PHASE II1/2

ENVIRONMENTAL ASSESSMENT

FOR THE

McGLYNN PROPERTY SITE

STATE HIGHWAY 80



TOWN OF HENRIETTA

RICHLAND COUNTY, WISCONSIN

MARCH 1992

PREPARED FOR THE
WISCONSIN DEPARTMENT OF TRANSPORTATION
PROJECT 5042-02-00

PREPARED BY
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UNINCORPORATED VILLAGE OF HUB CITY

TOWN OF HENRIETTA

RICHLAND COUNTY, WISCONSIN

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ABBREVIATIONS

AESI Advent Environmental Services, Inc.

BTEX benzene, toluene, ethylbenzene, and xylenes

DRO diesel range organic
GRO gasoline range organic

PAH polynuclear aromatic hydrocarbon

PID photoionization detector

ppb parts per billion ppm parts per million

PVOC petroleum volatile organic compound

QC quality control

TPH total petroleum hydrocarbon
UST underground storage tank
VOC volatile organic compound

WDILHR Wisconsin Department of Industry, Labor and

Human Relations

WDOT Wisconsin Department of Transportation

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1.0 SUMMARY

Advent Environmental Services, Inc. (AESI) has completed a Phase II½ Environmental Assessment for the McGlynn Propertysite located on State Highway (STH) 80, in the unincorporated village of Hub City, Richland County, Wisconsin. This assessment was conducted on December 10-13, 1991, for the Wisconsin Department of Transportation (WDOT), Office of Environmental Analysis under Project I.D. 5042-02-00.

AESI purchased the rights to this project from Aqua-Tech, Inc., on August 12, 1991. For the purposes of this report, work performed prior to this date will be referenced to Aqua-Tech, Inc., and work performed after this date, including any recommendations, will be referenced to AESI.

The purpose of this assessment was to define the horizontal and vertical extent of environmental contamination that had been previously identified within the existing WDOT right-of-way at the site. Previous investigations by Aqua-Tech, Inc. included a Phase II Environmental Assessment conducted on June 8, 1990. Construction is scheduled for 1993 and will include curb and gutter work and the installation of storm sewer lines. The assessment included the following:

- Regulatory background review
- Reconnaissance inspection
- Six soil borings to a maximum depth of 9.0 feet
- Installation of three groundwater monitoring wells

- Field screening of subsurface soil samples for volatile organic compounds (VOCs) with a photoionization detector (PID)
- Collection of six subsurface soil samples
- Chemical analyses of six subsurface soil samples for gasoline range organics (GROs), diesel range organics (DROs), polynuclear aromatic hydrocarbons (PAHs), VOCs, and total lead
- Collection of six groundwater samples
- Chemical analyses of six groundwater samples for GROs, DROs,
 PAHs, VOCs, and total lead

Results of this assessment indicate that soils in the areas surrounding soil borings M-2 and M-3 had detectable levels of phenanthrene (51.0 to 82.0 parts per billion [ppb]). There are currently no established enforcement standards for phenanthrene. Field screening of soil samples from borings M-1 through M-6 did not suggest VOCs at levels above background levels. Laboratory analysis of soil samples MS-1 through MS-6 did not detect GROs or DROs at levels above the 10 parts per million (ppm) Wisconsin Department of Industry, Labor and Human Relations (WDILHR) remedial action guideline for petroleum-contaminated soil. Chemical analysis of the six soil samples did not detect the presence of VOCs or PAHs, except for phenanthrene as noted above. Total lead levels of 3.31 to 15.9 ppm were identified in the soil samples. Previous analytical results indicated soil contamination in soil boring B-1, which is located on the McGlynn Property, and in

soil boring B-2, which is located within the WDOT right-of-way. TPH as gasoline (53 ppm) and as diesel (75 ppm) was identified in soil sample SB-1. TPH as gasoline (59 ppm) and as diesel (14 ppm) was identified in soil sample SB-2.

Groundwater was encountered in all of the test borings at the site at depths ranging from 5.0 to 7.3 feet. Naphthalene was identified by laboratory analysis at a level of 0.28 ppb in groundwater sample MGW-2. This level is below the proposed Preventive Action Limit of 8.0 ppb. The origin of the naphthalene in groundwater sample MGW-2 is unclear. It is uncertain whether this is related to the contamination at the Anderson Property site, which is approximately 250 feet northwest, or is associated with the tanks of the McGlynn Property. Laboratory analysis of groundwater samples MGW-1 through MGW-6 did not detect GROs, DROs, VOCs, total lead, or any additional PAH compounds. Based on the analytical results, groundwater does not appear to be significantly impacted within the proposed construction zone. Previous analytical results indicated groundwater contamination in soil boring B-1 on the McGlynn Property. TPH as diesel (23,100 ppb), benzene (1,184 ppb), toluene (570 ppb), ethylbenzene (210 ppb), and xylenes (3,420 ppb) were identified in groundwater samples WB-1(A) and WB-1(B). subsequent analytical results suggest that only a minor level of PAH contamination extends into the WDOT right-of-way.

AESI recommends that the contamination previously identified near the edge of the WDOT right-of-way be remediated in conjunction with possible remediation

activities at the adjacent private property. The assessment results indicate that the zone of proposed construction may be impacted by the soil contamination previously identified at the McGlynn Property site. This is based on the low levels of phenathrene identified in soil borings M-2 and M-3. The WDOT contractors should be aware of the possibility of encountering contamination during the construction and trenching activities and that they should monitor the area for any visual or olfactory indications of contamination. If contamination is encountered, AESI personnel should be present on-site to monitor the construction activities. Any contaminated soil encountered at this time could be stockpiled on-site and analyzed for disposal parameters. Construction activities for the storm sewer may encounter the water table as the result of its seasonal fluctuation.

Based on the analytical results and the proposed construction plans, contaminated soil or groundwater should not delay the proposed construction. If remedial activities have not proceeded on the private property by the time of construction, an impermeable barrier, such as several layers of visqueen, should be placed along the edge of the construction zone to isolate the previously identified contamination from the new State Highway 80 roadway. The WDOT should also consider the use of an impermeable backfill material in the storm sewer trenches to prevent the trenches from acting as conduits for the spread of any migrating contamination. Upon completion of remedial activities at the McGlynn Property site,

the groundwater monitoring wells should be abandoned according to procedures outlined in Wisconsin Administrative Code-Chapter NR 141.25.

2.0 SITE DESCRIPTION

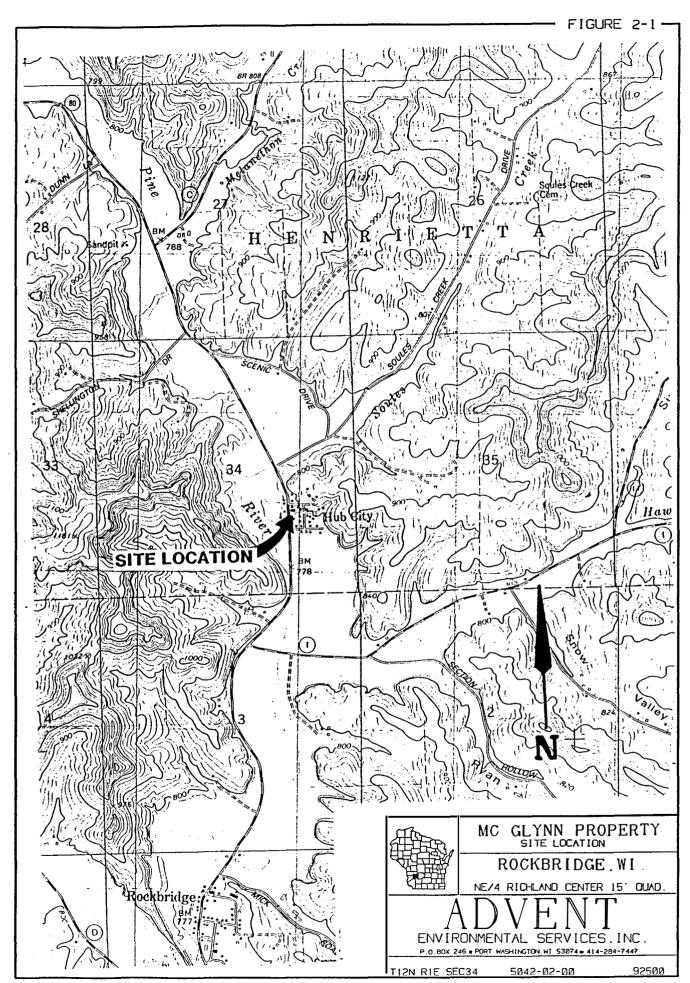
2.1 Introduction

This section describes the location of the site and summarizes the activities and results of previous environmental investigations at the site.

2.2 Summary of Previous Investigation

Aqua-Tech, Inc. was contracted by the WDOT to conduct a Phase II Environmental Assessment for the McGlynn Property site to identify the potential for soil and/or groundwater contamination associated with two underground storage tanks (USTs) at the site (see Figure 2-1). The initial Phase II Environmental Assessment conducted on June 8, 1990, included the following:

- Regulatory background review
- * Site representative interview
- * Site reconnaissance inspection
- * Two soil borings to a maximum depth of 13.0 feet
- Collection and field screening of subsurface soil samples for
 VOCs
- Chemical analysis of two subsurface soil samples for total petroleum hydrocarbon (TPH) as gasoline and as diesel fuel
- Chemical analysis of one groundwater sample for benzene,
 toluene, ethylbenzene, and xylenes (BTEX)



Laboratory analysis for the assessment indicated that soils surrounding borings B-1 and B-2 are contaminated by TPH as gasoline and as diesel at levels above the 10 μ g/g (ppm) WDILHR remedial action guideline for petroleum contaminated soil. The contamination was present on the McGlynn Property (boring B-1) and on the edge of the existing right-of-way (boring B-2). TPH levels of 75 ppm as diesel and 53 ppm as gasoline were identified in soil sample SB-1. TPH levels of 14 ppm as diesel and 59 ppm as gasoline were identified in soil sample SB-2. Laboratory analysis of one groundwater sample WB-1 indicated TPH as diesel (23,100 ppb) and benzene (1,184 ppb), toluene (570 ppb), ethylbenzene (210 ppb), and xylenes (3,420 ppb). These levels exceed the Groundwater Quality Standards in Wiscosnin Administrative Code-Chapter NR 140.10.

Aqua-Tech, Inc. recommended additional investigation to determine the extent of soil and groundwater contamination within the existing WDOT right-of-way.

3.0 BACKGROUND REVIEW

3.1 Introduction

This section includes information obtained from the regulatory background review.

3.2 Regulatory Background Review

A regulatory review of the McGlynn Property site was conducted to ensure that the site and/or surrounding areas have not been identified as causing or having the potential to cause environmental pollution. Records of solid and liquid waste disposal, spills, and leaks are an indication of whether hazardous materials have been introduced to the subsurface. The following sources were referenced during this review:

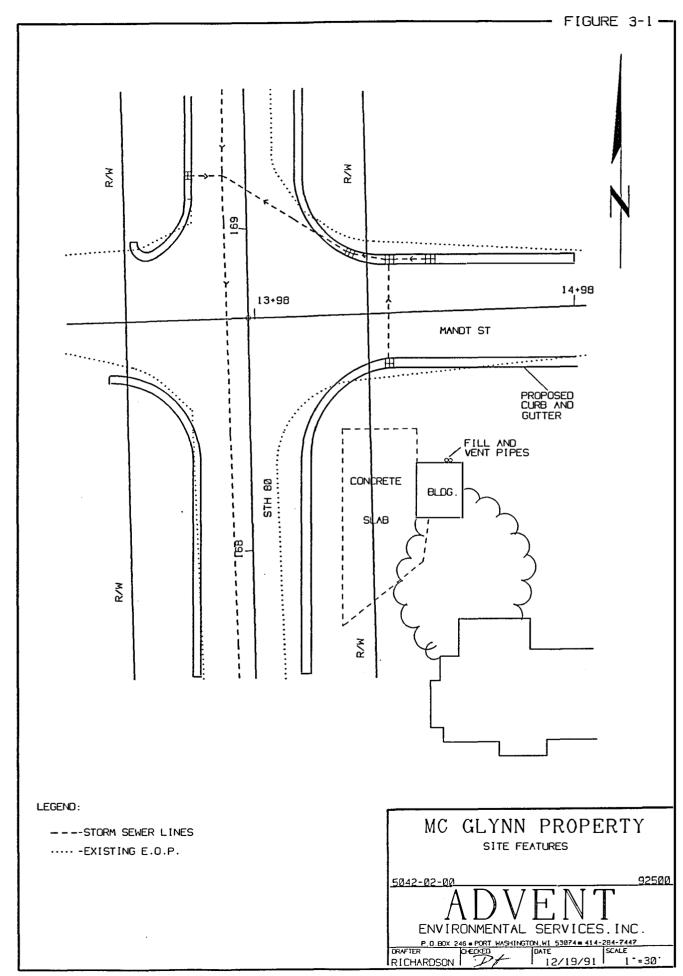
- U.S. Environmental Protection Agency (U.S. EPA) Comprehensive Environmental Response, Compensation, and
 Liability Information System (CERCLIS) List (June 1991)
- U.S. EPA Facility Index System: Selected Facilities Report
 List (FINDS) (June 1991)
- U.S. EPA National Priorities List (NPL) (February 1991)
- Wisconsin Department of Natural Resources (WDNR) Registry of Waste Disposal Sites in Wisconsin (February 1990)

- WDNR Inventory of Sites or Facilities Which May Cause or Threaten to Cause Environmental Pollution (Environmental Repair Program) (July 1987)
- WDNR Statewide Spills and Hazardous Incident Report List (January 1978 to December 1989)
- WDNR List of Leaking Underground Storage Tanks (LUST List) (December 1991)
- Wisconsin Department of Industry, Labor and Human Relations (WDILHR) Computer Inventory of Underground Petroleum Storage Tanks

The McGlynn Property site appears on the LUST list. There is one additional site within a one-mile radius of this site in Richland County that may cause or threaten to cause environmental pollution to the site. This site is the Anderson Property (AESI Project No. 92834), which is approximately 250 feet northwest of the site. Aqua-Tech, Inc., conducted a Phase II Environmental Assessment of the Anderson Property site on June 8, 1990, and AESI conducted a Phase II 1/2 Environmental Assessment of the Anderson Property site December 9 -13, 1991. A listing of this site is included in Appendix B. There are no USTs on record for the McGlynn Property site in the WDILHR computer inventory.

Figure 3-1 depicts the site features at the McGlynn Property site.

See Appendix C for photographs of the site.



4.0 SAMPLING AND ANALYTICAL PROCEDURES

4.1 Introduction

This section outlines procedures followed for collecting soil and groundwatersamples, maintaining security and integrity of the samples, and performing chemical analyses of the samples.

4.2 Sampling Procedures

Soil and groundwater samples were collected to determine if soil and groundwater at the site were contaminated.

Soil Sampling Procedures

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with a hollow stem auger and a two-inch diameter, 24-inch split spoon sampler. The split spoon sampler was advanced at two foot intervals by conventional methods, including the attachment of the sampler to an AW rod and standard 140 pound hammer.

All drilling tools and equipment were high-pressure steam cleaned prior to the start of the sampling work. All sampling tools were also washed with an Alconox™ and reagent water solution between sampling points to prevent cross contamination.

Subsurface soil samples were screened for VOCs with a calibrated HNU Model PI-101 PID immediately after the split spoon sampling tube was opened. Instrument readings (benzene equivalent ppm) and sample

descriptions/remarks were recorded on a soil profile log at the appropriate depth intervals. Results from this screening survey were used to aid in the selection of samples for laboratory analysis.

The following headspace methodologies were used for PID field screening of soil samples:

- Headspace samples were collected in clean four-ounce glass
 jars.
- 2. The jars were filled half full.
- Immediately after the headspace samples were placed in the jars, the mouths of the jars were covered with heavy gauge aluminum foil.
- Once the headspace samples were sealed, the samples were agitated for at least 30 seconds to break soil clods and release vapors.
- After the sample had been agitated, the sample was allowed to equilibrate for 20 minutes at approximately 70°F out of direct sunlight.
- 6. Following equilibration, the headspace samples were analyzed by inserting the tip of the PID probe through a single, small hole in the foil seal to a position half-way between the

seal and sample surface and then recording the highest instrumental reading.

7. The PID was properly maintained and calibrated according to the manufacturer's specifications at the site at least daily before commencing field operations. Results of the calibration were recorded on a calibration log sheet (see Appendix D).

The second sample from each sampling location was a split sample collected at the same depth interval and time as that of the headspace sample.

After pedologic logging, samples selected for chemical analyses were tightly packed into clean, Teflon™-lidded, four-ounce jars and cooled to 4°C for transport to the laboratory.

Groundwater Sampling Procedures

Groundwatersamples were collected from soil borings M-2, M-3, and M-4 by inserting a clean disposable polyethylene bailer through 2-inch diameter PVC piping that was inserted down the hollow stem augers. The temporary groundwater monitoring wells were purged of three well volumes through a 0.010-inch PVC screen prior to sampling. The contents of the bailer were then transferred to the appropriate containers. Groundwater samples were collected from soil borings M-1, M-5, and M-6 by inserting a

clean disposable polyethylene bailer through 2-inch diameter PVC piping in the groundwater monitoring wells. The groundwater monitoring well was developed and sampled according to Wisconsin Administrative Code-Chapter NR 141. The contents of the bailer were then transferred to the appropriate containers. The contents were transferred into 40 ml glass vials containing hydrochloric acid (HCl) as a preservative to be tested for VOCs and GROs. Care was taken to ensure no air space was included. The contents were transferred into a one liter amber bottle to be tested for DROs and PAHs. The contents were transferred into a 250 ml polyethylene bottle, filtered, and preserved with nitric acid (HNO₃) to be tested for total lead. The water sample containers were then sealed and cooled to 4°C for transport to the laboratory.

4.3 Procedures for Abandoning a Borehole

After all necessary soil and groundwater samples were collected at a given borehole, the borehole was backfilled with bentonite and abandoned according to procedures outlined in Wisconsin Administrative Code-Chapter NR 141.25. Because previous investigations identified contamination at the site, the cuttings were stockpiled and the wash/purge water was containerized in U.S. Department of Transportation-approved containers, while awaiting approval for disposal at a WDNR-approved facility. Two 30-gallon drums and two 55-gallon drums of wash/purge water and the stockpiled soil

were stored on the east side of the on-site building. Boring abandonment documentation is included in Appendix E.

4.4 Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures is to ensure security and integrity of the samples from collection through transportation, storage, and analysis.

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

- Field Notebooks
- Sample Labels
- Chain of Custody Records

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

- Sample Number
- Location
- Date and Time of Collection

- Analysis Required
- Name of Sampler

A chain of custody record was fully completed in triplicate by the AESI sampler immediately following sample collection (see Appendix F).

Transfer of Custody Shipment

The samples and chain of custody record were packed in a cooler. When transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the chain of custody record. This record documented sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification numbers matched those on the chain of custody record. A copy of the 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.

5.0 FIELD AND ANALYTICAL RESULTS

5.1 Introduction

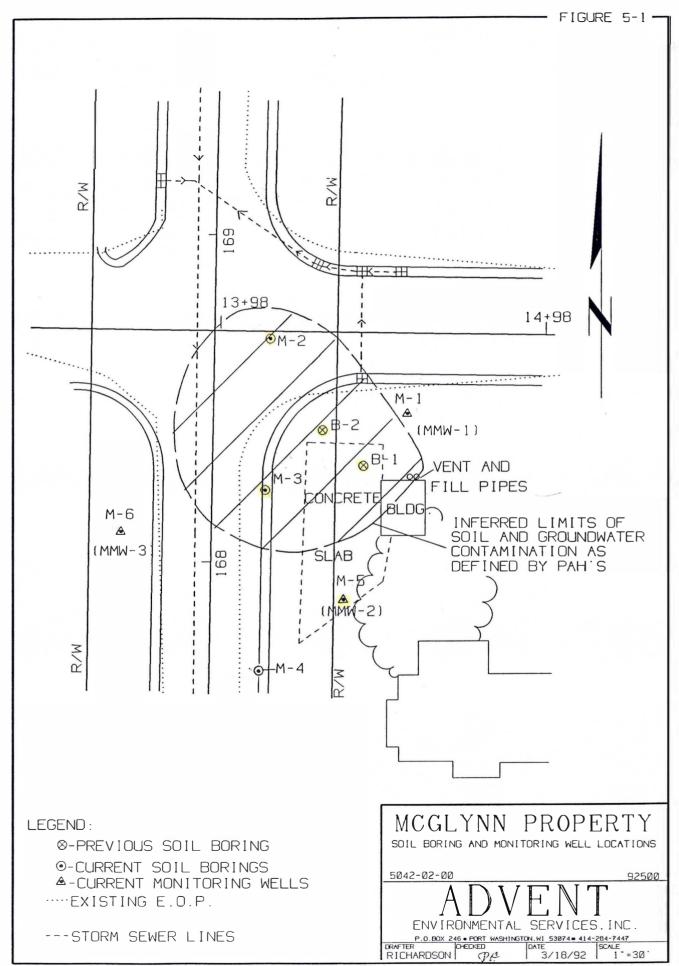
This section summarizes results of screening soil and groundwater samples in the field for VOCs and chemical analyses of soil and groundwater samples for GROs, DROs, PAHs, VOCs, and total lead.

5.2 Sample Locations

On December 10-13, 1991, Dena M. Hargraves of AESI collected six subsurface soil samples and six groundwater samples from borings and monitoring wells completed at the McGlynn Property site. See Figure 5-1 for soil boring and monitoring well locations.

The borings completed at this site are referenced to the following STH 80 centerline survey station locations:

Boring	Sample Location	Offset (feet)
M-1 (MMW-1)	168 + 45	Right 60
M-2	168 + 70	Right 17
M-3	168 + 22	Right 17
M-4	167 + 67	Right 15
M-5 (MMW-2)	167 + 87	Right 41
M-6 (MMW-3)	168 + 09	Left 27



The borings were completed to determine the extent of soil and groundwater contamination at the site and to determine if this zone would affect the proposed construction plans for State Highway 80.

Subsurface soil samples MS-1, MS-3, MS-4, MS-5, and MS-6 were collected from soil borings M-1, M-3, M-4, M-5, and M-6, respectively, from the 3.0 to 5.0 foot depth interval. Subsurface soil sample MS-2 was collected from soil boring M-2 from the 5.0 to 7.0 foot depth interval. All soil samples were collected directly above the groundwater interface.

Groundwater samples were collected at the following depths:

MGW-1 (7.3 feet), MGW-2 (7.0 feet), MGW-3 (6.0 feet), MGW-4 (5.0 feet),

MGW-5 (6.0 feet), and MGW-6 (5.0 feet). The groundwater samples were

collected and analyzed for GROs, DROs, VOCs, PAHs, and total lead

identification.

5.3 Results of Field Screening

A summary of the results of field screening subsurface soil samples for VOCs with a PID is as follows:

- Subsurface soil samples from borings M-4, M-5, and M-6 yielded no PID response.
- Subsurface soil samples from borings M-1, M-2, and M-3
 yielded PID readings ranging from 0 to 2 ppm.

All PID readings relative to depth for each boring completed at the McGlynn Property site are recorded on soil profile logs (see Appendix E).

5.4 Analytical Methods Utilized for Chemical Analyses of Samples

Davy Laboratories in La Crosse, Wisconsin, analyzed the soil and groundwater samples collected at the McGlynn Property site. Soil and groundwater samples were chemically analyzed using the analytical methods listed in Appendix F.

Each analytical method follows specific quality control (QC) criteria listed in the reference manual describing the method. This includes the selection and calibration of appropriate instruments and the use of QC samples. Daily performance tests and the demonstration of precision and accuracy in the laboratory are required.

5.5 Results of Chemical Analyses of Samples

Soil Samples

Chemical analyses of six soil samples yielded the following results:

- * No GROs or DROs were identified in soil samples MS-1, MS-2, MS-3, MS-4, MS-5, and MS-6. All results were calculated on a dry weight basis as required by WDILHR.
- * No VOCs were identified in soil samples MS-1, MS-2, MS-3, MS-4, MS-5, and MS-6.

- Total lead levels ranging from 3.31 to 15.9 ppm were identified in the six soil samples. These levels do not pose a significant environmental threat.
- * Phenanthrene was identified in soil samples MS-2 and MS-3 at levels of 51.0 ppb and 82.0 ppb, respectively. No other PAHs were identified in the six soil samples.

Table 5-1 contains complete results of the chemical analyses of the soil samples. Original laboratory data are provided in Appendix F. Previous analytical data indicated contamination in soil boring B-1, located on the McGlynn Property, and in soil boring B-2, located on the edge of the existing WDOT right-of-way. Chemical analyses of these soil samples yielded the following results:

- * TPH as gasoline was identified in soil samples SB-1 and SB-2 at levels of 53 ppm and 59 ppm, respectively.
- * TPH as diesel was identified in soil samples SB-1 and SB-2 at levels of 75 ppm and 14 ppm, respectively.

Groundwater Samples

Chemical analyses of the six groundwater samples yielded the following results:

* No GROs, DROs, total lead, or VOCs were identified in the six groundwater samples.

* Naphthalene was identified in groundwater sample MGW-2 at a level of 0.28 ppb. No other PAHs were identified in the six groundwater samples.

Table 5-2 contains complete results of the chemical analyses of the groundwater samples. Original laboratory data are provided in Appendix F.

Previous analytical data indicated groundwater contamination in boring B-1.

No groundwater sample was collected from boring B-2. Chemical analyses of the groundwater sample yielded the following results:

* TPH as diesel (23,100 ppb), benzene (1,184 ppb), toluene (570 ppb), ethylbenzene (210 ppb), and xylenes (3,420 ppb) were identified in groundwater sample WB-1(A) and WB-1(B).

TABLE 5-1

RESULTS OF CHEMICAL ANALYSES OF SOIL SAMPLES

McGLYNN PROPERTY SITE

DATES SAMPLED: DECEMBER 10-11, 1991 DATES ANALYZED: JANUARY 6-9, 1992

PARAMETER		SAMPLE NUMBER					LABORATORY DETECTION LIMIT
	MS-1	MS-2	MS-3	MS-4	MS-5	MS-6	
Depth Interval (feet)	3.0-5.0	5.0-7.0	3.0-5.0	3.0-5.0	3.0-5.0	3.0-5.0	
Total Solids (%)	81.1	86.2	89.7	88.3	87.5	89.4	
GROs*† (ppm)	ND	ND	ND	ND	ND	ND	1.0
DROs*† (ppm)	ND	ND	ND	ND	ND	ND	1.0
Total Lead * (ppm)	8.01	5.34	15.9	4.76	3.31	5.31	_
VOCs ¹ (ppm)	ND	ND	ND	ND	ND	ND	
PAHs ¹ (ppb)	ND	ND	ND	ND	ND	ND	_
Phenanthrene (ppb)	ND	51.0	82.0	ND	ND	ND	2.0

ND Not Detected ppm parts per million ppb parts per billion

^{*} All results calculated on a dry weight basis.

[†] Ten ppm is the maximum level of petroleum contamination allowed in soil before remediation is required by WDILHR.

A complete list of VOCs and PAHs analyzed for are included in Appendix E.

TABLE 5-2

RESULTS OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES

McGLYNN PROPERTY SITE

DATES SAMPLED: DECEMBER 11-13, 1991

DATES ANALYZED: DECEMBER 27, 1991 - JANUARY 3, 1992

	GROs (ppm)	DROs (ppm)	Total Lead (ppm)	VOCs ¹ (ppb)	PAHs ¹ (ppb)	Naphthalene (ppb)
Sample MGW-1	ND	ND	<0.051	ND	ND	ND
Sample MGW-2	ND	ND	<0.051	ND	ND	0.28
Sample MGW-3	ND	ND	<0.051	ND	ND	ND
Sample MGW-4	ND	ND	<0.051	ND	ND	ND
Sample MGW-5	ND	ND	<0.051	ND	ND	ND
Sample MGW-6	ND	ND	<0.051	ND	ND	ND
Laboratory Detection Limit	0.0342	0.5				0.2
Preventive Action Limit (ppb)			5			8 (proposed)
Enforcement Standard (ppb)			50			40 (proposed)

ND Not Detected

ppm parts per million

ppb parts per billion

A complete list of VOCs and PAHs analyzed for is provided in Appendix E.

6.0 DISCUSSION OF ASSESSMENT RESULTS

6.1 Introduction

This section discusses field observations and analytical data pertaining to observed or potential contamination that may be attributed to the McGlynn Property site.

6.2 Site History, Regulatory Review, and Reconnaissance Inspection

The site history revealed that possibly two USTs remain at the site, which was formerly a service station. The tanks' age, size, and contents are uncertain; however, it appears that they may have contained regular and ethyl gasoline. The site appears on the WDNR LUST list.

The regulatory review identified one site, the Anderson Property (AESI Project No. 92834), within a one-mile radius of the McGlynn Property site that could environmentally impact the site in an adverse manner. It is uncertain whether this site has affected the project area.

6.3 Soil

Field screening of split spoon samples from borings M-1 through M-6 with a PID failed to detect the presence of VOCs at levels above 2 ppm for the site.

No GROs or DROs were identified by laboratory analyses of the six subsurface soil samples at levels above the 10 ppm WDILHR remedial action guideline for petroleum-contaminated soil.

No VOCs were identified by laboratory analyses of the six subsurface soil samples at levels above the respective laboratory detection limits.

Total lead levels ranging from 3.31 to 15.9 ppm were identified in the six soil samples; however, these levels do not pose a significant environmental threat.

Phenanthrene was identified by laboratory analysis in soil samples MS-2 and MS-3 at levels of 51.0 ppb and 82.0 ppb, respectively. No other PAH compounds were identified in the six soil samples. There are currently no established PAH standards for soil.

The assessment results suggest that the zone of proposed construction may be impacted by the soil contamination previously identified at the McGlynn Property site. This is based on the low levels of phenanthrene identified in soil borings M-2 and M-3 (see Figure 5-1).

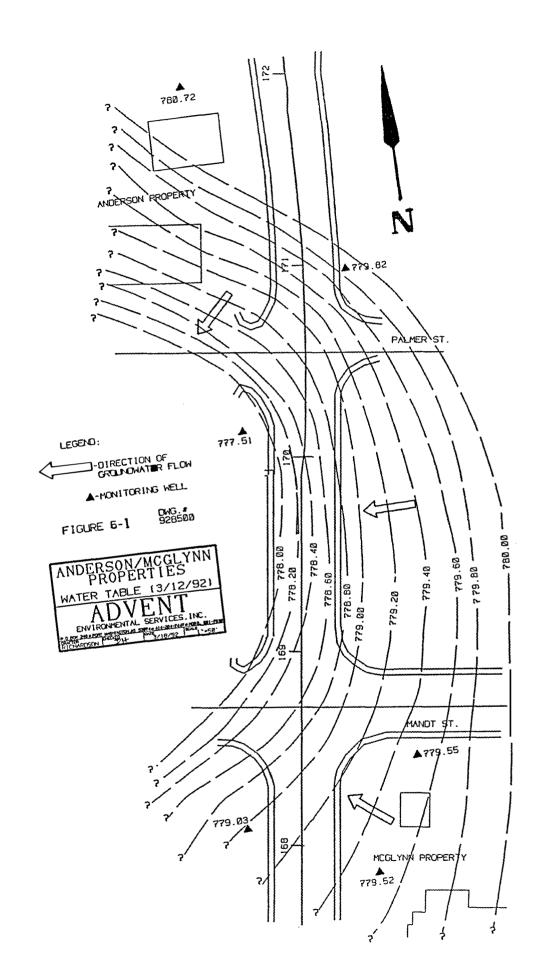
6.4 Groundwater

Groundwater was encountered in all six borings at depths ranging from 5.0 to 7.3 feet. Figure 6-1 illustrates the configuration of the water table at the site. Groundwater flow at the site appears to be to the northwest at a hydraulic gradient of 0.014 foot per foot.

No GROs, DROs, total lead, or VOCs were identified by laboratory analyses of the six groundwater samples.

Naphthalenewas identified in groundwater sample MGW-2 at a level of 0.28 ppb, which is below the proposed Preventive Action Limit of 8 ppb in the Wisconsin Administrative Code-Chapter NR 140. No other PAH compounds were identified in the six groundwater samples.

These data suggest that groundwater contamination may be encountered if utility trench excavations exceed five feet.



7.0 RECOMMENDATIONS

After completing the Phase II1/2 Environmental Assessment for the McGlynn Property site, AESI recommends that the contamination previously identified on the edge of the WDOT right-of-way be remediated in conjunction with possible remediation activities at the adjacent private property. The assessment results indicate that the zone of proposed construction may be impacted by the soil contamination previously identified at the McGlynn Property site. This is based on the low levels of phenanthrene identified in soil borings M-2 and M-3. The WDOT contractors should be aware of the possibility of encountering contamination during the construction and trenching activities and that they should monitor the area for any visual or olfactory indications of contamination. If contamination is encountered, AESI personnel should be present on-site to monitor the construction activities. Any contaminated soil encountered at this time could be stockpiled on-site and analyzed for disposal parameters. Construction activities for the storm sewer may encounter the water table as the result of its seasonal fluctuation. The origin of the naphthalene in groundwater sample MGW-2 is unclear. It is uncertain whether this is related to the contamination at the Anderson Property site or associated with the tanks at the McGlynn Property. Based on the analytical results and the proposed construction plans, contaminated soil or groundwater should not delay the proposed construction. If remedial activities have not proceeded on the private property by the time of construction, an impermeable barrier, such as several layers of visqueen, should be placed along the edge of the construction zone to isolate the previously identified contamination from the new State Highway 80 roadway. The WDOT should also consider the use of an impermeable backfill material in the storm sewer trenches to prevent the trenches from acting as conduits for the spread of any migrating contamination. Upon completion of remedial activities at the McGlynn Property site, the groundwater monitoring wells should be abandoned according to procedures outlined in Wisconsin Administrative Code-Chapter NR 141.25.

APPENDIX A

PHASE II ENVIRONMENTAL ASSESSMENT REPORT CONDUCTED BY AQUA-TECH, INC. ON JUNE 8, 1990 FOR THE McGLYNN PROPERTY



Uctober 5, 1990

Mr. Kevin Gehrmann
Misconsin Department of Fransportation
Risk and Marety Management
Hill Farms State Office Building
4802 Sheboygan Avenue, Room 751
Madison, WI 53707-7915

Dear Mr. Gehrmann:

Enclosed is the Phase II Environmental Assessment Report for the McGlynn Property site, located on State Highway 80. Hub City. Richland County, Wisconsin, DOT Project No. 5042-02-00.

If you have any questions regarding this report, please do not hesitate to contact me.

Sincerely,

AQUA-TECH/INC.

Z. Vance Jackson, Jr.

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ZVJ/kr

Enclosure

PHASE II

ENVIRONMENTAL ASSESSMENT REPORT

FOR THE

MC GLYNN PROPERTY

STATE HIGHWAY 80

HUB CITY

RICHLAND COUNTY, WISCONSIN

OCTOBER 1990

PREPARED FOR THE

WISCONSIN DEPARTMENT OF TRANSPORTATION

PROJECT 5042-02-00

PREPARED BY
AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT 92500

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PHASE II

ENVIRONMENTAL ASSESSMENT REPORT

MC GLYNN PROPERTY

HUB CITY

RICHLAND COUNTY, WISCONSIN

WDOT PROJECT 5042-02-00

ATI PROJECT 92500

Prepared By:

(Kr. / Date: 10-5-90.

Stephen G. Reuter, C.P.G.

James H. Cheshire

Environmental Assessment Specialist

Aqua-Tech, Inc.

Reviewed By:

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AIPG Certificate #7836 Aqua-Tech, Inc.

Hydrogeologist

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1.0 SUMMARY

Aqua-Tech, Inc. has completed a Phase II Environmental Assessment for the McGlynn Property as contracted April 26, 1990, by the Wisconsin Department of Transportation (WDCT) Risk and Safety Management Section as part of WDOT Project 5042-02-DO.

> The purpose of this assessment was to identify possible soil and/or groundwater contamination associated with underground storage tanks at the site. The assessment included the following:

- Regulatory background review
- Site representative interview
- Site reconnaissance inspection
- Two soil borings to a maximum depth of 13:0 feet
- Collection and field screening of subsurface soil samples for volatile organic compounds (VOCs)
- Chemical analyses of two subsurface soil samples for total petroleum hydrocarbons (TPH) as gasoline and as diesel fuel
- Chemical analysis of a groundwater sample for benzene, toluene, ethylbenzene, and xylenes (BTEX)

Results of the assessment indicate that THE SOIL AND GROUNDWA-TER AT THE SITE AND EXISTING WOOT RIGHT-OF-WAY ARE CONTAMINATED WITH PETROLEUM PRODUCTS. HOWEVER, THE EXTENT OF CONTAMINATION HAS NOT BEEN DEFINED AND FURTHER INVESTIGATION AT THE SITE IS RECOMMENDED.

Chemical analyses of two subsurface soil samples collected at the site revealed TPH levels exceeding the 10 ug/g (ppm) Wisconsin Department of Industry, Labor and Human Relations (WDTHHR) remedial

action standard for petroleum contaminated soils which has been adopted by the Wisconsin Department of Natural Resources (WDNR).

Chemical analysis of a groundwater sample collected from boring location B-1 indicated BTEX levels exceeding the Wisconsin Administrative Code -- Chapter N.R. 140 -- Groundwater Quality Standards. No groundwater samples were collected from boring location B-2 completed on the existing WDOT right-of-way at the site. Based on the results of the chemical analysis of soil sample SB-2 collected at the interface of the surface of the groundwater table and chemical analysis of groundwater sample WB-1, the GROUNDWATER ON THE EXISTING RIGHT-OF-WAY IS BELIEVED TO BE CONTAMI-NATED WITH PETROLEUM PRODUCTS.

Aqua-Tech, Inc. recommends additional investigation is necessary to determine the extent of soil and groundwater contamination. A series of three to six borings are recommended to delineate the contaminant plume on the existing WDOT right-of-way at the site.

Aqua-Tech estimates the cost of the Phase III Assessment to range from \$2,750 to \$4,500.

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2.0 SITE BACKGROUND

2.1 Introduction

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

2.2 Site Location

The McGlynn Property site (formerly referred to by the WDOT as the Waldsmith Property) occupies approximately 0.2 acres on the east side of State Highway 80 in the unincorporated village of Hub City, township of Henrietta, Richland County, Wisconsin (Refer to Figure 2-1).

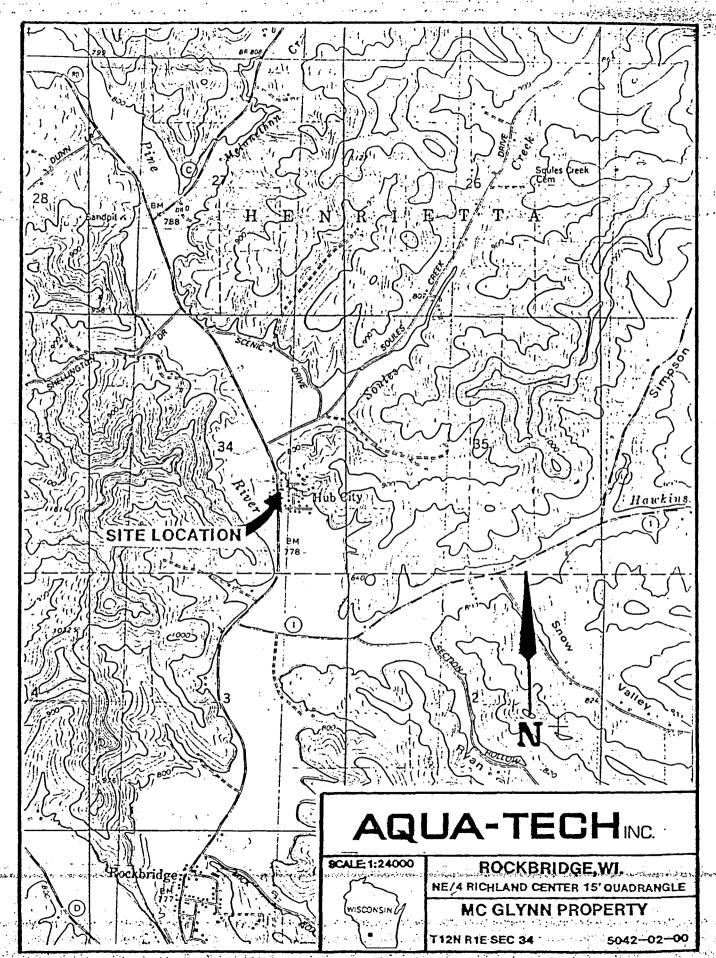
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2.3 Geology

The site is located in the Driftless Area of the Western Uplands Province of western Wisconsin. The Driftless Area is the portion of Wisconsin that was not affected by glaciers of the last ice age. The physiography of the region has been determined by differential erosion of Cambrian age sandstone bedrock.

The soils encountered in the test borings range from a silty loam to a coarse sand with some fine gravel.

Groundwater was encountered in both soil borings at depths of 7.0 and 8.75 feet. No direction of groundwater flow was determined from boring water levels. Based on local topography, the groundwater is suspected to flow in a southwesterly to southerly direction across the site toward the



2.4 Site History

According to Mr. Francis Waldsmith, former owner of the property, a hotel was located at the site prior to 1932 or 1933 when the gasoline service station was constructed. The size and contents of the underground storage tanks at the site are unknown. However, Mr. Waldsmith recollects two hand pumps being located at the site and he thinks that the station sold regular and ethyl gasolines. The year the station became inactive remains undetermined, but according to Mr. Waldsmith, the station was not operating at the time his father bought the property in 1958. Mr. Waldsmith does not know of any underground storage tanks ever being removed from the property.

2.5 Regulatory Review

The McGlynn Property 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 (WDNR) files. These files include the List of Active and Abandoned Landfills, the Wisconsin Inventory of Sites or Facilities Which May Cause or Threaten to Cause Environmental Pollution, and the Statewide Spills and Hazardous Incident Report for the period of January 1978 to December 1989.

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There was no release of hazardous materials listed within a one mile radius of the site on the WDNR's Statewide Spills and Hazardous Incident Report.

There are no underground storage tanks listed on the

Wisconsin Department of Industry, Labor, and Human Relations

computer inventory at the site.

3.0 SITE ASSESSMENT PROCEDURES AND FIELD OBSERVATIONS

3.1 Introduction

This section outlines assessment procedures and field observations for the environmental assessment at the McGlynn Property. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific assessment activities are also provided. Prior to Aqua-Tech, Inc. completing the soil borings at the site, a right-of-entry agreement was obtained from the property owner by the WDOT on April 26, 1990 (Refer to Appendix A).

3.2 Site Representative Interview

On July 23, 1990, James H. Cheshire of Aqua-Tech, Inc. conducted a telephone interview with Mr. Francis Waldsmith, former owner of the property. The interview was conducted for the purpose of gathering information that would aid in completing the Environmental Assessment at the McGlynn Property.

3.3 Site Reconnaissance Inspection

James H. Cheshire of Aqua-Tech conducted a reconnaissance inspection of the site on June 8, 1990. The reconnaissance inspection included a walk through of the site to determine appropriate sampling locations, taking into consideration underground tank bed location, underground and overhead utilities, and site accessibility.

Reconnaissance Inspection Observations

The McGlynn Property site is located in a mixed commercial/residential area in the unincorporated village of Hub City, Wisconsin. The site is bounded to the north by Mandt Street. Across Mandt Street to the north is a supper club. The site is bounded to the south by a vacant tavern, to the east by a parking lot with a shack structure, and to the west by State Highway 80. Across State Highway 80 to the west is a single family dwelling. The Pine River is located approximately 1,000 feet west of the site and approximately 1,150 feet south of the site.

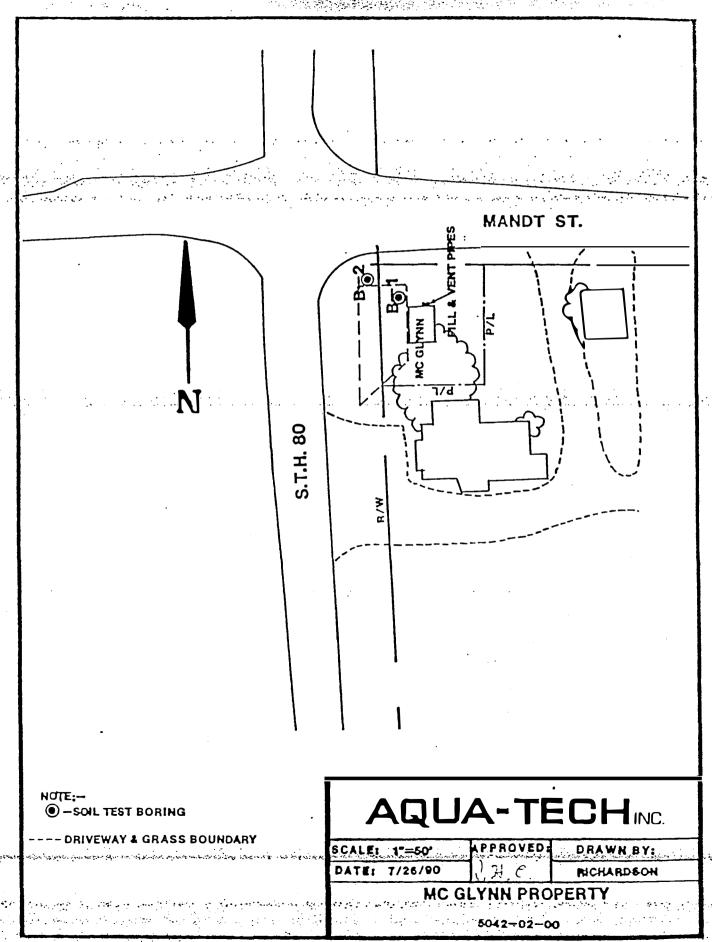
A vent and a fill pipe were observed indicating the presence of an underground storage tank in the location depicted in Figure 3-1. The tank appeared to be empty, but an "old" gasoline odor was apparent in the tank. A one story building (approximately 18 by 13 feet) and a 60 by 25 feet concrete slab were observed which are remnants of the former gasoline station. Remnants of piping believed to be associated with the former pump island were observed in the concrete slab. Much of the concrete slab is now covered with topsoil and sparse grass.

Photographs of the site are provided in Appendix B.

3.4 Sampling Procedures

Samples were collected from borings at locations selected during the reconnaissance inspection to determine whether environmental contamination exists at the site. On

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June 8, 1990, two soil borings were completed at the site in the locations depicted in Figure 3-1.

Soil Sampling Procedures

Subsurface soil samples were collected with a truckmounted rotary drill equipped with hollow stem augers and a
two inch diameter, 24 inch split spoon sampler. The split
spoon sampler was advanced at two foot intervals 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 equipment was decontaminated with an alconox and reagent water solution between sampling points to prevent cross contamination.

A preliminary survey was conducted by screening samples with a photoionization detector (PID) 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 are recorded on the soil profile logs in Appendix C.

Prior to the start of the assessment, the PID was calibrated according to the manufacturers specifications and recorded on a calibration log sheet. A copy of the calibration log sheet is provided in Appendix D.

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After pedologic logging (See Appendix C), the selected samples were stored in clean, teflon-capped four ounce jars and cooled to $4^{\rm f}$ C for transport to the laboratory.

Upon completion of sampling, the boreholes were completely backfilled with bentonite according to Thapter N.R. 141.25 of the Wisconsin Administrative Code and WDNR form 3300-5B is provided in Appendix C. The soil cuttings were stockpiled on and covered with an impermeable membrane at the site.

Groundwater Sampling Procedures

Groundwater samples were collected by inserting a clean, disposable PVC bailer down the hollow stem auger and transferring the contents to sample containers. The samples were cooled to 4 °C for transport to the laboratory.

3.5 Chain of Custody Procedures

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

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

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* Field Notebooks

* Chain of Custody Records

Each sample is labeled, physically preserved, and sealed immediately after collection. To minimize handling of sample containers, labels are filled out prior to sample collection.

The sample label is completed using waterproof ink and firmly affixed to the sample containers. The sample label provides the following information:

- * Location
- * Sample Number
- * Data and Time of Collection
- * Analysis Required
- * Name of Sampler

A chain of custody record (See Appendix E) is fully completed in triplicate by the Aqua-Tech sampler immediately following sample collection.

Transfer of Custody Shipment

The cooler in which the samples are packed is accompanied by the chain of custody record. When transferring samples, the individuals relinquishing and receiving them sign, date, and note the time on the chain of custody record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain of custody record. A copy of the completed chain of custody record is retained by the

laboratory until analyses are complete. The record is then transferred to the site file with the analytical results.

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4.0 ANALYTICAL PROCEDURES AND RESULTS

4.1 Introduction

This section includes results of chemical analyses of Aqua-Tech collected soil samples and groundwater samples for total petroleum hydrocarbons (TFH) and benzene, toluene, ethylbenzene, and xylenes (BTEX).

4.2 Analytical Procedures

The samples were analyzed by Aqua-Tech, Inc. in Port Washington, Wisconsin. The TPH analyses were conducted using a gas chromatograph (GC) equipped with a flame-ionization detector according to the Modified California Method. The BTEX analyses were conducted with a GC equipped with a photoionization detector according to U.S. EPA Method 601/602.

Methodology references contain specific quality control (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. Specifics of the analytical methodologies utilized are available from the laboratory.

4.3 Results of Chemical Analyses of Aqua-Tech Collected Samples

Chemical analyses for TPH of soil samples SB-1 and SB-2

collected from boring locations B-1 and B-2, respectively,

revealed the following:

SB-1:

TPH as gasoline: 53 ug/g
TPH as diesel fuel: 75 ug/g
duplicate: 86 ug/g

SB-2:

TPH as gasoline: 59 ug/g
duplicate 32 ug/g
TPH as diesel fuel: 14 ug/g

The laboratory analytical detection limit for TPH as gasoline in soil is 1.0 ug/g. The detection limit for TPH as diesel fuel in soil is 10 ug/g.

Chemical analysis for BTEX of groundwater sample WB-1(A) revealed the following estimated concentrations in ug/l (ppb):

Benzene: 1,184 ug/l

Toluene: 570 ug/l

Ethylbenzene: 210 ug/l

Xylenes: 3,420 ug/l

The laboratory analytical detection limit for BTEX is 1.0 ug/l. The results of the BTEX analysis are estimated concentrations because the concentrations exceeded the instrument calibration range due to large amounts of solids present in the water sample.

Chemical analysis of groundwater sample WB-1(B) for TPH detected the following:

TPH as diesel fuel: 23,100 ug/l

The laboratory analytical detection limit for TPH in groundwater is 50 ug/l.

The complete results of the chemical analyses are provided in Table 4-1. The original analytical data are provided in Appendix F.

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TABLE 4-1

RESULTS OF THE CHEMICAL ANALYSES OF

AOUA-TECH COLLECTED SOIL AND GROUNDWATER SAMPLES

	• • • •			
<u>Parameter</u>	Sample Number SB-1	Sample Number SB-2	Sample Number WE-1(A)	Sample Number WB-1(B)
Sample Description	Boring	Boring	Groundwater Boring B-1	Boring
Depth interval (feet)	5.0-7.0	7.0-9.0		
Total Solids (%)	84	86		
TPH as Diesel Fuel	75 ug/g ²	14 ug/g		23,100 ug/l ²
duplicate spike	86 ug/g	126%		.; <u></u>
TPH as Gasoline	53 ug/g	59 ug/g		
duplicate		32 ug/g		
Benzene ³			1,184 ug/l*	- -
Toluene ³			570 ug/l*	
Ethylbenzene ³		***	210 ug/l*	
Xylenes ³		· 	3,420 ug/l*	

The remedial action standard for TPH in soils as prescribed by the WDILHR and the WDNR is 10 ug/g (ppm). The laboratory analytical detection limit for TPH as gasoline is 1.0 ug/g and for TPH as diesel fuel 10 ug/g.

There is no remedial action standard for TPH in groundwater. The laboratory analytical detection limit for TPH is 50 ug/l.

The remedial action standards for BTEX in groundwater as prescribed by the Wisconsin Administrative Code are included in Table 5-1. The laboratory analytical detection limit for BTEX is 1.0 ug/l (ppb).

^{*} Response for this parameter exceeded instrument calibration range because of large amounts of solids in sample. Concentrations listed are estimated.

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 McGlynn Property site. In addition, potential migration pathways of contaminants are discussed if warranted.

5.2 Soil

Chemical analyses of soil samples SB-1 and SB-2 detected total petroleum hydrocarbon (TPH) concentrations above the 10 ppm remedial action standard for petroleum contaminated soils prescribed by the Wisconsin DILHR. The extent of contamination is unknown, but the contamination is known to be present on the existing WDOT right-of-way. Boring B-2 was completed approximately 30 feet east of the existing State Highway 80 centerline on the existing WDOT right-of-way.

Field screening of the soils with a photoionization detector (PID) revealed volatile organic compound (VOC) levels ranging from 5 to 200 ppm in boring B-1 and from 0 to 110 ppm in boring B-2. Results of the PID field screening survey suggest that the contaminated soil on the existing WDOT right-of-way is caused by migration of the petroleum contaminants at the interface of the groundwater table. No VOCs were detected upon field screening of soil samples collected above the groundwater interface in boring B-2.

The period of the confidence o

5.3 Groundwater

Results of the chemical analysis of groundwater sample WB-1 indicate that the groundwater at the site is contaminated with benzene, toluene, ethylbenzene, and xylenes (BTEX) above the Preventive Action Standard prescribed by the Wisconsin Administrative Code Chapter N.R. 140.10 (See Table 5-1). No groundwater samples were collected from boring B-2. However, based on the results of soil sample SB-2 collected at the interval where the groundwater table was encountered (7.0 to 9.0 feet), the groundwater on the existing WDOT right-of-way at the site is believed to be contaminated. The direction of groundwater flow and the extent of groundwater contamination have not been determined.

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TABLE 5-1
PUBLIC HEALTH GROUNDWATER QUALITY STANDARDS

WISCONSIN ADMINISTRATIVE CODE .

CHAPTER N.R. 140 SUECHAPTER II

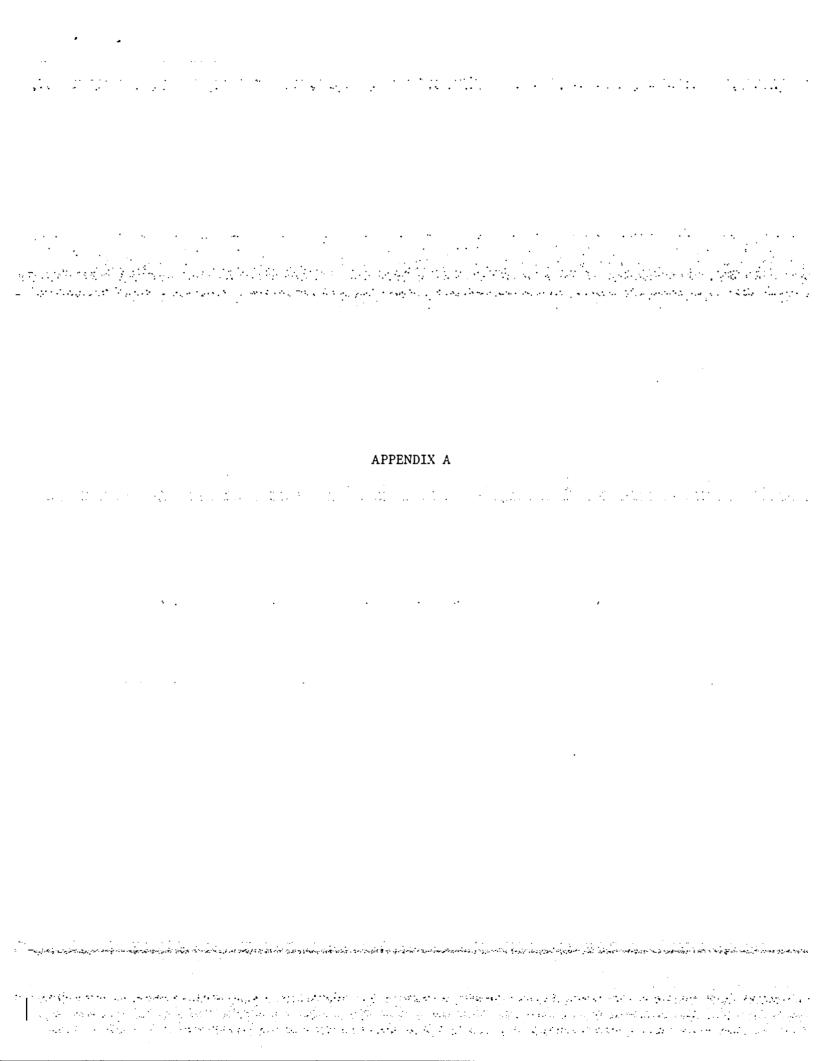
GROUNDWATER QUALITY STANDARDS

Substance	Enforcement Standard (micrograms per liter)	Preventative Action (micrograms per liter)
Benzene	0.67	0.067
Ethylbenzene	1360	272
Toluene	343	68.6
Xylenes	620	124

5.0 RECOMMENDATIONS

After completing the Phase II Environmental Assessment for the McGlynn Property, Aqua-Tech recommends that further investigation to determine the extent of soil and groundwater contamination is necessary. Aqua-Tech recommends that a series of three to six borings be completed to delineate the contaminated plume on the existing WDOT right-of-way. Aqua-Tech estimates the cost of the Phase III assessment to range from approximately \$2,750 to \$4,500.

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RIGHT OF ENTRY Visconsin Department of Transportation

The undersigned grants to the State of Wisconsin, Department of Transportation, it's agents and contractors, the right to enter upon the following described lands for the purpose of conducting an Environmental Site Assessment. On the property of Francis P. Waldsmith (Richland County Wisconsin), this site assessment will consist of drilling holes for soil testing purposes in the area described as follows:

Said area lies between a line (parallel to existing R/W line) lying one foot in front of the abandoned gas station building and the existing Right of Way line (see attached exhibit).

The holes will then be filled and capped at the surface with material matching the surrounding ground.

By accepting this Right of Entry, the State of Wisconsin agrees, as required by Wisconsin law, to pay any liabilities arising out of the exercise of its rights of entry whenever those liabilities result from an act or omission of a State of Wisconsin officer, employee, or agent acting within the scope of his or her State of Wisconsin authority.

The Right of Entry shall expire upon completion of the Environmental Site Assessment.

		. Ilelle / Ma	Sland
(O-ner)	· (Date)	(Owner)	(Date)
·		. 545an 4	ne Dlyn
(Owner)	(Date)	(Owner)	· (Dote)
•		Danies R	Clarks

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FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: McGlynn Property

PAGE 1

DATE: 6/8/90

TIML:

9:50 am

DIRECTION OF PHOTOGRAPH:

Southeast ...

EATHER CONDITIONS:

Overcast, 60°F

PHOTOGRAPHED BY:

Jim Cheshire

SAMPLE ID:

(If Applicable):

SB-1, WB-1(A), WB-1(B)

View of boring B-1 in progress from across State Highway 80.

DATE: 6/8/90

TIME: 10:15 am

DIRECTION OF PHOTOGRAPH:

Northeast

WEATHER CONDITIONS:

Overcast, 60° F

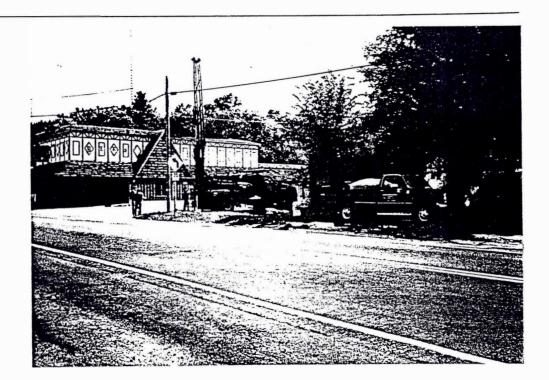
PHOTOGRAPHED BY:

Jim Cheshire

SAMPLE ID:

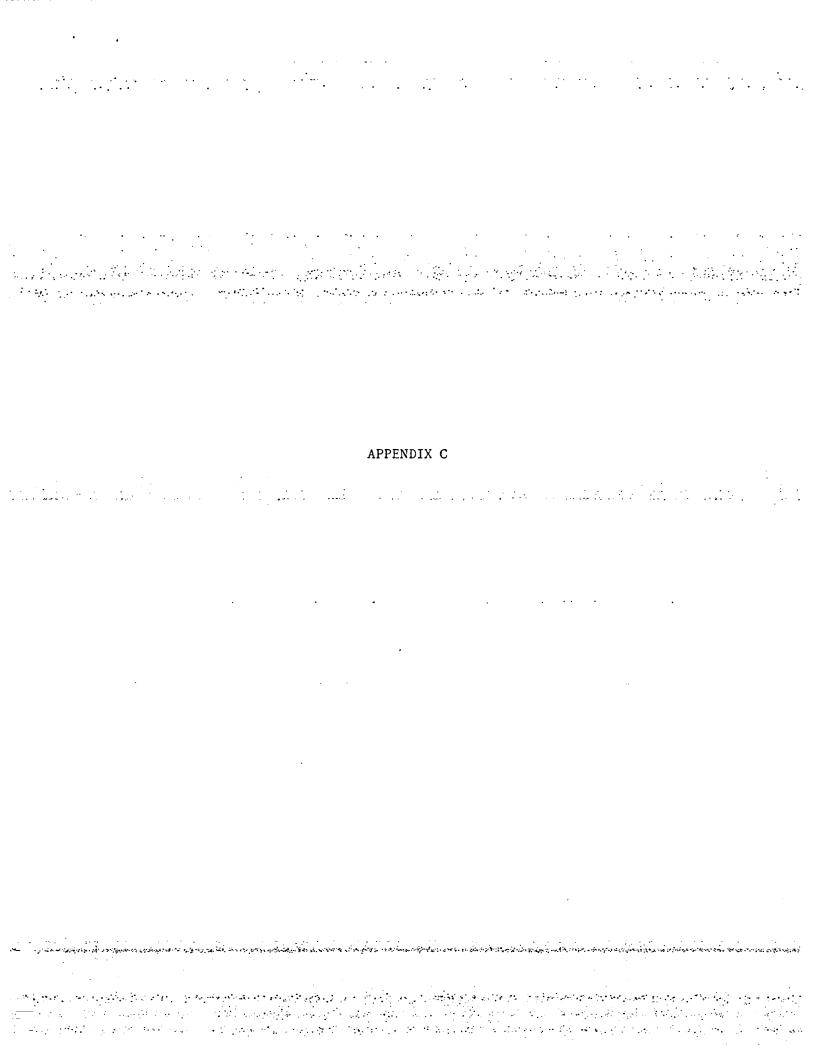
(If Applicable):

SB-2



DESCRIPTION: View of boring B-2 in progress from across State Highway 80.

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AQU	JA-TE	СН	, INC			SOIL PROFILE LOG				
140 S	. PARK ST		·· · · · · · · · · · · · · · · · · · ·		PROJECT: MC GLYNN					
PORT	WASHINGTO	N, W	I 530 74		LOCATION: STH 80, HUBCITY RICHLAND COUNTY, WI					
TELEP	HONE:				PROJECT#: 5042-02-00					
(414) (414)	284-5746 375-0407	(MTI	LW METRO)			ATI WO#: 92500				
	RING B-1		,			SURFACE ELEVATION				
	SAMP	ĻE	s							
NO.	MOISTURE (bpf)	REC	PID LEVELS	DEPTH (FT)]	DESCRIPTION AND REMARKS				
7 .				0.0	****	6" TOPSOIL AND 4" CONCRETE				
				=		C TOTBOTE MAD I CONCRETE				
		N/R		_						
	MOIST		5	=		3.0' - 4.0' LT BROWN SILTY SAND W/SOME GRAVEL				
			50			4.0' - 5.5' LT RED-BROWN FINE TO MEDIUM SAND				
SB-1			200	5.0		5.5' - 9.0' LIGHT BROWN SILT W/FINE SAND				
2P-1			200	_		5.5 - 9.0 LIGHT BROWN SILT W/FINE SAND				
			110							
34	WET					a salasa da la				
			190	10.0		9.0' - 13.0' LIGHT RED-BROWN SILTY FINE SAND W/FINE GRAVEL				
			15			.,,				
			160							
			. 25	13.0	\dashv					
				=		TERMINATED BORING AT 13.0'				
	*			15.0		*SOIL SAMPLE SE-1: 5.0' - 7.0' = 200PPM *GROUNDWATER SAMPLES WE-1(A): 2 X 40 ml				
			* *			₩2-1(8): 1 X 1 LITER				
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(JAMED)	EVEL CRC	DUE	TONG			DAL INCODES STATE				
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WHILE DRILLING 8.0' START DAT DEPTH TO WATER 8.9' DRILLING										
DEPTH TO WATER 8.9 DRILLING M						SAMPLING				
LOGGER:						James H. Charles				

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev.7-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis.

Admin. Code, whichever is applicable. Also, see instructions on back.

(1)	GENERAL INFORMATION		(2) FACIL				
_	Well/Drillhole/Borehole	County	Origina	al Well Own	er (If Known)		
	Location B-1	Richland]		_ <i>\mathcal{k}</i>	A	
	N 1 1/4 of 5 F 1/4 of Sec		Present	Well Owne	r	j	
	(If applicable)		Street o	or Route		/	
	Gov't Lot	Grid Number	1		- 1		
	Grid Location		City, S	tate, Zip Co	de		
	ft N. S.,	fi. E. W.			· · · <u>-</u> · · · _ · · ·		
	Civil Town Name		Facility	Well No. a	nd/or Name (II A	Applicable) WI Unique Well No.	
	Meny ctter	Bio Book and Alaba and Solar					
	Street Address of Well		Reason	For Abando	onment	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
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	State Hig City, Village	Shay or	Date of	Abandonmo	10/7 26.11	Bering Completo	
	Hub City]	6-8-9		-	
W	ELL/DRILLHOLE/BOREHOLE			8	70		
	Original Well/Drillhole/Borehole		(4) Depth t	o Water (Fe	et) \$,75+3	,	
(-)	•	- · · · · · · · · · · · · · · · · · · ·				Yes No No Not Applicable	
	(Date)	(1)	-	& Piping Rer) Removed?	_		
	-	la		Removed?		Yes No Not Applicable	
	Monitoring Well	Construction Report Available?				Yes No Not Applicable	
	Water Well	Yes No	_	Left in Place	" , , , , , , L	Yes No	
	Drillhole	Soil Profile log	If No, E		<i>\\\</i> }		
	Borehole		Wes Co	sia a Cut Off	Dalam Sunface?	□ Vec □ No	
				• .	Below Surface?	. = . =	
	Construction Type:	(Sandpoint) Dug		_	1 Rise to Surface		
		(Sandpoint) Ung			After 24 Hours?		
	Other (Specify)		11 1 125	s, Was Hole	Retopped?	Yes No	
	г		(5) Require	d Method of	Placing Sealing	Material	
	Formation Type:	Пъ	Conductor Pipe-Gravity Conductor Pipe-Pumped				
	▶ Unconsolidated Formation	☐ Bedrock	. =	p Bailer		Other (Explain) Gazify	
	Total Well Depth (ft.) 13.(Casing Diameter (ins.) Λ'/λ	(6) Sealing			For monitoring wells and	
	(From groundsurface)	(,		t Cement Gre	out	monitoring well boreholes only	
	,	•	_		oncrete) Grout		
	Casing Depth (ft.)		_	crete	,	Bentonite Pellets	
			_	/-Sand Slurr	v	Granular Bentonite	
	Was Well Annular Space Grouted?	Yes 🖸 No 🔲 Unknown	. — .	tonite-Sand	·	l Similar Bentonite	
	If Yes, To What Depth?	Feet	_	oped Benton	-	! !	
	II 103, 10 What Depart			ped Demon			
(7)	Sealing Mate	rial Head	F (Ft)	T. (F.)	No. Yards,	Mix Ratio or Mud Weight	
	Scaling Water	nai Oscu	From (Ft.)	To (Ft.)	Sacks Sealant or Volume	Mix Ratio of Mud Weight	
		2	Surface				
	- Garages	De Traite	541400	13.0	24		
	<i>,</i> (
===							
(8)	Comments:						
(9)	Name of Person or Firm Doing Sea	ling Work	(10)	FOR	DNR OR CO	UNTY USE ONLY	
	James H. Clock:	CO (AOVE-TRIL I)	Date	Received/In	spected	District/County	
/ W.F.	Signature of Person Doing Work	Date Signed					
	James V. Cherrie	7-9-90	Revie	ewer/Inspec	101		
	Street or Route	Telephone Number					
	1405, Park St.	(4/4) 284-5746	Follo	w-up Neces	sary		
	City, State, Zip Code]	4			
	Post W.	1 1.71 (5 1)					

AQUA-TECH, INC SOIL PROFILE LOG 140 S. PARK ST. MC GLYNN PROJECT: LOCATION: STH 80, HUBCITY PORT WASHINGTON, WI 53074 RICHLAND COUNTY, WI TELEPHONE: PROJECT#: 5042-02-00 (414) 284-5746 (414) 375-0407 (MILW METRO) ATI WO#: 92500 BORING B-2 SURFACE ELEVATION SAMPLES PID LEVELS DEPTH DESCRIPTION AND REMARKS MOISTURE (PPM) NO. (bpf) (FT) -0.0-TOPSOIL 1.0' - 2.0' DK BRN SILTY LOAM TOPSOIL W/GRAVEL 0 MOIST 2.0' - 4.0' LIGHT RED-BROWN CLAYEY SILT 0 4.0' - 7.0' LT BRN TO RD-BRN SILTY FINE SAND 5.0-0 7.0' - 8.0' LT BRN TO RD-BRN CLAYEY SILT W/SAND SB-2 WET 110 8.0' - 11.0' LT RD-BRN CSE SAND W/FINE GRAVEL 110 10.0-11.0-TERMINATED BORING AT 11.0' *XSOIL SAMPLE SB-2: 7.0' - 9.0' 15.0-20.0-WATER LEVEL OBSERVATIONS GENERAL INFORMATION WHILE DRILLING 7.0' START DATE 6/08/90 COMPLETION DATE 6/08/90 DRILLING METHOD: 2 1/4" HOLLOW STEM AUGER; SPLIT SPOON SAMPLING DEPTH TO WATER 7.0' DEPTH TO CAVE-IN ----LOGGER: James H. Charles the first of the control of the

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AQUA-TECH GROCE LABORATORIES

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DATE 6-7.90 · TIME	3:30p. m.
SIGNATURE James H Cheshine	
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APPENDIX F

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AQUA-TECH GROCE LABORATORIES

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APPENDIX B

WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) LIST OF LEAKING UNDERGROUND STORAGE TANKS (LUST) LIST

	ADDRESS:	CITY:	DATE	DDI	CASE STATUS:	SUBSTANCE:	RESPONSIBLE PARTY:	RESPONSIBLE PARTY ADDRESS:
••••	***************************************	***************************************	******	•••		•••••	•••••	•••••
	CHARLES STREET	WESTFIELD	7/12/90	3	FIELD INVESTIGATION	FUEL OIL	WESTFIELD SCHOOLS	303 THOMAS ST, WESTFIELD, WI 53964
	303 THOMAS ST	WESTFIELD	6/29/90	3	FIELD INVESTIGATION	FUEL OIL	WESTFIELD SCHOOLS	303 THOMAS ST WESTFIELD, WI
						•		
	M/Y 171	AKAN	0 (37 (00		FIELD INVESTIGATION	OTHER	AKAN, TOWNSHIP OF	RT 1 BOX 206,BLUE RIVER,WI 53518
	CTY DEI WITH CTY N	BLOOM CITY	8/27/90 10/12/90	3	FIELD INVESTIGATION	LEADED GAS	WARREN, LAUREL	1211 KING ST. JANESVILLE, WI 54646
	P 0 BOX 96	GOTHAM	10/11/90	ī	FIELD INVESTIGATION	UNKNOWN HYDROCARBO		P O BOX 96,GOTHAH,WI 53540
	MM 80	HUB CITY	10/09/90	2	UNKNOW	OTHER	ANDERSON FRED	RT 3 RICHLAND CENTER WI 53581
	HWY 80 MAIN STREET	HUB CITY LONE ROCK	10/24/90 5/22/91		UNKNOWN FIELD INVESTIGATION	OTHER MULTIPLE SUBSTANCE	MCGLYNN, THADDEUS	RT 3,RICHLAND CENTER, VI 53581 5371 FARHCO DRIVE, MADISON, VI 53713
	RT 3 MY 80	RICHLAND	10/09/90	Ž	UNKNOUN	OTHER	HENRY RAYHOND	RT 3 RICHLAND CENTER WI 53581
	710 S CHURCH ST	RICHLAND CENTER	8/08/90	4	UNKNOUN	UNKNOWN HYDROCARBO		710 S CHURCH ST RICHLAND CENTER
	177 E GAGE ST May 14	RICHLAND CENTER RICHLAND CENTER	8/08/90 11/11/91	4	NO ACTION	UNKHOUN HYDROCARBO	BRUSH CREEK SCHOOL	177 E GAGE ST BOX 674, RICHLAND CENTER, 125 S CENTRAL AVE, RICHLAND CENTER, WI
	HUY 14	RICHLAND CENTER	4/25/90	ī	LONG TERM MONITORING	MULTIPLE SUBSTANCE	KOLLER PETROLEUM	241 BALTIMORE SPRING GREEN WI 53588
	MAY 14 & CTY TRUNK 0	RICHLAND CENTER	9/18/89	3	FIELD INVESTIGATION	UNLEADED GAS	JACOBSON BENDER OIL CO R. BENDER	
	420 W SEMINARY ST 196 W COURT ST	RICHLAND CENTER RICHLAND CENTER	6/21/90 6/02/88	4	FIELD INVESTIGATION FIELD INVESTIGATION	UNKNOWN HYDROCARBO	LEYDA, JIM RICHLAND CO BANK	343 E COURT ST,RICHLAND CENTER, WI 53581 BOX 677,RICHLAND CENTER, WI 53581
	NWY 80 SOUTH	RICHLAND CENTER	11/11/91	4	NO ACTION	FUEL OIL	RICHLAND MIDDLE SCHOOL	125 S CENTRAL AVE, RICHLAND CENTER, VI
	287 CENTRAL	RICHLAND CENTER	5/16/90	Í	FIELD INVESTIGATION	OTHER	RICHLAND CONSUMER COOP	165 W HAZELTINE AVE RICHLAND CENTER
	RT 3	RICHLAND CENTER RICHLAND CENTER	11/05/90	2	FIELD INVESTIGATION		ROCKBRIDGE, TOWN OF	RT 3 RICHLAND CENTER, WI 53581 WWY 14 WEST RICHLAND CENTER WI 53581
	MWY 14 WEST MWY 56 & 131	VIOLA	2/21/84	ì	FIELD INVESTIGATION FIELD INVESTIGATION	UNLEADED GAS MULTIPLE SUBSTANCE	U.W. RICHLAND CTR BENDER, WILLIAM & ANN	PO BOX 25, VIOLA, WI 54664
	ROUTE 2 CTY MAY G	VIOLA	5/17/91	4	FIELD INVESTIGATION	DIESEL	SES CYCLE, INC	RT 2 BOX 215 CTY MUY G.VIOLA, WI 54664
	CTY A & D-1 BLK SO.	WEST LINA	4/29/91 8/17/90	4	FIELD INVESTIGATION		ORGANIC G.R.E.E.N.	106275 WESTERN AVE, CHICAGO, IL 60643
	RR 3 STH 80	YUBA	6/11/70	•	FIELD INVESTIGATION	UNKHOWN HYDROCARBO	SOFERS, ROBERT	RR 3 STH 80, YUBA, W1 54672
	1313 PARK AVE	BELOIT	11/01/91	4	NO ACTION	MULTIPLE SUBSTANCE	ARC SUPPLY	822 BROAD ST, BELOIT, WI 53511
	202 SHIRLAND AVE	BELOIT	4/19/88	4	FIELD INVESTIGATION			• •
	1231 INMAN PEVY	BELOIT	7/17/90	3	FIELD INVESTIGATION	FUEL OIL	BELOIT TURNER MIGH SCHOOL	1231 INMAN PRAY BELOIT, WI
	435 NOODWARD AVE 701 LAWTON AVE	BELOIT BELOIT	8/19/89	ł	FIELD INVESTIGATION REHEDIAL ACTION	UNLEADED GAS DIESEL	BORGERDING ESTATE COLT INDUSTRIES	1000 E DEAN RD, MILWAUXEE, VI 53217 701 LAWTON AVE, BELOIT, VI 53511
	2212 PRAIRIE AVE	BELOIT	11/16/90	1	FIELD INVESTIGATION	UNLEADED GAS	DEWEY'S WRECKER SERVICE	2212 N PRAIRIE ST, BELOIT, WI 53512
	2810 KENNEDY DRIVE	BELOIT	7/23/91	3	FIELD INVESTIGATION	UNKNOUN HYDROCARBO		7701 LEGACY DRIVE, PLANO, TX 75086
	1421 NADISON RD 500 E GRAND AVE	BELOIT BELOIT	6/14/89 5/08/90	2	NO ACTION FIELD INVESTIGATION	UNLEADED GAS UNKNOWN HYDROCARBO	KERR MCGEE ROLLETTE	1421 MADISON RD BELOIT 500 E GRAND AVE, BELOIT, WI 53511
	190 4 43	BELOIT	7/01/89	2	UNKNOWN	MULTIPLE SUBSTANCE	PILOT OIL DAVE BOLUS	PO BOX 10146 KNOXVILLE, TH
	1409 MANCHESTER ST	BELOIT	8/27/90	1	FIELD INVESTIGATION		RYDER TRUCK RENTAL	1409 MANCHESTER ST, BELOIT, WI 53511
	RT 1 TOWN HALL ROAD 856 E 4TH ST	BELOIT BELOIT	8/07/90 3/12/90	4	FIELD INVESTIGATION FIELD INVESTIGATION	UNKNOWN HYDROCARBO UNKNOWN HYDROCARBO		RT 1 TOWN HALL RD BELOIT, WI 856 4TH ST,BELOIT, WI 53511
	1500 4TH ST	BELOIT	10/04/90	ī	FIELD INVESTIGATION		WEISER MOTORS, INC.	1500 FOURTH ST, BELOIT, WI 53511
	500 TOWN LINE RD	BELOIT	2/15/89	3	FIELD INVESTIGATION		WP & L JOSEPH SHEFCHECK	222 & WASHINGTON AVE MADISON WI
	201 ALLEN STREET	CLINTON	6/28/90	4	FIELD INVESTIGATION	MULTIPLE SUBSTANCE		608 HEADON TRAC, DEERFIELD, WI 53551
	601 MILWAUKEE ST 135 MILWAUKEE RD	CLINTON CLINTON	6/05/90 1/17/90	2	REMEDIAL ACTION FIELD INVESTIGATION	UNKNOWN HYDROCARBO MULTIPLE SUBSTANCE		601 MILWAUKEE ST CLINTON, WI 135 MILWAUKEE RD, CLINTON, WI 53525
	CO TRK X	CLINTON	3/02/90	Ž	FIELD INVESTIGATION	UNKNOWN INTOROCARBO		CLINTON, WI
	405 E FULTON	EDGERTON		1	FIELD INVESTIGATION	FUEL OIL	DORSEY TRAILERS	1201 PEACH TREE, ATLANTA, GA
	101 NORTH SWIFT ST 122 W LAWTON ST	EDGERTON EDGERTON	4/02/90 12/06/89	1	FIELD INVESTIGATION NO ACTION	MULTIPLE SUBSTANCE UNLEADED GAS	OREN'S AUTO BODY & CAR WASH TERRA INTERNATIONAL	101 N SVIFT ST, EDGERTON, VI 53534
	102 MAPLE ST	EDGERTON EVANSVILLE	9/04/90	7	FIELD INVESTIGATION	MULTIPLE SUBSTANCE		BOX 4500,LIMA, OHIO 45802 102 MAPLE ST EVANSVILLE WI 53536
	352 E. CENTRE STREET	FOOTVILLE	6/06/89	3	EXERGENCY RESPONSE	UNKNOWN HYDROCARBO	UNKNOWN	
	3420 MILTON AVE	JAKESVILLE	7/09/91	Ş	FIELD INVESTIGATION	UNKNOWN HYDROCARBO		5001 W 80TH ST, MINNEAPOLIS, NN 55437
	100 W MILWAUKEE 4023 NEWVILLE RD	JAKESVILLE JAKESVILLE	7/18/90 1/25/91	4	FIELD INVESTIGATION FIELD INVESTIGATION	UNKNOWN HYDROCARBO OTHER	BELOIT BEVERAGE-MARK MORELLA	100 W MILWAUKEÉ,JANESVILLE,ŬI 53547 1530 GALE DR,BELOIT,WI 53511
	423 WEST DELAVAN	JAKESVILLE	7/23/91	4	NO ACTION	UNKNOWN HYDROCARBO	BOBO'S TAVERN	423 WEST DELAVAN, JANESVILLE, WI 53545
	600 W MILWAUKEE	JANESVILLE	5/31/90	1	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	CAMBECK PETROLEUM	PO BOX 1446, JANESVILLE, WI 53547-1446
	3222 OLD HUMES RD	JANESVILLE	12/04/90	1	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	CAMPBELL, JIH	P 0 BOX 1446, JANESVILLE, WI 53547-1446

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APPENDIX C

SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: McGlynn Property (AESI #92500) PAGE 1 OF 2

DATE: 12/11/91 TIME: 1:30 p.m. DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: 40°F, Sunny

PHOTOGRAPHED BY: Dena Hargraves

DESCRIPTION: The McGlynn Property showing the previous soil boring locations (B-1 and B-2), the

recent soil boring locations (M-1, M-2, M-3, M-4, M-5, and M-6), and the monitoring well

locations (MMW-1, MMW-2, and MMW-3). State Highway 80 runs through the center of the photo and

Mandt Street is in the foreground and on the left edge of the photo.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: McGlynn Property (AESI #92500) PAGE 2 OF 2

DATE: 12/11/91

TIME: 1:30 p.m.

DIRECTION OF PHOTOGRAPH:

Northeast

WEATHER CONDITIONS:

40°F, Sunny

PHOTOGRAPHED BY:

Dena Hargraves



DESCRIPTION: The McGlynn Property showing the previous soil boring locations, the recent soil boring locations, and the monitoring well locations. State Highway 80 runs through the center of the photo and the white truck is parked on Mandt Street.

APPENDIX D

HNU PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: Mc614nn / roperty DATE: 12/10/91, 12/11/9,
SIGNATURE: Jone M Hargrood TIME: 5:00 AM, 7:00 AM
AMBIENT TEMPERATURE: 30° 21°
SAMPLE EQUILIBRATION TEMPERATURE: 70°
WEATHER CONDITIONS: Sunny /Sight Bring , Sunny
HNU Model PI 101, Advent Environmental Services, Inc. number was calibrated with parts per million Isobutylene calibration gas which is equivalent in response to parts per million benzene at a gain setting of with a electron volt
(Ev) lamp. ERRATIC READINGS:
REPAIRS OR CLEANING:
PROCEDURE FOR DAILY CALIBRATION CHECK
A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.
B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.
C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.
D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.
The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction

Manual, Trace Gas Analyzer, HNU Model 101, December, 1985.

APPENDIX E

SOIL PROFILE LOGS AND WDNR WELL/DRILLHOLE ABANDONMENT FORMS (3300-S)

DVEN

ENVIRONMENTAL SERVICES, INC.

P.O. Box 246

Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

STATE HIGHWAY 80 HUB CITY, WI LOCATION:

PROJECT#: 5042-02-00

AESI WO#: 92500

BOI	RING M-1				SURFACE ELEVATION
	SAMPLES		· · · · · · · · · · · · · · · · · · ·		
NO.	MOISTURE	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
	(BLOWS)		HEADSPACE	0.0	y 49340
					0.0' - 4.0' BROWN SANDY SILT
	DRY 3 5 4 4		0	=	
MS-1	MOIST 3 3 4 11		0	=	4.0' - 8.0' RED/BROWN SILTY FINE/MEDIUM- GRAINED SAND, GREY LENSES
MGW-1	WET 7 6 9 3		1	5.0	GRAINED SAND, GREY LENSES
MGW-1	WET 5 7 13 14		1		8.0' - 9.0' RED/BROWN SILTY MEDIUM-GRAINED
				10.0 	BORING TERMINATED @ 9.0' *SOIL SAMPLE: MS-1 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 7.3' *MO BEDRACK ENCOUNTERED *HEADSPACE = 1 *INSTALLATION OF MAN-1
WATER I	EVEL OBSE	RVAT	IONS	GENER	AL INFORMATION
WHILE I	RILLING	9.	0 STA	RT DAT	E 12/10/91 COMPLETION DATE 12/10/91
DEPTH 1	O WATER	7.	3 DR1	LLING	METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
DEPTH 1	O CAVE-IN	8.	0 LOC	GER: _	Duna M. Hayraves

A D V E N T

ENVIRONMENTAL SERV P.O. Box 246	ICES, INC. MNW-1 (M-1)	DEPTH (FT)	ELEV. FT.MSI
Port Washington, Wisc	onsin 53074	(**)	
	TOP SURFACE CASING TOP RISER CASING GROUND SURFACE	2.0 2.2 0.0	
	SURFACE CASING DIAMETER: 4"		
	TYPE: Locking Steel Standpipe BOTTOM OF SURFACE CASING	1.0	
	BACK FILL MATERIAL	1.0	
	TYPE: Bentonite Crumble (cement 1.0' to surface)		
	RISER CASING		
	DIAMETER: 2.0" TYPE: Schedule 40 PVC		
	TOP OF SEAL	1.0	
	annular seal		
	TYPE: Bentonite Crumble		
<u> </u>	TOP OF FILTER PACK SEAL	3.5	
	FILTER PACK SEAL		
	TYPE: #320 Silica Sand		·.
	TOP OF FILTER PACK	4.0	
: : ←	FILTER PACK	in a second	
	TYPE: Flint Sand		
	TOP OF SCREEN	4.5	
1:17:1	SCREEN		
	DIA.: 2.0" TYPE: Slotted		
1:17:1	OPENINGS WIDTH: 0.010"		
1:[=]:1	TYPE: Schedule 40 PVC		
1:1=1:1	BOTTOM OF SCREEN	9.0	
: :			
	BOTTOM OF CASING	9.5	
→	HOLE DIAMETER: 8"	9.5	

SCALE: AS SHO	MN	PREPARED BY	(: Dena	HARGRAVES	Installation	DATE: 12/10/91
PROJECT NAME:	MCG	LYNN PROPE	? T Y			
AESI JOB#:	925	00	\$ 1.21.00			

D	id Waste Haz Waste & Repair Undergroun		MONITORING WELL CONSTRUCTION Form 4400-113A Rev. 4-90
Facility/Project Name	Local Grid Location of We	11	Well Name
McGlynn Property	fr. 🔒 S.	ft. 🔒 E.	mmw-l
2 4041149 222001204 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Grid Origin Location	ong or	Wis, Unique Well Number DNR Well Number
Type of Well Water Table Observation Well 11	St. Plane fi		Date Well Installed
Piezometer 12	Section Location of Waste		$\frac{12}{mm} \frac{10}{10} \frac{91}{v}$
Distance Well Is From Waste/Source Boundary		34, T. 12 N, R. 1 E.	Well Installed By: (Person's Name and Firm)
17 ft.	Location of Well Relative		Dena M. Hargraver
Is Well A Point of Enforcement Std. Application?	u 📕 Upgradient s	Sidegradient	
☐ Yes ☐ No		Not Known	Advent Environmental Services, I
A. Protective pipe, top elevation _786.96 f	1	1. Cap and lock? 2. Protective cov	
B. Well casing, top elevation _787.21 f	i. MSL	a. Inside dizme	
C. Land surface elevation _785.26 f	t. MSL	b. Length:	_3 .Q ft.
D. Surface seal, bottom ft. MSL or	1 0 ft	c. Material:	Steel 🖪 04
12. USCS classification of soil near screen:		d. Additional	Other D
GP GM GC GW SW G	SP []	1x \	protection?
SM SC ML MH CL C	СН 🗂		Bentonite □ 30
Bedrock 🗆		3. Surface seal:	Concrete 01
13. Sieve analysis attached?	√o Ø	₩ \	Other
14. Drilling method used: Rotary		4. Material between	en well casing and protective pipe:
Hollow Stem Auger			Bentonite 30
Other 🗆	***		Annular space seal
15. Drilling fluid used: Water □ 02 Air □	01		seal: a. Granular Bentonite 3 3 3
Drilling Mud □ 03 None ■	99	5. Annular space	al mud weight Bentonite sand shurry 35
		α -	al mud weight Bentonite slurry 3 1
16. Drilling additives used? ☐ Yes ■ N	√ 0		tonite Bentonite-cement grout 50
Describe		& c	Ft 3 volume added for any of the above
17. Source of water (attach analysis):		f. How install	-
			Tremie pumped 02
N/A	—— │	6. Bentonite seal	Gravity 4 08 a. Bentonite granules 3 33
E. Bentonite seal, top ft. MSL or	10 ft.	XX ,	□ 3/8 in. □ 1/2 in. Bentonite pellets □ 32
De Demonito sout op	\ \$200 \$200 \$1	XI / _	Other □
F. Fine sand, top ft. MSL or	3 5 ft.	7. Fine sand mate a #320 S b. Volume add	erial: Manufacturer, product name & mesh size
		2 #320 S	ilica Sand
G. Filter pack, top ft. MSL or	4.0 ft	b. Volume add	
H. Screen joint, top ft. MSL or	4 < 6	:::1	terial: Manufacturer, product name and mesh size
H. Screen joint, top ft. MSL or	7.2 1.	·.1 /	mm red flint sand
L. Well bottom ft. MSL or	95 ft.	b. Volume ad 9. Well casing:	Flush threaded PVC schedule 40 23
			Flush threaded PVC schedule 80 24
J. Filter pack, bottom ft. MSL or	9.5 ft.		Other 🗖 🥘
		10. Screen materia	
K. Borehole, bottom ft. MSL or	9.5 ft.	a. Screen type	
			Continuous slot 0 0 1
L. Borehole, diameter $-\frac{Q}{2}$. D in.	\ <u></u>	$\overline{}$	Other 🛘 💹
M. O.D. well casing 228 in.	,	b. Manufactur c. Slot size:	er 0. <u>0 1 0</u> in.
_= 5.2. WALL OF _= 2 . Z . Z . III.		d Slotted len	
N. I.D. well casing _ 2 0 _ in.		11. Backfill materi	al (below filter pack): None 📮 14
		P	Other 🗆 🧠
hereby certify that the information on this		ect to the best of my l	nowledge.
Signature 72	Firm	, , , ,	
Dena M. Harrowes	Holvent E	nvironmental S.	ervices for

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

			iste 🔲 Wastewater 🗖 rground Tanks 🖬 Oth			
Facility/Project Name		County Name		Well Name		
McGlynn Property		Richle		mmw-1		
Facility License, Permit or Monitoring Number	-	County Code 53	Wis: Unique Wall N	umber DNR We	all Number	
1. Can this well be purged dry?	☐ Ye	s No	11. Depth to Water	Before Development	After Development	
Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed	■ 4 □ 6	1	(from top of well casing) Date	a8.40ft.		
surged with block and pumped surged with block, bailed and pumped	□ 6 □ 7	2	Time	b.12/12/91 mm/dd/yy	m m d d y y ■ a.m. 7:00 □ p.m.	
compressed air bailed only pumped only	215	0 1	12. Sediment in well			
pumped slowly Other		_	13. Water clarity	Clear 10 Turbid 15	Clear ■ 20 Turbid □ 25	
	_/2 _/L	<u>0</u> min. . <u>≤</u> ft.	·	(Describe) rust colored	(Describe) clear	
5. Inside diameter of well	_2.4	<u> </u>	1			
6. Volume of water in filter pack and well casing	3	2.9 gal.	Fill in if drilling fluid	ds were used and well is a	at solid waste facility;	
		. <u>O</u> gal.	14. Total suspended	mg/l	1	
		. <u>O</u> gal.	solids			
9. Source of water added/A			15. COD	mg/l	mg/l	
10. Analysis performed on water added? (If yes, attach results)	☐ Ye	S No	1		!	
16. Additional comments on development:						
Well developed by: Person's Name and Firm			I hereby certify that of my knowledge.	the above information is t	rue and correct to the best	
Name: Dena M. Hargrave	ς		Signature:	Denes M. T	Vargueros_	
Firm: Advent Environmental		rces.Inc.	Print Initials: D	<u>m //</u>		
			Firm: Alua	nt Enviconment	Securices. I	

V E N

ENVIRONMENTAL SERVICES, INC.

P.O. Box 246

Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

STATE HIGHWAY 80 HUB CITY, WI LOCATION:

PROJECT#: 5042-02-00

AESI WO#: 92500

PO.	RING M-2				SURFACE ELEVATION
ВО	SAMPLES		_		DORTHOD BEBYRTTON
Mo.	MOISTURE	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
	(BLOWS)		HEADSPACE	0.0	
				0.0	0.0' - 0.5' BLACK TOP
×	8 8 8 11		1		0.5' - 4.5' BROWN SANDY SILT
	DRY 8 10 10 8		1		4.5' - 8.0' RED/BROWN SILTY FINE/MEDIUM- GRAINED SAND
MS-2	WET 4 6 8 11		0	5.0	GRAINED SAND
MGN-2	WET 10 11 11 14		0	=======================================	8.0' - 9.0' RED/BROWS COARSE-GRAINED SAND, SOME CRUSHED ROCK
				15.0	
		a 2		20.0	BORING TERMINATED @ 9.0'
		4	· • • • • • • • • • • • • • • • • • • •	25.0	*SOIL SAMPLE: MS-2 5.0' - 7.0' *GROUNDWATER ENCOUNTERED @ 7.0' *NO BEDROCK ENCOUNTERED *HEADSPACE = 1
WATER	Level obse	RVA	PIOMS	GENER	AL INFORMATION
WHILE	DRILLING	8.	.0 ST7	ART DAT	E 12/11/91 COMPLETION DATE 12/11/91
	TO WATER TO CAVE-II				METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1)	GENERAL INFORMATION		(2) FACIL	ITY NAME				
	Well/Drillhole/Borehole Location M - 2	County Richland	Origina	l Well Owner	(If Known)			
	νω 1/4 of SE 1/4 of Sec. 34	⊠ E	Present	Well Owner				
	(If applicable)		Street o	r Route				
	Grid Location Gov't Lot	Grid Number	City S	tate, Zip Cod				
		ft. E. W.	City, 3	iaie, Zip Cou	C			
	Civil Town Name		Facility	Well No. and	or Name (If App	blicable) WI Unique Well No.		
	Town of Hear	rietta	1	m-2				
	Street Address of Well		Reason	For Abandon	ment			
	State Highwa City, Village	w 80		Soil	Test Bo	rings		
	· -		Date of	Abandonmen	t	9		
	Hub City			12/11	[9]			
	LL/DRILLHOLE/BOREHOLE Original Well/Drillhole/Borehole C		I/A Denth to	Water (Feet	7 ~			
(2)	•	onstruction completed on	· ·	•	<u> </u>	Zer O No D Not Applicable		
	(Date) 12/11/91			Piping Remark Removed?		'es ☐ No ☑ Not Applicable		
	Mariania Wall	Construction Report Available?	1	Removed?	님 ;	Yes No Not Applicable Yes No № Not Applicable		
	☐ Monitoring Well ☐ Water Well	Yes No	l .	Left in Place?	· 남호	S No		
	☐ Wall Well ☐ Drillhole	,	If No. E		Ц			
	Borehole	Soil Profile log		- 				
			Was Ca	sing Cut Off I	Below Surface?	☐ Yes ☐ No		
	Construction Type:		3	•	Rise to Surface?	Yes No		
		(Sandpoint) Dug	1		fter 24 Hours?	Yes No		
	Other (Specify)	/	II Yes	, Was Hole R	etopped?	☐ Yes ☐ No		
	F		(5) Required	d Method of P	lacing Sealing M	aterial		
	Formation Type: Unconsolidated Formation	☐ Bedrock	Cond	luctor Pipe-G	ravity 🔲 C	onductor Pipe-Pumped		
		7		p Bailer		Other (Explain)		
		Casing Diameter (ins.)	(6) Sealing			For monitoring wells and		
	(From groundsurface)	· ·	. =	Cement Gro		monitoring well boreholes only		
	Color Dord (6)			l-Cement (Con	ncrete) Grout			
	Casing Depth (ft.) N/A-		_	-Sand Slurry	į	Bentonite Pellets Granular Bentonite		
	Was Well Annular Space Growied?	☐ Yes ☐ No ☐ Unknown	. = .	onite-Sand Sl	1	Bentonite - Cement Grout		
	If Yes, To What Depth?	Feet		ped Bentonite		Deliborate - Carical 210st		
(7)			1	<u> </u>	No. Yards,			
(<i>n</i>)	Sealing Mater	ial Used	From (Ft.)	To (Ft.)	Sacks Sealant or Volume	Mix Ratio or Mud Weight		
		. 5:	Surface	9.	•			
	Bentonite Ho	le Plug	<u> </u>	9,0	1			
		·				·		
			İ					
			1	· 		·		
(8)	Comments:							
			./4.05%					
(9)	Name of Person or Firm Doing Sea		(10)			DUNTY USE ONLY		
	Advent Environmental Signature of Person Doing Work	Services, Inc.	Date	Received/Insp	ected	District/County		
			Rem	ewer/Inspecto	r			
•	Den M. Hangrowe Street or Route	72/18/91 Telephone Number						
	P.O. Box 246	(414) 284-7447	Follo	w-up Necessa	er v			
	City, State, Zip Code							
	Port washington,	OI 53074						

DVEN

ENVIRONMENTAL SERVICES, INC.

P.O. Box 246

Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

STATE HIGHWAY 80 HUB CITY, WI LOCATION:

PROJECT#: 5042-02-00

AESI WO#: 92500

ВС	RING M-3				SURFACE ELEVATION
	Samples				
NO.	MOISTURE	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
	(BLOWS)	, e/ = 1	HEADSPACE		
				0.0	0.0' - 0.5' BLACK TOP
	DRY 3 7 4 4		2		0.5' - 2.0' BR N SANDY SILT
	3/44		2		2.0' - 6.0' RED/BROWN SILTY MEDIUM-GRAINED SAND
MS-3	MOIST 4 8 8 9		1		DANU
1GN - 3	WET 3 4 8 9		1	5.0	6 A1 A A1 DED / DOCKE WEBSTER OF STREET CAMP
	WET	6			6.0' - 8.0' RED/BROWN MEDIUM-GRAINED SAND
	11 15 10 12		1 ***		8.0' - 9.0' RED/BROWN COARSE-GRAINED SAND
			-	15.0	BORING TERMINATED @ 9.0' *SOIL SAMPLE: MS-3 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 6.0' *MO BEDROCK ENCOUNTERED *HEADSPACE = 2
. Usedo	LEVEL ORCE	- I	TORS	25.0	LINDONARION
	LEVEL OBSE Drilling	_	- t		L INFORMATION
	TO WATER	6.			12/11/91 COMPLETION DATE 12/11/91 ETHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
	TO WATER		1	GER:	(1) $2m\Omega$

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1)	GENERAL INFORMATION		ITY NAME		
	Well/Drillhole/Borehole County Location M-3 Richland	Origina	Well Owner	(If Known)	
		Present	Well Owner		
	$V\omega$ 1/4 of SE 1/4 of $Sec. 34$; T. 12 N; R. 1				
	(If applicable) Gov't Lot Grid Number	Street o	r Koule		
	Grid Location Gov't Lot Grid Number	City, St	ate, Zip Cod	e	
	ft. N. S., ft. E. W.	0.0,0	and, any out		
	Civil Town Name	Facility	Well No. and	or Name (If Ap	plicable) WI Unique Well No.
	Town of Henrietta Street Address of Well	,	n - 3		
-	Street Address of Well	Reason	For Abandon		
	State Highway 80		Soil Te	st Boring	<u></u>
	City, Village	Date of	Abandonmen	t	3
	Hub City		12/11/9	7)	
	LL/DRILLHOLE/BOREHOLE INFORMATION	Line Donald	W (F		
(3)	Original Well/Drillhole/Borehole Construction Completed On	r' -	Water (Feet		
	(Date) 12/11/91		Piping Remo	· —	Yes No Not Applicable
	Decree and large and make		Removed?		Yes No Not Applicable
	Monitoring Well Construction Report Available?		temoved? Left in Place?		Yes No No Not Applicable
	☐ Water Well ☐ Yes ☐ No	If No, E			Yes No
	Drillhole Soil Profile log	11110, 2	Apiani		
	Borehole	Was Ca	sing Cut Off I	Below Surface?	☐ Yes ☐ No
	Construction Type:		_	Rise to Surface?	
	☑ Drilled ☐ Driven (Sandpoint) ☐ Dug		_	fter 24 Hours?	☐ Yes ☐ No
	Other (Specify)	ŧ .	Was Hole R		☐ Yes ☐ №
		(5) Paguira	Mathod of D	lacing Sealing N	
	Formation Type:	· · · _ ·			
	Unconsolidated Formation Bedrock	_	luctor Pipe-Gr p Bailer	· =	Conductor Pipe-Pumped
	Total Well Depth (ft.) 9.0 Casing Diameter (ins.) N/H	(6) Sealing	•		Other (Explain) For monitoring wells and
	(From groundsurface)		Cement Gro	int	monitoring well boreholes only
	(Tion groundsurac)	. =	l-Cament (Cor		monitoring wen torenoies only
	Casing Depth (ft.) N/H				Bentonite Pellets
		. —	-Sand Slurry		Granular Bentonite
	Was Well Annular Space Grower? Yes No Unknown	. = .	onite-Sand Sl	urry	Bentonite - Cement Grout
	If Yes, To What Depth? Feet	. —	ped Bentonite	•	i
7				No. Yards.	T
(7)	Sealing Material Used	From (Ft.)	To (Ft.)	Sacks Sealant or Volume	Mix Ratio or Mud Weight
		<u>.</u>	<u> </u>	l or verdine	i
	Bentonite Hole Pluc	Surface	9.0		· ·
	Ø			1	
		<u>[</u>		<u> </u>	<u> </u>
		•			
(8)	Comments:	<u> </u>		<u> </u>	
(-)					
(9)	Name of Person or Firm Doing Sealing Work	(10)	FOR	DNR OR C	OUNTY USE ONLY
` '		Date	Received/Insp		District/County
	Advent Environmental Services, Inc. Signature of Person Doing Work Date Signed	1 1	•		
	Dena M. Hargrowes 12/18/91 Street or Route Telephone Number	Revi	ewer/Inspecto	τ	
	P.O. Box 246 (414) 284-7447 City, State, Zip Code	Follo	w-up Necessa	ary	
	City, State, Zip Code				
	Port Washington, WI 53074				

D V E N

ENVIRONMENTAL SERVICES, INC. P.O. Box 246

Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

STATE HIGHWAY 80 HUB CITY, WI LOCATION:

PROJECT#: 5042-02-00

AESI WOT: 92500

A	RING M-4 SAMPLES				SURFACE ELEVATION
Alexan e					
NO.	MOI STURE	REC	PID LEVELS (PPH)	DEPTH (FT)	DESCRIPTION AND REMARKS
	(BLOWS)	n 77	HEADSPACE	, the Evilla	
				0.0	0.0' - 0.5' BLACK TOP
	DRY 6 6 6 7		0		0.5' - 6.0' TAN/BROWN MEDIUM-GRAINED SANDY SILT
MS-4	MOIST 4 11 7 11		0		And the second s
IGN -4	WET 5 6 8 7		0	5.0	6.0' - 7.0' RED/BROWN MEDIUM\COARSE-GRAINED
	WET 4 8 11 4		0	\equiv	7.0' - 9.0' BROWN\RED COARSE-GRAINED SAND
				10.0	
				15.0	
-					
				20.0	
				20.0	BORING TERMINATED @ 9.0'
					*SOIL SAMPLE: MS-4 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 5.0' *NO BEDROCK ENCOUNTERED *HEADSPACE = 0
				25.0	
WATER I	LEVEL OBSE	RVAT	1		AL INFORMATION
	DRILLING		ì		E 12/11/91 COMPLETION DATE 12/11/91
DEPTH 7	to water	5.	0 DRI	LLING	METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1)	GENERAL INFORMATION	1:/		IIINAME			
	Well/Drillhole/Borehole County	7 0	riginal	Well Owner	(If Known)		
	V caring the control of the caring the carin	ı			•		
		 		Well Owner			
	⊠ E	1 "	esent	Well Owner			
	NW 1/4 of SE 1/4 of Sec. 34; T. 12 N. R. 1 W	i					
	(If applicable)	S	reet or	Route			
	Gov't Lot Grid Number	1					
	Grid Location		ity, St	ate, Zip Cod	e		
	ft. N. S.,ft. E. W.	1					
		 	cility	Wall No. and	lor Nama (IF Am	alicable)	1000 H-2 W-11 No.
	Civil Town Name	1 1	Linty	WEII 140. alia	or Name (If Ap	bucapie)	WI Unique Well No.
	Town of Hangiette			m-4	_		l
	Street Address of Well	R	nossa	For Abandon	ment		
		1		-			
	City Village	<u> </u>		Soil	Test Bo	oring	
	City, Village	D	ate of a	Abandonmen	t	0	
	Hub Cita	1		12/1	lai		
				. ~ / 1	7 11		
	ELL/DRILLHOLE/BOREHÖLE INFORMATION						
(3)	Original Well/Drillhole/Borehole Construction Completed On	(4) D	epth to	Water (Feet	5,0		
	-	D.		D:-: D		Y∝ □ 1	Ab D Not Applicable
	(Date) 12/11/91			Piping Remo		_	No Mot Applicable
	-	Li	ner(s)	Removed?		Y⇔∏ì	Not Applicable
	Monitoring Well Construction Report Available?	Sc	reen R	emoved?	岩 、		Not Applicable
						!!! H:	Not Applicable
	☐ Water Well ☐ Yes ☐ No	•	_	eft in Place?		Yes 🔲 1	No _
	Drillhole Soil Profile log	If.	No, E	xplain			
	Borehole	1					
	L Borelote	1 11	on Con	C OK 1	0-1 C		Vac CIV
				_	Below Surface?	_	Yes No
	Construction Type:	D	id Seal	ing Material	Rise to Surface?	· 🗆 3	Yes ∏ No
	— ·	ם	d Mat	erial Settle At	fter 24 Hours?	\vdash	Yes ∏ No
	Direct (battepena)	1					
	Other (Specify)	1	II I es,	Was Hole R	etoppea?		Yes 🔲 No
	· · · · · · · · · · · · · · · · · · ·	L D		Markadas	lasina Caslina l	/ata-ia1	
	Formation Type:	(2) Ve	done	Memod of P	lacing Sealing N	natenai	
		1 [Cond	luctor Pipe-G	ravity \square	Conductor	Pipe-Pumped
	☐ Unconsolidated Formation ☐ Bedrock	⊨		p Bailer	· =		-
						Other (Exp	
	Total Well Depth (ft.) 9.0 Casing Diameter (ins.) N/A	(6) Se	aling l	Materials		For mo	nitoning wells and
	(From groundsurface)		Neat	Cement Grou	nt	monito	ring well boreholes only
	(11011) Etomorature)		•			шощо	img wen corenoies only
		! ∟		•	ncrete) Grout		
	Casing Depth (ft.) N/H		Conc	rete		! Ben	tonite Pellets
		1 7	Clay	Sand Slurry		╎┌┌┈	nular Bentonite
		=		_		. —	
	Was Well Annular Space Grouted? Yes No Unknown	_		onite-Sand Sl		i 📙 Ben	tonite - Cement Grout
	If Yes, To What Depth? Feet		(Chip	ped Bentonite	;	1	•
-		-				_	
(J)	Cooling Maradal Hand	1_	<u></u>]	.	No. Yards,	14! P	Datio on Mark Weight
	Sealing Material Used	From	(FL)	To (Ft.)	Sacks Sealant	MIX	Ratio or Mud Weight
		:	- 1		or Volume	1	
		Surf	ace	α			
	Bentonite Hole Plug.			9,0		1	•
		1					•
	·	I				1	
		1					
		1	ł	_		1	
		i				1	
		 				 	
		ł				i	•
		<u> </u>				<u> </u>	
(8)	Comments:	-			I		
. •							
(9)	Name of Person or Firm Doing Sealing Work		(10)	FOR	DNR OR C	OUNTY	USE ONLY
			Date	Received/Insp			rict/County
	Advent Environmental Services, Inc. Signature of Person Doing Work Date Signed	4 l	Jau.		~~~		neqcount
-	Dena M. Hausaure 12/18/91		Revie	wer/Inspecto	T.		
	Dena M. Hausaws 12/18/91 Street or Route Telephone Number	1 1					
		1					
	P.O. Box 246 (414) 284-7447 City, State, Zip Code	j	Follo	w-up Necessa	ıry		
	City, State, Zip Code]					
	· · · · · · · · · · · · · · · · · · ·	1	0000000000				
	Port Washington, WI 53074	ł					

ADVENT

ENVIRONMENTAL SERVICES, INC.

P.O. Box 246

Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80 HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORTHS 11 5		SURFACE ELEVATION							
BORING M-5		SURFACE ELEVATION							
SAMPLES NO. MOISTURE REC	PID LEVELS DEPTH (PPM) (FT)	DESCRIPTION AND REMARKS							
(BLOWS)	HEADSPACE	The same states and all the same of the sa							
(220,10)	0.0_	0.0' - 4.0' BROWN SANDY SILT							
DRY 2 3 3 4	0								
MS-5 4 8 5 8	0	4,0' - 8.0' BROWN/RED SILTY FINE\MEDIUM- GRAINED SAND							
MGW-5 WET 4 8 10 7	0 5.0	GRAIRED SARD							
WET 9 17 15	0	8.0' - 9.0' BROWN\RED COARSE-GRAINED SAND							
	10.0 	BORING TERMINATED @ 9.0' *SOIL SAMPLE: MS-5 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 6.0' *NO BEDROCK ENCOUNTERED *HEADSPACE = 0 *INSTALLATION OF MMM-2							
WATER LEVEL OBSERVAT	TIONS GENER	RAL INFORMATION							
WHILE DRILLING 7.	0 START DAT	TE 12/11/91 COMPLETION DATE 12/11/91							
DEPTH TO WATER 6. DEPTH TO CAVE-IN	.0 DRILLING LOGGER: _	METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING							

A D V E N T

ENVIRONMENTAL S	SERVICES, INC. MMX-2 (M-5)	DEPTH	ELEV.
P.O. Box 246 Port Washington, V	Nisconsin 53074	(FT)	FT.MSL
	TOP SURFACE CASING TOP RISER CASING GROUND SURFACE	2.0 2.1 0.0	
	SURFACE CASING DIAMETER: 4" TYPE: Locking Steel Standpipe BOTTOM OF SURFACE CASING BACK FILL MATERIAL TYPE: Bentonite Crumble (cement 1.0 to surface) RISER CASING	1.0	
	DIAMETER: 2.0" TYPE: Schedule 40 PVC TOP OF SEAL AMNULAR SEAL TYPE: Bentonite Crumble TOP OF FILTER PACK SEAL	1.0 3.5	
	TYPE: \$320 Silica Sand TOP OF FILTER PACK FILTER PACK	4.0	
	TYPE: Flint Sand TOP OF SCREEN SCREEN DIA.: 2.0" TYPE: Slotted OPENINGS WIDTH: 0.010"	4.5	
	TYPE: Schedule 40 PVC BOTTOM OF SCREEN BOTTOM OF CASING BOTTOM OF HOLE	9.0 9.5 9.5	
→	HOLE DIAMETER: 8"	3.3	

SCALE: AS SHOWN PREPARED BY: DENA HARGRAVES INSTALLATION DATE:12/11/91
PROJECT NAME: MCGLYNN PROPERTY
AESI JOB#: 92500

D	d Waste□ Haz. Waste□ & Repair□ Underground		MONITORING WELL CON Form 4400-113A	ISTRUCTION Rev. 4-90
	Local Grid Location of We	ll .	Well Name	
McGlynn Property	tr. 🖺 8.	ft. □ E.	mmw-z	
	Grid Origin Location	ong or	Wis, Unique Well Number DNR	Well Number
	St. Plane ft	_	Date Well Installed 12/11	.0 \
	Section Location of Waste/			$\frac{1}{y}\frac{1}{y}$
Distance Well Is From Waste/Source Boundary	vw114 of SE 114 of Sec 3	34, T. 12 N, R. 1 W.	Well Installed By: (Person's Name	e and Firm)
7.5 ft.	Location of Well Relative to		Dena M. Hargraves	<u>. </u>
Is Well A Point of Enforcement Std. Application?	u 🛘 Upgradient s	Sidegradient	l	
		Not Known	Advent Environmental	
A. Protective pipe, top elevation _786.44 ft.		1. Cap and lock? 2. Protective cov		Yes □ No
B. Well casing, top elevation _786.62 ft.	. MSL	a. Inside dizm		_4.0 in.
C. Land surface elevation _784.66 ft.	. MSL	b. Length:		_3.0 ft.
D. Surface seal, bottom ft. MSL or _ 1	O ft.	c. Material:		teel 04
12. USCS classification of soil near screen:				ther 🗆 🥮
	- Leavell	d. Additional	-	Yes ■ No
GP GM GC GW SW		$H \setminus I$		nite 🗆 30
Bedrock □		3. Surface seal:		rete 1 01
13. Sieve analysis attached? Yes N				ther 🗆 🎆
14. Drilling method used: Rotary 5	o 💹 🖁	4. Material between	een well casing and protective pipe:	
Hollow Stern Auger 4	1		Bento	onite 3 0
Other 🗆 🚃	# 		Annular space:	seal 🗖 💹
15. Drilling fluidused: Water □ 02 Air □ 0	, 💹	-		ther 🛛 🊃
Drilling Mud 03 None 9		5. Annular space		
		χ	al mud weight Bentonite sand sh	•
16. Drilling additives used? ☐ Yes ■ No	, I 💹 🖁		al mud weight Bentonite slu ntonite Bentonite-cement g	
			Ft ³ volume added for any of the abo	
Describe	₩ ₩	f. How install		mie 🛮 01
17. Source of water (attach analysis):		.	Tremie pum	ped 🛮 02
N/A			Grav	vity 🔳 08
		6. Bentonite seal	-	_
E. Bentonite seal, top ft. MSL or	Q ft	b. □1/4 in.	□3/8 in. □ 1/2 in. Bentonite pel	
E Eine and Aug. 6 MCI on	\	\$\frac{c}{2} = \frac{c}{2} = \	Od	her 🛛 🧱
F. Fine sand, top ft. MSL or	ž.≥ "` \ \ \		erial: Manufacturer, product name Silica Sand	
G. Filter pack, top ft. MSL or	10 ft.	b. Volume ad	2	
or and of a second seco		m /	uerial: Manufacturer, product name	and mesh size
H. Screen joint, top ft. MSL or	1.5 ft.	::1 /	1.2mm red flint sand	
		b. Volume ad		
I. Well bottom ft. MSL or9	≤ ft <	9. Well casing:	Flush threaded PVC schedule	
A MSI or S			Flush threaded PVC schedule	
J. Filter pack, bottom ft. MSL or G	7.2 II.		Ot	her 🛛 🧱
K. Borehole, bottom ft. MSL or _ 9) 5 ft.	10. Screen materi		22
		a. Screen typ	e: Factory Continuous	
L. Borehole, diameter _ g o in.		3	0	
		b. Manufactur		
M. O.D. well casing 2.35 in.		c. Slot size:		0. <u>0 1 0</u> in.
		d Slotted len	_	_ <i>≦.</i>
N. I.D. well casing $2 \cdot 0$ in.		11. Backfill mater	• •	one 1 14
I horoby partify that the information as this	form in true and an-	oot to the best of and		ther 🔲 💆
I hereby certify that the information on this Signature	Firm	ect to the best of my i	rnowieoge.	
	01 4 5	100		

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Firm:

Route to: Solid Waste Haz. Waste Wastewater Env. Response & Repair Underground Tanks Other _ _ County Name Well Name Facility/Project Name Property Richland McGlynn mmw-2 Wis Unique Well Number Facility License, Permit or Monitoring Number County Code DNR Well Number 53 Before Development □ Yes ■ No 1. Can this well be purged dry? After Development 11. Depth to Water (from top of 8.3 Oft. 2. Well development method well casing) surged with bailer and bailed 41 surged with bailer and pumped 61 Date surged with block and bailed 42 surged with block and pumped 62 surged with block, bailed and pumped 70 c. <u>4</u>:00 p.m. compressed air Time <u>フ:00</u> p.m. 20 bailed only 10 12. Sediment in well 51 6.2 inches $_{\circ}$. \bot inches pumped only bottom pumped slowly 13. Water clarity Other Clear 10 Clear ■ 20 Turbid 15 Turbid □ 25 3. Time spent developing well (Describe) (Describe) brown to rust clear _________ft. 4. Depth of well (from top of well casisng) colored 5. Inside diameter of well 6. Volume of water in filter pack and well casing _<u>4</u>.5gal. Fill in if drilling fluids were used and well is at solid waste facility: 25.0 gal. 7. Volume of water removed from well 14. Total suspended ____ mg/l 8. Volume of water added (if any) ___O.6 gal. solids 9. Source of water added N/A 15. COD mg/l ☐ Yes 10. Analysis performed on water added? ■ No (If yes, attach results) NIA 16. Additional comments on development: Well developed by: Person's Name and Firm I hereby certify that the above information is true and correct to the best of my knowledge. Signature: Dena M. Hargraves Name:

Print Initials: D m H

Advent Environmental Services, Inc.

Firm:

Adrent Environmental Services, Inc.

ADVENT

ENVIRONMENTAL SERVICES, INC.

P.O. Box 246

Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80 HUB CITY, WI

- Land

PROJECT#: 5042-02-00

AESI WO#: 92500

				•	PERI MON. 35200
ВС	RING M-6				SURFACE ELEVATION
	SAMPLES				
NO.	MOISTURE	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
	(BLOWS)		HEADSPACE		
				0.0	0.0' - 2.0' BROWN SANDY SILT
	DRY 2 3 6 6		0	=	2.0' - 3.0' BROWN/RED SANDY SILT
	MOIST			, . =	3.0' - 4.5' BRW/RED SILTY FG/M-GRAINED SAND
MS-6	12 16		0	5.0	4.5' - 7.0' BROWN/RED SILTY MEDIUM- GRAINED SAND
MGW-6	WET 7 9 6 5		0	3.0	GRAINED OARD
	WET 6 10 11 15		0	=	7.0' - 9.0' BROWN\RED COARSE-GRAINED SAND WITH SOME ROCK
				15.0	
				20.0	BORING TERMINATED @ 9.0'
				25.0	*SOIL SAMPLE: MS-6 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 5.0' *NO BEDROCK ENCOUNTERED *HEADSPACE = 0 *INSTALLATION OF MMW-3
WATER	LEVEL OBSE	RVA	TIONS	GENE	RAL INFORMATION
WHILE	DRILLING	6.	0 87	ART DAT	TE 12/11/91 COMPLETION DATE 12/11/91
DEPTH	TO WATER	5.	O DRI	LLING	METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
DEPTH	TO CAVE-IN	ſ	roc	Ger: _	Dana M. Hargrews

ADVENT

$\underline{\underline{\mathcal{A}}}$	ע		<u> </u>	<u>·</u>		
P.O. Bo	x 246		RVICES, INC.	им-3 (N-6)	DEPTH (FT)	elev. Ft.msl
Port Wa	ashingto	n, Wi	sconsin 53074		(/	
		T+-F		TOP SURFACE CASING TOP RISER CASING GROUND SURFACE	2.0 2.3 0.0	
∳	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	•	SURFACE CASING DIAMETER: 4" TYPE: Locking Steel Standpipe BOTTOM OF SURFACE CASING BACK FILL MATERIAL	1.0	
				TYPE: Bentonite Crumble (cement 1.0' to surface)		
	~ ←			RISER CASING DIAMETER: 2.0"		·
	-	-		TYPE: Schedule 40 PVC		
				TOP OF SEAL	1.0	
				AMNULAR SEAL	1.0	
		÷		TYPE: Bentonite Crumble		
		17,		TOP OF FILTER PACK SEAL	3.5	
				FILTER PACK SEAL	3.3	
	}	}	· · · · · · · · · · · · · · · · · · ·	TYPE: #320 Silica Sand		
A ()	·\	}		TOP OF FILTER PACK	4.0	r _{me} er
	:	: ₊		FILTER PACK		
	:	:		TYPE: Flint Sand		
		<u> </u>		<u> </u>	4.5	
				TOP OF SCREEN SCREEN	4.5	
	 : =	-		DIA.: 2.0" TYPE: Slotted		
	1: =	1:1		OPENINGS WIDTH: 0.010"		
	1: 二	1:1		TYPE: Schedule 40 PVC		
					0.0	
		$\left[\cdot \right]$		BOTTOM OF SCREEN	9.0	
	: L_	! 		BOTTOM OF CASING	9.5	
	L		·- · · · · · · · · · · · · · · · · · ·	BOTTOM OF HOLE	9.5	1
→		ļ		HOLE DIAMETER: 8"		
.					~~~~	

SCALE: AS SHOWN PREPARED BY: DENA HARGRAVES INSTALLATION DATE:12/11/91
PROJECT NAME: MCGLYNN PROPERTY

AESI JOB#:

92500

D	lid Waste Haz. Waste		MONITORING WELL CONSTI	RUCTION Rev. 4-90
Facility/Project Name	e & Repair Underground Local Grid Location of W	ell	Well Name	
McGlynn Property	fr DS.	ft. DE.	$mm\omega - 3$	
Facility License, Permit or Monitoring Number	Grid Origin Location		Wis Unique Wall Number DNR We	ll Number
	Lat	Longor		
Type of Well Water Table Observation Well 11	St. Plane	_	Date Well Installed	> /
Piezometer 12	Section Location of Waste		$\frac{1}{m} \frac{2}{m} \frac{1}{d} \frac{1}{d} \frac{1}{d} \frac{1}{d}$	7.1
Distance Well Is From Waste/Source Boundary	1	· 4 	Well Installed By: (Person's Name an	d Firm)
90 ft.	Nw1/4 of SE 1/4 of Sec. Location of Well Relative		Dena M. Hargraves	
Is Well A Point of Enforcement Std. Application?		s Sidegradient		
☐ Yes ☐ No	d Downgradient	-	Advent Environmental	Servico, In
A. Protective pipe, top elevation $-78 \le .82$		1. Cap and lock?	■ Yes	□ No
• • •		2. Protective cov	er pipe:	
B. Well casing, top elevation -786.00	II. MSL	a. Inside diame	eter:	_4.Qin
C. Land surface elevation _ 7 8 3 .85	ft MSL	b. Length:		_3.0ft
		c. Material:	Steel	■ 04
D. Surface seal, bottom ft. MSL or _	<u> </u>		Other	
12. USCS classification of soil near screen:		d. Additional	protection?	. ■ No
GP GM GC GW SW G	SP 🗆 📉	If yes, descr		_
	СН 🗆 🗎		Bentonite	30
Bedrock □		3. Surface seal:	Concrete	01
13. Sieve analysis attached?	No 💮		Other	
14. Drilling method used: Rotary	50	4. Material between	en well casing and protective pipe:	— *****
Hollow Stem Auger			Bentonite	2 ■ 30
Other 🗆			Annular space seal	
			Other	
15. Drilling fluid used: Water □ 02 Air □	01	5. Annular space		- *******
Drilling Mud □ 03 None ■	99	-	al mud weight Bentonite-sand shurry	
		m	al mud weight Bentonite slurry	=
16. Drilling additives used?	No 🔛		tonite Bentonite-cement grout	
			Ft 3 volume added for any of the above	_ 50
Describe	I 🟻 🖼	f. How install		01
17. Source of water (attach analysis):		1. 110 22	Tremie pumped	
N/A.			Gravity	
		6. Bentonite seal:		_ 00
E. Bentonite seal, top ft. MSL or	10ft.	***************************************	□3/8 in. □ 1/2 in. Bentonite pellets	
	→ ₩		Other	— 20000
F. Fine sand, top ft. MSL or	3 5 ft.	7. Fine sand mate	erial: Manufacturer, product name & n	
	3 <u>S</u> ft. 4 <u>0</u> ft.	#320	Silica Sand	****
G. Filter pack, top ft. MSL or	40 ft.	b. Volume ack		— ====
	·-·-	7 / T	terial: Manufacturer, product name and	lmesh size
H. Screen joint, top ft. MSL or	4 5 ft.	1:::1	12mm red flint sand	_ 22
In octoor joint of		b. Volume act		_ 22
I. Well bottom ft. MSL or _	9 < ft.	9. Well casing:	Flush threaded PVC schedule 40	23
	/ [[編		Flush threaded PVC schedule 80	_
J. Filter pack, bottom ft. MSL or	95 ft.		Other	
		10. Screen materia		
K. Borehole, bottom ft. MSL or	9 5 ft.	a. Screen type		- 22 ■ 11
	·-·- \		Continuous slot	
L. Borehole, diameter _ & o in.		2 (Other	
L. Borenole, diameter _ & O in.		b. Manufacture		
M. O.D. well casing 228 in.		c. Slot size:). ⊇1 Q in.
M. O.D. well casing 2 ≥ ≥ in.		d Slotted leng		_≦.oft.
N. I.D. well casing 200 in.		\		1 4
N. I.D. well casing _2.00 in.		11, Dackiiii iimteri	Other	******
I hereby certify that the information on thi	s form is true and ser	ract to the best of my !		
Signature	Firm	rect to the best of my k	illowieuge.	
Denn M Hargewes	1	Environmental S	Sacreta Tar	
Please complete both sides of this form and return to	the appropriate DNR office	listed at the top of this form	as required by chs. 144, 147 and 160, W	Vis. Stats
and ch. NR 141, Wis. Ad. Code. In accordance with	ch.144, Wis Stats., failure	to file this form may result in	a forfeiture of not less than \$10, nor me	ore than
\$5000 for each day of violation. In accordance with	ch. 147, Wis. Stats., failure	to file this form may result in	a forfeiture of not more than \$10,000 f	for each

-day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Firm:

MONITORING WELL DEVELOPMENT Rev. 4-90

Department of Natural Resources Form 4400-113B Route to: Solid Waste | Haz. Waste | Wastewater | Env. Response & Repair Underground Tanks Other L Well Name County Name Facility/Project Name Richland mmw-3 Propertos Mc 6 lynn Wis Unique Wall Number Facility License, Permit or Monitoring Number County Code DARWAY DINOMBER 53 □ Yes . No Before Development After Development 1. Can this well be purged dry? 11. Depth to Water (from top of 7.65 ft 7.65 ft 2. Well development method well casing) surged with bailer and bailed 41 61 surged with bailer and pumped 42 Date surged with block and bailed surged with block and pumped 62 surged with block, bailed and pumped 70 c. <u>6:00</u> ∎ p.m. Time compressed air 20 bailed only 10 12. Sediment in well $\underline{\bigcirc}$. $\underline{\bigcirc}$ inches pumped only 51 $\underline{\hspace{0.1cm}}$ $\underline{\hspace{0.1cm}}$ $\underline{\hspace{0.1cm}}$ inches bottom pumped slowly 50 13. Water clarity Other Clear 10 Clear ■ 20 Turbid 15 Turbid 25 (Describe) (Describe) 3. Time spent developing well /20 min. rust colored clear _<u>|| || .5</u>ft 4. Depth of well (from top of well casisng) <u> 2.00 in.</u> 5. Inside diameter of well 6. Volume of water in filter pack and well _5 . 2gal. casing Fill in if drilling fluids were used and well is at solid waste facility: <u>45.0gal.</u> 7. Volume of water removed from well 14. Total suspended solids 8. Volume of water added (if any) NA 15. COD 9. Source of water added mg/l☐ Yes 10. Analysis performed on water added? ■ No NIA (If yes, attach results) 16. Additional comments on development: I hereby certify that the above information is true and correct to the best of my knowledge. Well developed by: Person's Name and Firm Signature: Dena M. Hargraves Name:

Print Initials: D m <u>H</u>

Advent Environmental Services, Inc.

Firm:

Advent Environmental Services, Inc.

APPENDIX F CHAIN OF CUSTODY AND LABORATORY DOCUMENTATION



CHAIN OF CUSTODY RECORD

PAGE 1 01 2

Use Black Ink Only, Press Hard

ENVIRONMENTAL SERVICES, INC. P.O. BOX 246, PORT WASHINGTON, WI 53074												N/N/N/N/N/N/ Filtered (Yes/No)	
	284-74				ers							K/	Preserved (Code)
PROJ. NO			ГИАМЕ	NAME							4/	1	Refrigerated (Yes/No)
92500	'	Mc	Elynn Prog	perte	of Containers					14	16/	رجا	Sample type (Grab/Composite)
SAMPLERS: (Signa	ature)				ber c			_	/50\	/50/	50>	50°	Sample sources (WW, GW, DW, other)
Den	- 	m	Luciones		Total Number		,		7	7			
AESI ·	Yr <u>91</u>	.			otal	,	\g	3	7/8)	\nearrow_{ι}			A - None D - NaOH B - HNO3 E - HCL C - H ₂ SO4 F -
Lab No.	Date	Time	Sample Sta	ation ID	۴		Z	7	\angle	357		Ž	Preservation Code: A - None D - NaOH B - HNO3 E - HCL C - H ₂ SO4 F Comments:
21044	12/16	4,40	ms-1 (3	-5)	3	X	X	X	X	人	又		
21045	12/11	8:00	ms-2 (s	<u>-7)</u>	3	X	X	X	X	X	X		
21046	12/11	8:45	MS-3 (3-5)	3	X	<u>X</u>	人	X	又	X		
21047	12/1(9:45	m5-4 (3-5)			X	X	X	X	X	\times		
21048	12/11	10150	ms-5 (3-5)			X	X	X	X	X	\times		
21049	12/11	12:00	m5-6 (3-5)	3	X	X	X	X	X	X		<u></u>
											·		
										<u> </u>			
Relinquished by: (Sig			Date / Time	Received by: (Signature)				D	ate /	Tim	θ		Reporto: Dena Hargraves
Dona MHan			12/14/91 1:30	B 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-								Name
Relinquished by: (Sig	/		Date / Time	Received by: (Signature)						Tim	θ ?; <i>∞</i>		Street
Mecha / Ke			12/17/A 10/44 Date / Time	, ,	v: /S	iaaati	_	/ ~	//	70	-,		City State Zip Phone no. ()
Relinquished by: (Sig	IIaluie	")	Date / Time	Received for Laboratory b	y. (S	ynau	110)						Fax no. ()
Remarks:			1									\forall	
			•										Receipt pH
				• .									Receipt temp
												- 1	

DAVY LABORATORIES

115 South 6th Street P.O. Box 2076 La Crosse WI 54602-2076 (608) 782-3130 FAX: (608) 784-6611 LABORATORIES

Division of Davy Engineering Co.

Advent Environmental Services, Inc. P.O. Box 246
Port Washington, Wisconsin 53074

January 14, 1992

Client No. 11797-B Project No. 92500

Attn: Dena Hargraves

INTRODUCTION:

Six soil samples were received on December 17, 1991. The client requested that the samples be analyzed for Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Volatile Organic Compounds (VOC), Polynuclear Aromatic Hydrocarbons (PAH) and total lead and total solids.

SAMPLE IDENTIFICATION:

The samples were collected on December 10 and 11, 1991. The samples were collected by the Dena Hargraves at the McGlynn Property under Project No. 92500. The samples were delivered to the laboratory on December 17, 1991 by the client. Upon arrival at the laboratory, the samples were given the following identification numbers:

DAVY LAB NO.	SAMPLE SITE
21044	MS-1
21045	MS-2
21046	MS-3
21047	MS-4
21048	MS-5
21049	MS-6

METHODOLOGY:

The samples were analyzed according to the method outlined in the Leaking Underground Fuel Tank Manual published by the State of California. The Wisconsin Department of Natural Resources references this method for the analysis of Total Petroleum Hydrocarbons (TPH) either as Gasoline, Diesel, or Fuel Oil.

DIESEL RANGE ORGANICS (DRO) -

The sample for the determination of Diesel Range Organics (DRO) was extracted three times with carbon disulfide. The extracts were then dried and concentrated to 1-ml with carbon disulfide. A portion of the samples were injected into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas obtained were compared with known standards.

GASOLINE RANGE ORGANICS (GRO) -

The samples were analyzed for Gasoline Range Organics (GRO) by extracting a portion of the sample with methanol. A portion of the extract was then injected into 5-ml of organic free water and purged for 11-min. using helium as the purge gas.

Following the purge cycle, each sample was desorbed into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas were compared with known standards.

DAVY LABORATORIES

115 South 6th Street P.O. Box 2076 La Crosse WI 54602-2076 (608) 782-3130 FAX: (608) 784-6611



Page 2
Advent Environmental Services, Inc.
January 14, 1992

VOLATILE ORGANIC COMPOUNDS (VOC) -

Volatile Organic Compounds were determined on each sample using EPA SW 846 Method 8021 for the analysis. The samples were extracted with methanol and a portion of the extract was injected into 5-ml of organic free water. Each sample was then purged for eleven minutes using helium as the purge gas.

Each sample was then desorbed to a Tracor Model 540 GC equipped with a Hall/PID detector in series. Quantitation was based on the response of standards through the use of linear regression curves.

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) -

The samples were analyzed for PAH following EPA Method 610. A HPLC equipped with an ultraviolet and fluroescence detector in series was used for the analysis.

INORGANIC ANALYSIS -

The samples were analyzed for total lead and total solids based on EPA Methodology as given in SW-846. The samples were extracted according to the method. Following extraction, each sample was then digested in a strong acid solution. Following digestion, the samples were analyzed for lead using a Perkin-Emer Model 2100 AA. The response of the analyte in the sample was compared to a standard curve. Quantitation was based on a linear regression analysis.

RESULTS:

The results for the VOC and PAH analyses are given in Table 1 and 2, respectively. The results of the analyses for GRO, DRO, total lead, and total solids in the samples are given below:

SAMPLE NO.	GRO (ppm)	DRO (ppm)	TOTAL SOLIDS(%)	TOTAL LEAD(ppm)	DATE EXTRACTED	DATE ANALYZED
21044-MS-1	ND	ND	81.1	8.01	121991	010692
21045-MS-2	ND	ND	86.2	5.34	121891	010692
21046-MS-3	ND	ND	89.7	15.9	121991	010992
21047-MS-4	ND	ND	88.3	4.76	121991	010792
21048-MS-5	ND	ND	87.5	3.31	121991	010792
21049-MS-6	ND	ND	89.4	5.31	121991	010792
	cans "less than" culated on a "dry v	weight basis"				
Minimum Detection Limit - WATER:				= 0.0342 ppm = 0.5 ppm	SOIL:	GRO = 1 ppm DRO = 1 ppm

Submitted by:

DAVY LABORATORIES

The laboratory analyses reported were determined in accordance with current methodology. The results are only representative of the samples received; conditions can be expected to vary at different times and under different sampling conditions.

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: Sample:	11797-B MS-1	Sample No.: Date Analyzed:	21044 010792	
		Result	LOD(a)	ГООФ
Benzene		ND	0.001	0.007
Bromobenzene		ND	0.001	0.007
Bromochloromet		ND	0.001	0.007
Bromodichlorom	ethane	ND	0.001	0.007 0.007
Bromoform		ND ND	0.001 0.069	0.007
Bromomethane		ND ND	0.009	0.463
n-Butylbenzene	_	ND	0.001	0.007
sec-Butyl benzene tert-butyl benzene		ND	0.004	0.028
Carbon Tetrachlo		ND	0.001	0.007
Chlorobenzene	ildo	ND	0.001	0.007
Chloroethane		ND	0.006	0.042
Chloroform		ND	0.001	0.001
Chloromethane		ND	0.002	0.014
2-Chlorotoluene		ND	0.001	0.007
4-Chlorotoluene		ND	0.001	0.007
1,2-Dibromo-3-C	• •	ND	0.188	1.32 0.133
Dibromochlorom		ND ND	0.019 0.050	0.133
1,2-Dibromoetha	== =	ND ND	0.138	0.330
Dibromomethane 1,2-Dichlorobenz		ND -	0.003	0.021
1,3-Dichlorobenz		ND	0.001	0.007
1,4-Dichlorobenz		ND	0.001	0.007
Dichlorodifluoron		ND	0.003	0.021
1,1-Dichloroetha		ND	0.004	0.028
1,2-Dichloroetha		ND	0.002	0.014
1,1-Dichloroethe		ND	0.004	0.028
cis-1,2-Dichloroe	ethene	ND	0.001	0.007
trans-1,2-Dichlor		ND	0.004	0.028
Dichloromethane		ND	0.001	0.007
1,2-Dichloroprop		ND	0.002	0.014
1,3-Dichloroprop		ND ND	0.003 0.001	0.021 0.007
2,2-Dichloroprop		ND ND	0.001	0.007
1,1-Dichloropropethyl Benzene	Jene	ND	0.001	0.007
Hexachlorobutadi	ene	ND	0.001	0.007
Isopropyl Benzer		ND	0.003	0.021
p-Isopropyl tolue		ND	0.002	0.014
Methyl-tert-butyl		ND	0.002	0.014
Naphthalene		ND	0.004	0.028
n-Propyl benzene	;	ND	0.001	0.007
Styrene		ND	0.001	0.007
1,1,1,2-Tetrachlo		ND	0.001	0.007
1,1,2,2-Tetrachlo		ND	0.001	0.007
Tetrachloroethen	e	ND ND	0.003 0.001	0.021 0.007
Toluene 1,2,3-Trichlorobe		ND ND	0.001	0.007
1,2,4-Trichlorobe		ND	0.002	0.014
1,1,1-Trichloroet		ND	0.002	0.014
1,1,2-Trichloroet		ND	0.004	0.016
Trichloroethene		ND	0.001	0.007
Trichlorofluorom	ethane	ND	0.002	0.014
1,2,3-Trichlorop	ropane	ND	0.025	0.175
1,3,5 Trimethyl b		ND	0.002	0.014
1,2,4-Trimethylb	enzene	ND	0.001	0.007
Vinyl Chloride		ND	0.003	0.021
m/p-Xylene		ND ND	0.001	0.007
o-Xylene		ND	0.002	0.014
NOTES.				

a - LOD = Limit of Detection

b - LOQ = Limit of Quantitation

c - ND = Not Detected

d - BQL = Below Detection Limit

	nple No.: 21045 e Analyzed: 010792
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	Result	LOD(a)	<u>100(P)</u>
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028 0.007
Carbon Tetrachloride	ND	0.001 0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND ND	0.000	0.042
Chlorosophus	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.188	1.32
1,2-Dibromo-3-Chloropropane Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.003	0.007
1.4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: 11797-B Sample: MS-3	Sample No.: Date Analyzed:	21046 010 7 92	
Sample. Mo-3	2410 : 1114192201		
	<u>Result</u>	LOD(a)	<u>1000</u>
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND ND	0.001	0.007 0.007
Bromoform	ND ND	0.001 0.069	0.483
Bromomethane n-Butylbenzene	ND ND	0.003	0.403
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND ND	0.001	0.007 0.007
1,4-Dichlorobenzene Dichlorodifluoromethane	ND ND	0.001 0.003	0.007
1,1-Dichloroethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002 0.002	0.014
Methyl-tert-butyl-ether	ND ND	0.002	0.014 0.028
Naphthalene	ND	0.004	0.028
n-Propyl benzene Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014
NOTES:			

a - LOD = Limit of Detection

b - LOQ = Limit of Quantitation

c - ND = Not Detected

d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: Sample:	11797-B MS-4	Sample No.: Date Analyzed:	21047 010792	
		Result	LOD(a)	TOO(P)
Benzene		ND	0.001	0.007
Bromobenzene		ND	0.001	0.007
Bromochloromet	hane	ND	0.001	0.007
Bromodichlorom		ND	0.001	0.007
Bromoform		ND	0.001	0.007
Bromomethane		ND	0.069	0.483
n-Butylbenzene		ND	0.001	0.007
sec-Butyl benzen		ND	0.001	0.007
tert-butyl benzen		ND .	0.004 0.001	0.028 0.007
Carbon Tetrachlo	ride	ND ND	0.001	0.007
Chlorobenzene Chloroethane		ND	0.006	0.042
Chloroform		ND	0.001	0.001
Chloromethane		ND	0.002	0.014
2-Chlorotoluene		ND	0.001	0.007
4-Chlorotoluene		ND	0.001	0.007
1,2-Dibromo-3-C	Chloropropane	ND	0.188	1.32
Dibromochlorom		ND	0.019	0.133
2-Dibromoetha	ne	ND	0.050	0.350
Dibromomethane	:	ND	0.138	0.966
1,2-Dichlorobena		ND	0.003	0.021
■,3-Dichlorobena		ND	0.001	0.007
■,4-Dichlorobenz		ND	0.001	0.007
Dichlorodifluoro		ND	0.003	0.021 0.028
₫,1-Dichloroetha		ND ND	0.004	0.028
1,2-Dichloroetha		ND ND	0.002 0.004	0.014
■, 1-Dichloroethe cis-1,2-Dichloroe		ND	0.004	0.023
trans-1,2-Dichlor		ND	0.004	0.028
Dichloromethane		ND	0.001	0.007
1,2-Dichloroprop		ND	0.002	0.014
1,3-Dichloroprop		ND	0.003	0.021
2,2-Dichloroprop		ND	0.001	0.007
1,1-Dichloroprop	oene	ND	0.001	0.007
Ethyl Benzene		ND	0.001	0.007
Hexachlorobutad		ND	0.001	0.007
Isopropyl Benzer		ND	0.003	0.021 0.014
p-Isopropyl tolue		ND ND	0.002 0.002	0.014
Methyl-tert-butyl Naphthalene	i-einer	ND ND	0.002	0.014
p-Propyl benzene		ND	0.004	0.023
tyrene	-	ND	0.001	0.007
_,1,1,2-Tetrachlo	proethane.	ND	0.001	0.007
1,1,2,2-Tetrachlo		ND	0.001	0.007
Tetrachloroethen		ND	0.003	0.021
Toluene		ND	0.001	0.007
_,2,3-Trichlorob	enzene	ND	0.002	0.014
1,2,4-Trichlorob	enzene	ND	0.002	0.014
1,1,1-Trichloroe		ND	0.002	0.014
,1,2-Trichloroe	thane	ND	0.004	0.016
richloroethene	_	ND	0.001	0.007
Trichlorofluorom		ND ND	0.002	0.014
1,2,3-Trichlorop		ND ND	0.025	0.175
,3,5 Trimethyl		ND ND	0.002 0.001	0.014 0.007
,2,4-Trimethylb Vinyl Chloride	DEIIZENE	ND ND	0.001	0.007
n√p-Xylene		ND	0.003	0.021
-Xylene		ND	0.001	0.014
-1tylone				
NOTES:				
100	45 1 1 7 00	1 :: CO	ND-	Not Detect

a - LOD = Limit of Detection

b - LOQ = Limit of Quantitation c - ND = Not Detected

Table 1 - Volatile Organic Compounds (mg/kg)

			_	
Client No.:	11797-B	Sample No.:	21048	
Sample:	MS-5	Date Analyzed:	010792	
•				• • • • • • • • • • • • • • • • • • • •
		Result	LOD(a)	<u>100(b)</u>
Benzene		ND	0.001	0.007
Bromobenzene		ND	0.001	0.007
Bromochlorometh	nane	ND	0.001	0.007
Bromodichlorome	ethane	ND	0.001	0.007
Bromoform		ND	0.001	0.007
Bromomethane		ND	0.069	0.483
n-Butylbenzene		ND	0.001	0.007
sec-Butyl benzene		ND	0.001	0.007
tert-butyl benzene		ND	0.004	0.028
Carbon Tetrachlo		ND	0.001	0.007
Chlorobenzene		ND	0.001	0.007
Chloroethane		ND	0.006	0.042
Chloroform		ND	0.001	0.001
Chloromethane		ND	0.002	0.014
2-Chlorotoluene		ND	0.001	0.007
4-Chlorotoluene		ND	0.001	0.007
1,2-Dibromo-3-C	hloropropane	ND	0.188	1.32
Dibromochlorom		ND	0.019	0.133
1,2-Dibromoetha		ND	0.050	0.350
Dibromomethane	110	ND	0.138	0.966
1,2-Dichlorobenz	ene	ND	0.003	0.021
1,3-Dichlorobenz		ND	0.001	0.007
1.4-Dichlorobenz		ND	0.001	0.007
Dichlorodifluoror		ND	0.003	0.021
1,1-Dichloroetha		ND	0.004	0.028
1,2-Dichloroetha		ND	0.002	0.014
1,1-Dichloroethe		ND	0.004	0.028
cis-1,2-Dichloroe		ND	0.001	0.007
		ND	0.004	0.028
trans-1,2-Dichlor Dichloromethane		ND	0.001	0.007
		ND	0.002	0.014
1,2-Dichloroprop		ND	0.002	0.021
1,3-Dichloroprop		ND	0.001	0.007
2,2-Dichloroprop		ND	0.001	0.007
1,1-Dichloroprop	ene ,	ND	0.001	0.007
Ethyl Benzene		ND	0.001	0.007
Hexachlorobutadi		ND	0.003	0.021
Isopropyl Benzen		ND	0.003	0.014
p-Isopropyl tolue		ND	0.002	0.014
Methyl-tert-butyl	-etner	ND	0.002	0.014
Naphthalene		ND	0.004	0.023
_n-Propyl benzene		ND	0.001	0.007
Styrene	•			0.007
1,1,1,2-Tetrachlo		ND .	0.001	
1,1,2,2-Tetrachlo		ND	0.001	0.007
Tetrachloroethene	2	ND	0.003	0.021
Toluene		ND	0.001	0.007
1,2,3-Trichlorobe		ND	0.002	0.014
1,2,4-Trichlorobe		ND	0.002	0.014
1,1,1-Trichloroet		ND	0.002	0.014
1,1,2-Trichloroet	hane	ND	0.004	0.016
Trichloroethene		ND	0.001	0.007
Trichlorofluorom		ND	0.002	0.014
1,2,3-Trichloropi		ND	0.025	0.175
1,3,5 Trimethyl b		ND	0.002	0.014
1,2,4-Trimethylb	enzene	ND	0.001	0.007
Vinyl Chloride		ND	0.003	0.021
m/p-Xylene		ND	0.001	0.007
-o-Xylene		ND	0.002	0.014
NOTE:				

a - LOD = Limit of Detection

b - LOQ = Limit of Quantitation c - ND = Not Detected

d - BQL = Below Detection Limit

Client No.: Sample:	11797-B MS-6	Sample No.: Date Analyzed:	21049 010792	
		Result	LOD(a)	LOO(b)
Benzene		ND	0.001	0.007
Bromobenzene		ND	0.001	0.007
Bromochlorome	ethane	ND	0.001	0.007
Bromodichloror	nethane	ND	0.001	0.007
Bromoform		ND	0.001	0.007
Bromomethane		ND	0.069	0.483
n-Butylbenzene		ND	0.001	0.007
sec-Butyl benze		ND	0.001	0.007
tert-butyl benze Carbon Tetrachl		ND ND	0.004 0.001	0.028
Chlorobenzene	oride	ND	0.001	0.007 0.007
Chloroethane		ND	0.001	0.042
Chloroform		ND	0.001	0.001
Chloromethane		ND	0.002	0.014
2-Chlorotoluene	•	ND	0.001	0.007
4-Chlorotoluene	:	ND	0.001	0.007
1,2-Dibromo-3-	Chloropropane	ND	0.188	1.32
Dibromochloron		ND	0.019	0.133
1,2-Dibromoeth		ND	0.050	0.350
Dibromomethan	-	ND	0.138	0.966
1,2-Dichloroben		ND	0.003	0.021
1,3-Dichloroben		ND	0.001	0.007
1,4-Dichloroben		ND	0.001	0.007
Dichlorodifluoro		ND	0.003	0.021
1,1-Dichloroeth		ND ND	0.004	0.028
1,1-Dichloroeth		ND ND	0.002 0.004	0.014 0.028
cis-1,2-Dichloro		ND	0.004	0.028
trans-1,2-Dichlo		ND	0.001	0.007
Dichloromethan		ND	0.001	0.023
1,2-Dichloropro	pane	ND	0.002	0.014
1,3-Dichloropro		ND	0.003	0.021
2,2-Dichloropro	pane	ND	0.001	0.007
1,1-Dichloropro	pene	ND	0.001	0.007
Ethyl Benzene		ND	0.001	0.007
Hexachlorobutad		ND	0.001	0.007
Isopropyl Benzer		ND	0.003	0.021
p-Isopropyl tolu		ND	0.002	0.014
Methyl-tert-buty Naphthalene	i-etner	ND	0.002	0.014
n-Propyl benzene	•	ND ND	0.004 0.001	0.028
Styrene	5	ND	0.001	0.007 0.007
1,1,1,2-Tetrachle	oroethane	ND	0.001	0.007
1,1,2,2-Tetrachle		ND	0.001	0.007
Tetrachloroethen		ND	0.003	0.021
Toluene		ND	0.001	0.007
1,2,3-Trichlorob	enzene	ND	0.002	0.014
1,2,4-Trichlorob		ND	0.002	0.014
1,1,1-Trichloroet		ND	0.002	0.014
1,1,2-Trichloroe	thane	ND	0.004	0.016
Trichloroethene		ND	0.001	0.007
Trichlorofluorom		ND	0.002	0.014
1,2,3-Trichlorop		ND	0.025	0.175
1,3,5 Trimethyl b		ND	0.002	0.014
1,2,4-Trimethylb	enzene	ND	0.001	0.007
Vinyl Chloride m/p-Xylene		ND ND	0.003	0.021
o-Xylene		ND ND	0.001	0.007
- 11,10110		TW .	0.002	0.014
MOTEC				

a - LOD = Limit of Detection

b - LOQ = Limit of Quantitation

c - ND = Not Detected

d - BQL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. Sample No. Sample Site: 11797-B 21044 MS-1

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

11797-B 21045 MS-2 Client No. Sample No. Sample Site:

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	51.0
Pyrene	10.0	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. Sample No. Sample Site: 11797-В 21046 MS-3

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	82.0
Pyrene	10.0	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. Sample No. Sample Site: 11797-B 21047 MS-4

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. Sample No. Sample Site: 11797-B 21048 MS-5

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B Sample No. 21049 Sample Site: MS-6

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

ND = Not Detected

BDL = Below Detection Limit

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DAVY LABORATORIES

115 South 6th Street P.O. Box 2076 La Crosse WI 54602-2076 (608) 782-3130 FAX: (608) 784-6611

Division of Davy Engineering Co.

Advent Environmental Services, Inc. P.O. Box 246
Port Washington, Wisconsin 53074

Client No. 11795 Project No. 92500

January 14, 1992

Attn: Dena Hargraves

INTRODUCTION:

Six water samples were received on December 17, 1991. The client requested that the samples be analyzed for Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Volatile Organic Compounds (VOC), Polynuclear Aromatic Hydrocarbons (PAH) and total lead.

SAMPLE IDENTIFICATION:

The samples were collected on December 11 and 13, 1991. The samples were collected by the Dena Hargraves at the McGlynn Property under Project No. 92500. The samples were delivered to the laboratory on December 17, 1991 by the client. Upon arrival at the laboratory, the samples were given the following identification numbers:

DAVY LAB NO.	SAMPLE SITE
21027	MGW-2
21028	MGW-3
21029	MGW-4
21030	MGW-1
21031	MGW-5
21032	MGW-6

METHODOLOGY:

The samples were analyzed according to the method outlined in the Leaking Underground Fuel Tank Manual published by the State of California. The Wisconsin Department of Natural Resources references this method for the analysis of Total Petroleum Hydrocarbons (TPH) either as Gasoline, Diesel, or Fuel Oil.

DIESEL RANGE ORGANICS (DRO) -

The sample for the determination of Diesel Range Organics (DRO) was extracted three times with carbon disulfide. The extracts were then dried and concentrated to 1-ml with carbon disulfide. A portion of the samples were injected into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas obtained were compared with known standards.

GASOLINE RANGE ORGANICS (GRO) -

The samples were analyzed for Gasoline Kange Organics (GRO) by taking a 5-ml portion of the sample and then purging for 11-minutes using helium as the carrier gas.

Following the purge cycle, each sample was desorbed into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas were compared with known standards.

VOLATILE ORGANIC COMPOUNDS (VOC) -

Volatile Organic Compounds were determined on each sample using EPA SW 846 Method 8021 for the analysis. A 5- ml portion of each water sample was purged for 11-minutes using helium as the purge gas.

Each sample was then desorbed to a Tracor Model 540 GC equipped with a Hall/PID detector in series. Quantitation was based on the response of standards through the use of linear regression curves.

DAVY LABORATORIES

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Division of Davy Engineering Co.

Advent Environmental Services, Inc. Page 2
January 14, 1992

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) -

The samples were analyzed for PAH following EPA Method 610. A HPLC equipped with an ultraviolet and fluroescence detector in series was used for the analysis.

INORGANIC ANALYSIS -

The samples were analyzed for total lead based on EPA Methodology as given in SW-846. The samples were extracted according to the method. Following extraction, each sample was then digested in a strong acid solution. Following digestion, the samples were analyzed for lead using a Perkin-Elmer Model 2100 AA. The response of the analyte in the sample was compared to a standard curve. Quantitation was based on a linear regression analysis.

RESULTS:

The results for the VOC and PAH analyses are given in Table 1 and 2, respectively. The results of the analyses for GRO, DRO, and total lead in the samples are given below:

SAMPLE NO.	SAMPLE SITE	GRO (ppm)	DRO (ppm)	TOTAL LEAD(ppm)	DATE EXTRACTED	DATE ANALYZED
21027 21028	MGW-2 MGW-3	ND ND	ND ND	<0.051 <0.051	122391 122391	010392 010392
21029	MGW-4	ND	ND	<0.051	122391	010392
21030	MGW-1	ND	ND	<0.051	122391	010392
21031	MGW-5	ND	ND	<0.051	122391	010392
21032	MGW-6	ND	ND	<0.051	122391	010392

< - means "less than"

a - calculated on a "dry weight basis"

Minimum Detection Limit - W

WATER:

GRO = 0.0342 ppm

DRO = 0.5 ppm

SOIL:

GRO = 1 ppm

DRO = 1 ppm

Submitted by:

DAVY LABORATORIES

Paul A. Harris, Director

The laboratory analyses reported were determined in accordance with current methodology. The results are only representative of the samples received; conditions can be expected to vary at different times and under different sampling conditions.

Table 1 - Volatile Organic Compounds (ug/1).

Sample No: 21030

Sample Site: MGW-1

Date Analyzed: 122791

	Result	LOD(a)	LOO(b)
_		0.01	0.05
Benzene	ND	0.01	0.07
Bromobenzene	ND ND	0.01	0.07 0.14
Bromochloromethane Bromodichloromethane	ND ND	0.02 0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND ND	2.20 0.05	15.4 0.35
1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	0.03	0.33
1,4-Dichlorobenzene	ND	0.02	0.14
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1.2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND ND	0.01	0.07
Isopropyl Benzene	ND ND	0.07 0.02	0.49
p-Isopropyl toluene Methyl-tert-butyl-ether	ND ND	0.02	0.14 0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.42
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND ND	0.03	0.21
1,2,3-Trichloropropane	ND ND	0.50	3.50
1,3,5 Trimethyl benzene 1,2,4-Trimethylbenzene	ND ND	0.05 0.01	0.35 0.07
Vinyl Chloride	ND ND	0.01	0.07
m/p-Xylene	ND ND	0.02	0.28
o-Xylene	ND	0.02	0.14
/			,

NOTES: a - LOD = Limit of Detection

c - ND = Not Detected

b - LOQ = Limit of Quantitation d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/i).

Sample No: 21027

Sample Site: MGW-2

Date Analyzed: 122791

•	Result	LOD(a)	ГООФ
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND ND	0.03 0.02	0.21 0.14
2-Chlorotoluene	ND ND	0.02	0.14
4-Chlorotoluene	ND	4.00	28.0
1,2-Dibromo-3-Chloropropane Dibromochloromethane	ND	0.03	0.21
1.2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND ND	0.06 0.01	0.36 0.07
Ethyl Benzene	ND ND	0.01	0.07
Hexachlorobutadiene Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1, 1, 1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND ND	0.03	0.21
1,2,3-Trichloropropane	ND ND	0.50	3.50
1,3,5 Trimethyl benzene	ND ND	0.05	0.35
1,2,4-Trimethylbenzene	ND ·	0.01 0.04	0.07 0.28
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene o-Xylene	ND ND	0.02	0.14
O-Atylene	1.0	0.02	0.17

NOTES: a - LOD = Limit of Detection

c - ND = Not Detected

b - LOQ = Limit of Quantitation d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21028

Sample Site: MGW-3 Date Analyzed: 122791

	Result	LOD(a)	<u>ГОО(b)</u>
Dangana	ND	0.01	0.07
Benzene Bromobenzene	ND	0.01	0.07 0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND ND	3.00 2.20	21.0
Dibromomethane 1,2-Dichlorobenzene	ND	0.05	15.4 0.35
1,3-Dichlorobenzene	ND	0.03	0.33
1,4-Dichlorobenzene	ND	0.02	0.14
Dichlorodifluoromethane	ND ·	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1.2-Dichloroethane	ND	0.03	0.43
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND ND	0.06	0.42
	ND ND	0.01 0.02	0.07
Styrene 1,1,1,2-Tetrachloroethane	ND	0.01	0.14
1,1,2-Tetrachloroethane	ND ND	0.01	0.07 0.07
	ND	0.04	0.07
Toluene	ND	0.01	0.28
		0.02	0.14
	ND	0.03	0.21
	ND	0.03	0.21
	ND	0.06	0.42
		0.01	0.07
			0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
			0.07
			0.28
			0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection

c - ND = Not Detected

b - LOQ = Limit of Quantitation d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Sample No: 21029

Sample Site: MGW-4

Date Analyzed: 122791

-			
	Result	LOD(a)	LOO(b)
Danner	ND	0.01	0.07
Benzene Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND ND	0.05	0.35
1,3-Dichlorobenzene	ND ND	0.02 0.01	0.14 0.07
1,4-Dichlorobenzene	ND ND		0.35
Dichlorodifluoromethane	ND ND	0.05 0.07	0.33
1,1-Dichloroethane	ND ND	0.07	0.49
1,2-Dichloroethane 1,1-Dichloroethene	ND ND	0.03	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND .	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
- 1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
l m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection

c - ND = Not Detected

b - LOQ = Limit of Quantitation d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Sample No: 21031

Sample Site: MGW-5

Date Analyzed: 123091

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	Result	LOD(a)	LOO(b)
	1110111	<u></u>	
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND `	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND ND	0.06	0.42
Naphthalene	ND ND	0.06	0.42 0.07
n-Propyl benzene	ND ND	0.01 0.02	0.07
Styrene			
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND ND	0.01	0.07 0.28
Tetrachloroethene	ND ND	0.04	
Toluene	ND ND	0.01 0.02	0.07 0.14
1,2,3-Trichlorobenzene			0.14
1,2,4-Trichlorobenzene	ND ND	0.03	
1,1,1-Trichloroethane	ND ND	0.03	0.21
1,1,2-Trichloroethane	ND ND	0.06	0.42
Trichloroethene	ND ND	0.01	0.07
Trichlorofluoromethane	ND ND	0.03 0.50	0.21 3.50
1,2,3-Trichloropropane	ND ND	0.05	0.35
1,3,5 Trimethyl benzene	ND ND	0.03	0.33
1,2,4-Trimethylbenzene	ND ND	0.01	0.07
Vinyl Chloride	ND ND	0.04	0.28
m/p-Xylene o-Xylene	ND	0.02	0.14
0-Alyione	140	0.02	0.14

NOTES: a - LOD = Limit of Detection

c - ND = Not Detected

b - LOQ = Limit of Quantitation d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Sample No: 21032

Sample Site: MGW-6

Date Analyzed: 123191

	Result	LOD(a)	LOO(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70 0.14
Chloroform	ND ND	0.02 0.03	0.14
Chloromethane 2-Chlorotoluene	ND	0.03	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1.2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND ND	0.05 0.05	0.35 0.35
2,2-Dichloropropane	ND	0.05	0.36
1,1-Dichloropropene Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND ND	0.06	0.42
Trichloroethene	ND ND	0.01	0.07
Trichlorofluoromethane 1,2,3-Trichloropropane	ND ND	0.03 0.50	0.21 3.50
1,3,5 Trimethyl benzene	ND ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.03	0.33
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.26
o-Xylene	ND	0.02	0.14
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NOTES: a - LOD = Limit of Detection

c - ND = Not Detected

b - LOQ = Limit of Quantitation d - BQL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. Sample No. Sample Site: 11795 21030 MGW-1

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. Sample No. Sample Site: 11795 21027 MGW-2

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	0.28
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. Sample No. Sample Site: 11795 21028 MGW-3

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795 Sample No. 21029 Sample Site: MGW-4

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected

BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795 Sample No. 21031 Sample Site: MGW-5

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected

BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. Sample No. Sample Site: 11795 21032 MGW-6

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND