Bait Shop is in the right background.

>

DATE: >

TIME: >

DIRECTION OF PHOTOGRAPH:
>

WEATHER CONDITIONS:
>

>

PHOTOGRAPHED BY:
>

SAMPLE ID (if applicable):
>

DESCRIPTION: >

>

>

APPENDIX D

AQUA-TECH, INC

140 S. PARK ST.
PORT WASHINGTON, WI 53074
TELEPHONE:
(414) 284-5746
(414) 375-0407 (MILW METRO)

SOIL PROFILE LOG

PROJECT: DOT-HEDLUND DX
LOCATION: FALUN, WI

PROJECT#: DOT-8040-03-00
ATI WO#:

BORING # 1

SURFACE ELEVATION ------

SAMPLES NO.	MOISTURE	REC	HNU LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	
	DRY		180		0.0 - 3.0' SAND & GRAVEL
				3.0	
			200		3.0 - 5.0' SAND & BLUE/GREY CLAY
				5.0	
DX-1			250		
				7.0	
			20		
				9.0	
			10		
				11.0	
					5.0 - 12.0' GREY CLAY
WDX1	WET		1	12.0	
					12.0 - 13.0' SAND
				13.0	
					TERMINATED BORING AT 13.0'

NO BEDROCK ENCOUNTERED
GROUNDWATER ENCOUNTERED AT 11.0'
SOIL SAMPLE DX-1 TAKEN AT 5.0 - 7.0'
GROUNDWATER SAMPLE WDX-1 TAKEN AT 11.0 - 13.0'
GROUNDWATER HNU LEVEL: 20 PPM

WATER LEVEL OBSERVATIONS

WHILE DRILLING ------

DEPTH TO WATER 11.0'

DEPTH TO CAVE-IN ------

GENERAL INFORMATION

START DATE: 11/7/89 COMPLETION DATE: 11/7/89

DRILLING METHOD: HOLLOW STEM AUGER; SPLIT SPOON SAMPLER; HNU

LOGGER: _____

AQUA-TECH, INC

140 S. PARK ST.
PORT WASHINGTON, WI 53074
TELEPHONE:
(414) 284-5746
(414) 375-0407 (MILW METRO)

SOIL PROFILE LOG

PROJECT: DOT-HEDLUND DX
LOCATION: FALUN, WI

PROJECT#: DOT-8040-03-00
ATI WO#:

BORING # 2 — SURFACE ELEVATION ------

SAMPLES NO.	MOISTURE	REC	HNU LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	
	MOIST				
			200	2.0	0.0 - 6.0' SAND (GASOLINE SATURATED)
				4.0	
DX-2			250	5.0	
				6.0	TERMINATED BORING AT 6.0'
					BORING ENDED DUE TO EXTENSIVE CONTAMINATION NO BEDROCK ENCOUNTERED NO GROUNDWATER ENCOUNTERED SOIL SAMPLE DX-2 COLLECTED AT 4.0 - 6.0'
				10.0	
				15.0	

WATER LEVEL OBSERVATIONS

WHILE DRILLING ------

DEPTH TO WATER ------

DEPTH TO CAVE-IN ------

GENERAL INFORMATION

START DATE: 11/7/89 COMPLETION DATE: 11/7/89

DRILLING METHOD: HOLLOW STEM AUGER; SPLIT SPOON SAMPLER; HNU

LOGGER:

APPENDIX E

AQUA-TECH, INC.
140 S. Park Street
Port Washington, WI 53074
Phone (414) 284-5746

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: DOT - HEADLAND DX

SAMPLERS: (Signature) [signature]

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH	601/602 Solvents	EP tox metals				REMARKS HNU
67908	11-7-89			V	W DX-1	2		X					water 20ppm
67909	11-7-89			Y	DX-1 5-7'	1	X						soil 250ppm
67910	11-7-89			Y	DX2	1 8 gm	X		X				soil 225ppm

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
James J. Mertz	11-7-89		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)
	11/9/89 1230	Donna Myers

Report to:
Name J. Mertz
Street Aqua-Tech
City ______ State ____ Zip ____
Phone no. ( )

Remarks

Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field File

APPENDIX F

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

11-30-89

Sample No: 67908

SAMPLE DESCRIPTION: WDX-1, Grab Water
DOT-Headland DX

Date Taken: 11-07-89

Date Received: 11-09-89 1230

VOLATILE COMPOUNDS

Acrolein	<50.	ug/L
Acrylonitrile	<50.	ug/L
Benzene	120.	ug/L
Bromodichloromethane	<5.0	ug/L
Bromoform	<5.0	ug/L
Bromomethane	<50.	ug/L
Carbon tetrachloride	<5.0	ug/L
Chlorobenzene	<5.0	ug/L
Chloroethane	<50.	ug/L
2-Chloroethyl vinyl ether	<5.0	ug/L
Chloroform	<5.0	ug/L
Chloromethane	<50.	ug/L
Dibromochloromethane	<5.0	ug/L
1,2-Dichlorobenzene	<5.0	ug/L
1,3-Dichlorobenzene	<5.0	ug/L
1,4-Dichlorobenzene	<5.0	ug/L
Dichlorodifluoromethane	<10.	ug/L
1,1-Dichloroethane	<5.0	ug/L
1,2-Dichloroethane	11.	ug/L
1,1-Dichloroethene	<5.0	ug/L
trans-1,2-Dichloroethene	<5.0	ug/L
cis-1,2-Dichloroethene	<5.0	ug/L
1,2-Dichloropropane	<5.0	ug/L
cis-1,3-Dichloropropene	<5.0	ug/L
trans-1,3-Dichloropropene	<5.0	ug/L

Toni Gartner, Manager
Rockford Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

11-30-89

Sample No: 67908

SAMPLE DESCRIPTION: WDX-1, Grab Water
DOT-Headland DX

Date Taken: 11-07-89

Date Received: 11-09-89 1230

Ethylbenzene	58.	ug/L
Methylene chloride	<25.	ug/L
1,1,2,2-Tetrachloroethane	<5.0	ug/L
Tetrachloroethene	<5.0	ug/L
Toluene	140.	ug/L
1,1,1-Trichloroethane	<5.0	ug/L
1,1,2-Trichloroethane	<5.0	ug/L
Trichloroethene	<5.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<50.	ug/L
Xylenes	140.	ug/L

Toni Gartner, Manager
Rockford Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

12-01-89

Sample No: 67909

SAMPLE DESCRIPTION: DX-1 5-7', Grab Soil
DOT-Headland DX

Date Taken: 11-07-89

Date Received: 11-09-89 1230

Tot.Pet.Hydrocarbons (GC)	24. (as gasoline)	ug/g

Tom Gartner, Manager
Rockford Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

12-01-89

Sample No: 67910

SAMPLE DESCRIPTION: DX-2, Grab Soil
DOT-Headland DX

Date Taken: 11-07-89

Date Received: 11-09-89 1230

EP Tox - Arsenic	<0.01	mg/L
EP Tox - Barium	0.15	mg/L
EP Tox - Cadmium	0.002	mg/L
EP Tox - Chromium	0.009	mg/L
EP Tox - Lead	0.05	mg/L
EP Tox - Mercury	<0.01	mg/L
EP Tox - Selenium	<0.01	mg/L
EP Tox - Silver	<0.001	mg/L
Tot.Pet.Hydrocarbons (GC)	56. (as gasoline)	ug/g

Toni Gartner, Manager
Rockford Division