

BISHOP'S WOODS EAST, 13255 WEST BLUEMOUND ROAD, SUITE 202, BROOKFIELD, WISCONSIN 53005 (414) 782-7281 FAX: (414) 782-7289

August 16, 1995

Ms. Nicole LaPlant Wisconsin Department of Natural Resources 1125 North Military Avenue P.O. Box 10448 Green Bay, Wisconsin 54307-0448

RE: Phase II Subsurface Investigation Report

Ansul Fire Technology Center

Pierce Avenue

Marinette, Wisconsin LUST# 38-01345

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Dear Ms. LaPlant:

Enclosed is a copy of the "Phase II Subsurface Investigation Report" for the Ansul Fire Technology Center, Marinette, Wisconsin. The report documents the findings of the site activities conducted in March and April, 1995 related to a release from a 560-gallon gasoline underground storage tank formerly located at the site. If you have any questions, or require additional information, please do not hesitate to call.

Respectfully,

Dames & Moore, Inc.

Jeffrey H. Danko Hydrogeologist

Enclosure

cc: Mr. George Rogers

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PHASE II SUBSURFACE INVESTIGATION REPORT ANSUL FIRE TECHNOLOGY CENTER PIERCE AVENUE MARINETTE, WISCONSIN

LUST# 38-01345

AUGUST 1995



TABLE OF CONTENTS

1.0	INTRODUCTION					
	1.1 Pu	irpose	and Scope .	• • • • •		1
2.0	BACKO	ROUN	۷D			3
	2.1	Regio	nal Setting.			3
		2.1.1	Site Location	n		3
		2.1.2	Topography			3
		2.1.3	Surface Soil	s		3
		2.1.4	Bedrock Ge	ology .		4
		2.1.5	Surface Wat	er and (Ground Water Hydrology	4
	2.2	Site H	History			4
		2.2.1	Site Occupa	ncy		4
		2.2.2	History of P	revious	Investigations	5
	2.3	Sumn	nary of WDN	R Site C	Closure Guidelines	6
		2.3.1	Selection of	Closure	e Criteria for Soils	6
		2.3.2	Closure Crit	eria for	Ground Water Cleanup Criteria	7
3.0	SOIL A	ND GI	ROUND WA	TER O	UALITY INVESTIGATION	8
	3.1					8
			•		• • • • • • • • • • • • • • • • • • • •	9
					ered	9
			· -			10
			•	-		10
			3.1.3.2	-	nd Water Samples	11
			3.1.3.3		ssion of Analytical Results	11
			3.1.3.		Soil Samples	11
			3.1.3.	3.2	Ground Water Samples	12
	3.2	Task	II Soil Boring	Activit	iies	14
		3.2.1	Field Metho	dology		15
		3.2.2			ered	15
		3.2.3			s	15
			3.2.3.1		amples	16
			3.2.3.2		nd Water Samples	16
			3.2.3.3		ssion of Laboratory Results	18
			3.2.3.		Soil Samples	18

TABLE OF CONTENTS (Continued)

		3.2.3.3.2 Ground Water Samples	19
4.0	SITE H	YDROGEOLOGY	21
	4.1	Local Aquifer Characteristics	21
	4.2	Ground Water Flow Direction and Gradients	21
	4.3	Hydraulic Conductivity and Ground-Water Velocity	22
	4.4	Contaminant Transport	23
5.0	NATUR	RE AND EXTENT OF IMPACTED AREA	24
	5.1	Soil Quality	24
	5.2	Ground Water Quality	25
6.0	CONCL	USIONS	26
7.0	RECOM	MENDATIONS	28
8.0	LIMITA	ATIONS	29
9.0	CERTII	FICATION STATEMENT	30
10.0	REFE	RENCES CITED	31

TABLE OF CONTENTS (continued)

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Task I Soil Boring Location Map
Figure 4	Geologic Cross-Section A-A'
Figure 5	Geologic Cross-Section B-B'
Figure 6	Geologic Cross-Section C-C'
Figure 7	Task II Soil Boring Location Map
Figure 8	Ground Water Elevation Contour Map - April 21, 1995
Figure 9	BTEX Isoconcentration Map - Soil
Figure 10	BTEX Isoconcentration Map - Ground Water

LIST OF TABLES

Table 1	PID Field Screening Results
Table 2	Elevation Survey Data
Table 3	Field Analytical Testing
Table 4	Laboratory Analytical Results - Soil
Table 5	Laboratory Analytical Results - Ground Water

LIST OF APPENDICES

Appendix A	Well/Drillhole/Borehole Abandonment Forms
Appendix B	Field Methodologies
Appendix C	Soil Boring Logs
Appendix D	Laboratory Analytical Results - Soil
Appendix E	Laboratory Analytical Results - Ground Water
Appendix F	Monitoring Well Construction/Well Development Forms

EXECUTIVE SUMMARY

In November 1992, E&K Hazardous Waste Services was retained by Ansul Incorporated to remove at 560-gallon gasoline underground storage tank (UST) located at the Ansul Fire Technology Center. Evidence of a release to the environment was discovered following UST removal. Subsequently, Dames & Moore was retained to initiate subsurface investigation activities at the site to assess the extent of the impact. Impacts to soil and ground water were identified during the investigation; however, the extent of the impact was not determined.

Based on the findings of the initial phase of investigation, Dames & Moore was again retained to conduct a Phase II subsurface investigation at the site to further assess impacts to soil and ground water impacts.

The Phase II activities consisted of two tasks. The initial task included the advancement of 23 soil borings. The purpose of this task was to define the approximate extent of the soil and ground water impacts. The second task included the advancement of five additional soil borings, which were converted to ground water monitoring wells.

Soil and ground water samples were analyzed in the field using a photoionization detector and in-field gas chromatograph. In addition selected soil and ground water samples were submitted to Anatech Laboratories for analysis. Based on the field and laboratory results, the approximate boundaries of the soil and ground water impacts were identified.

Following completion of the Task I activities, five additional soil borings were advanced and converted to ground water monitoring wells. The additional wells were necessary to address WDNR protocol for ground water data collection.

Soil samples from the five borings were submitted to Anatech Laboratories for analysis. Four of the five soil samples contained no detectable concentrations of gasoline range organics (GRO) or petroleum volatile organic compounds (PVOC). The fifth sample, collected from soil boring location AFTC-28 contained GRO and PVOC.

Prior to ground water sampling, ground water elevation measurements were obtained from each new and existing monitoring well location. Based on an evaluation of the ground water elevation data, the apparent ground water flow direction is to the east-northeast.

Following monitoring well development, ground water samples were collected from each well for laboratory analysis. Based on the laboratory analytical results, ground water containing concentrations of petroleum fractions that exceed the PAL were detected in five of the ground water samples. In addition, approximately one foot of product was floating on the ground water at the location of monitoring well AFTC-28.

Based on the findings of the Phase II investigation, Dames & Moore concludes that impacts to soil and ground water exist at the site. The soil impacts exceed the WDNR cleanup criteria; however, the perimeter of the soil impacts within the area investigated has been established. Ground water impacts at concentrations that exceed the PAL and ES are present at the site. The horizontal and vertical extent of the ground water impacts has not been defined. In addition, free floating product is present.

Therefore, Dames & Moore recommends that additional investigation activities be conducted to further assess the extent of the impacts at the site. Finally, an interim remediation program, consisting of a product recovery system, should be initiated at the site to remove the free floating product located on the ground water.

PHASE II SUBSURFACE INVESTIGATION REPORT ANSUL FIRE TECHNOLOGY CENTER

MARINETTE, WISCONSIN LUST# 38-01345

1.0 INTRODUCTION

This report presents the results of Phase II subsurface investigation activities conducted at the Ansul Fire Technology Center facility (AFTC) in Marinette, Wisconsin. The investigation was conducted to further assess the vertical and horizontal extent of impact to the environment resulting from the operation of a 560-gallon gasoline underground storage tank (UST). The impacts to the environment were discovered during the UST removal in November, 1992. A subsequent limited, site investigation, conducted in May 1993, confirmed impacts to the soil and ground water. Details of the initial phase of the investigation activities are presented in "Site Investigation Report, Ansul Fire Technology Center" (January, 1994).

1.1 Purpose and Scope

The purpose of the Phase II subsurface investigation was to further assess the boundaries of impact to the soil, further assess ground water quality, evaluate the potential for risk to the public health or the environment, and to evaluate corrective measures, if appropriate. In addition, an assessment of the site conditions with respect to past and present site usage was conducted.

The scope of work included:

- Advancement of 23 soil borings;
- Collection of soil samples for in-field screening, in-field laboratory testing, and laboratory analysis;
- Advancement of five additional soil borings, which were converted to groundwater monitoring wells;

- Collection and laboratory analysis of ground water samples from the new and existing monitoring wells and piezometer;
- Elevation and location survey of the monitoring wells and borings; and,
- Collection of ground water elevation data.

2.0 BACKGROUND

2.1 Regional Setting

2.1.1 Site Location

The AFTC property is located on Pierce Avenue, Marinette, Wisconsin, Marinette County, Wisconsin (Figure 1). The location occupies a portion of the north half of the northeast quarter of Section 13, Township 31 North, Range 27 West (N½, NE¼, Sec. 13, T31N, R27W), based on the USGS 7.5-minute series topographic map, Marinette West, Wisconsin-Michigan Quadrangle (1963; photorevised, 1976). The property is located within the Marinette Industrial Park. The property surrounding the AFTC facility consists of undeveloped land owned by Ansul. The site area is shown in Figure 2.

2.1.2 Topography

The regional topography of the Lake Michigan Basin consists of rolling hills of moderate relief. Regional elevations range from 585 feet above mean sea level (MSL) at the Menominee River and Green Bay to approximately 650 feet MSL within Menominee County. Elevations of 650 feet MSL are found atop local glacial features (drumlins) within the Menominee County area (USGS 15-minute series topographic map, Marinette Michigan-Wisconsin, 1963). The surface topography at the site is relatively low relief, with an approximate surface elevation at the former tank site of 610 feet MSL.

2.1.3 Surface Soils

According to the United States Department of Agriculture Soil Conservation Service, soils near the surface of the property are classified as Udorthents. Udorthents are generally deep, loamy soils consisting primarily of fill materials placed in drainageways, depressions, and areas along the margins of lakes and reservoirs. The soils are poorly suited to cultivated crops, pasture, woodland and most engineering uses (USDA, 1991). The fill material associated with the Udorthents are naturally-occurring sands and gravels associated

with the river. Soil encountered during site investigations has consisted almost exclusively of sand.

2.1.4 Bedrock Geology

Bedrock is encountered at depths of approximately 40 feet below the ground surface (Dames & Moore, 1976; STS, 1981). The bedrock consists of the Ordovician Sinnipee Group dolomite with limestone and shale (Greenberg, 1980; Mudrey, 1982). The Sinnipee Group includes the Galena, Decorah and Plattville formations.

2.1.5 Surface Water and Ground Water Hydrology

The nearest surface water is an intermittent stream that originates at the northeast corner of the AFTC property. The stream flows generally southward and intersects the Little River approximately 2,000 feet south of the AFTC property. The Little River, which flows eastward, discharges into Green Bay.

The local ground water flow direction is east-northeast. Ground water is not used for municipal, residential, commercial, or industrial purposes in the vicinity of the AFTC property, according to Ansul representatives. Water and sewer services are provided by the City of Marinette, which draws its potable water from Lake Michigan; however, some of the buildings on the AFTC property use septic systems.

2.2 Site History

2.2.1 Site Occupancy

The property is currently used by Ansul Fire Protection as a firefighter training school, with operations consisting of classroom lectures and field exercises. The site is owned by Ansul Incorporated.

2.2.2 History of Previous Investigations

In November 1992, a 560-gallon gasoline UST was removed by E&K Hazardous Waste Services of Sheboygan, Wisconsin. Upon removal of the UST, E&K personnel identified gasoline fractions in the surrounding soil, indicating that a release from the tank system had occurred. E&K personnel collected one soil sample from the north-central area of the excavation to assess the quality of the soils. The soil sample was submitted to a laboratory for analysis of gasoline range organics (GRO). Based on the laboratory analytical results, detectible concentrations of petroleum fractions were present in the sample.

In May 1993, Dames & Moore was retained to assess the extent of the impact at the site. Dames & Moore retained Twin City Testing of Appleton, Wisconsin to advance four soil borings at the site. Three of the borings were converted to ground water monitoring wells; the fourth boring was converted to a piezometer.

A total of five soil samples were submitted for laboratory analysis. The samples were analyzed for petroleum volatile organic compound (PVOC) and GRO content. Based on the laboratory results, impacted soils were noted to be present northeast of the former UST location.

In addition, ground water samples were collected from each of the wells. Based on the results of the ground water sampling, impacted ground water above the Wisconsin Administrative Code (Wis. Admin. Code) ch. NR 140 (NR 140) Enforcement Standards (ES) were noted at each monitoring well location. However, a field blank collected at the time of ground water sampling also contained petroleum fraction concentrations above the ES.

Because the ground water sampling data was potentially invalid due to potential contamination by air-borne vapors encountered during sample collection, a second round of ground water samples was collected in January 1994. Based on the results of the second round of ground water sampling, impacts to the ground water at the site were noted north and east of the former UST location.

2.3 Summary of WDNR Site Closure Guidelines

The following section summarizes the WDNR's guidelines that pertain to the selection of closure criteria and cleanup goals for the AFTC site.

2.3.1 Selection of Closure Criteria for Soils

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According to the Case Closeout Guidelines established in Wisconsin Administrative Code Chapter NR 700, several site characteristics may be utilized when establishing cleanup criteria for soils at sites impacted by petroleum products. The criteria include the source of the impacts, the horizontal and vertical extent of the impacts, the potential for human or sensitive environmental exposure, and the types of contaminants present.

Based on these criteria, assessment of the site has not been sufficiently completed to enable classification of the site as either a "simple" or "complex" case because the vertical and horizontal extent of impact has not been sufficiently defined. Following completion of site investigation activities, soil cleanup criteria may be established for the site. However for comparison purposes, the "simple" case closure criteria are presented below.

• GRO/DRO ≤ 100	parts per million.

•	Benzene	\leq 5.0 micrograms per kilogram (μ g/kg)
	Toluene	$\leq 1,500 \mu\text{g/kg}$
	Ethylbenzene	$\leq 2,900 \mu\text{g/kg}$
	Total Xylene	\leq 4,100 μ g/kg
	1.2 - Dichloroethane	≤ 4.9 µg/kg

¹ ppm - Parts per Million, equivalent to milligrams per kilogram (mg/kg)

2.3.2 Closure Criteria for Ground Water Cleanup Criteria

The closure criteria pertaining to the restoration of ground water impacts is interpreted for the purpose of this report to be the ground water quality standards established in Table 1 of NR 140 (WDNR, 1994).

3.0 SOIL AND GROUND WATER QUALITY INVESTIGATION

The Phase II soil and ground water quality investigation consisted of two tasks. The initial task (Task I) included the advancement of 23 soil borings to assess the horizontal extent of the impact at the site. The second task (Task II) included the advancement of five soil borings, which were converted to ground water monitoring wells.

3.1 Task I Soil Boring Activities

On March 30, 1995 and March 31, 1995, Briohn Environmental Contractors, under the direction of Dames & Moore, advanced soil borings at the site using a hydraulically-operated sampling device (Geoprobe®). The purpose of the investigation was to assess the quality of the soil and ground water in the vicinity of the former UST location with the intent of delineating the approximate boundaries of the impact. The scope of the investigation included the advancement of 23 soil borings, the collection of soil samples for field screening and laboratory analysis, and the collection of ground water samples for laboratory analysis.

The investigation primarily focussed on the area located east of the former UST location. The soil boring locations are presented in Figure 3. Following soil sample collection at each boring location, selected soil samples were analyzed in the field, using a gas chromatograph, for benzene, toluene, ethylbenzene, and xylene (BTEX) content. In addition, ground water samples were collected from each boring location and analyzed for BTEX content.

Following sample collection, each boring was abandoned in accordance with Wisconsin Administrative Code Chapter NR 141 (NR 141). Copies of the Well/Drillhole/Borehole Abandonment Forms are presented in Appendix A.

3.1.1 Field Methodology

The following is a summary of the field methodologies used during soil boring advancement, sample collection, and other aspects of the Task I field investigation. Details of the methodologies are presented in Appendix B.

Soil boring advancement and soil sampling was conducted using standard methodologies and undisturbed soil sample collection techniques. Soil boring logs (Form 4400-122) are presented as Appendix C.

Soil samples intended for laboratory analysis were placed in appropriate laboratory-supplied jars. A portion of each sample was placed in resealable plastic bags for in-field screening with a photoionization detector (PID). PID screening results are provided on the soil boring logs (Appendix C) and Table 1.

Soil and ground water samples were transported to Anatech Laboratories, Ludington, Michigan, via overnight courier. Appropriate chain-of-custody documents are presented in Appendices D and E.

The boring locations were surveyed by Dames & Moore personnel, with reference to the elevations established in the USGS 7.5-minute series topographic map, Marinette West, Wisconsin-Michigan Quadrangle (1963; photorevised, 1976). A summary of the elevation survey data is presented in Table 2.

3.1.2 Soil Types Encountered

Soil types encountered during the Task I site investigation consisted primarily of brown and yellowish brown fine-grained sands. The soil types are consistent with those identified during the initial site investigation activities. Details of the soils encountered are presented on the geologic cross-sections (Figures 4 through 6). The locations of the cross-sections with respect to the site are presented in Figure 7.

3.1.3 Laboratory Analysis

Two soil and 23 ground water samples were analyzed in the field for BTEX content using a gas chromatograph. In addition, selected soil and ground water samples were submitted to Anatech Laboratories for chemical analyses. The soil sample analytical parameters were selected in accordance with WDNR Leaking Underground Storage Tank (LUST) and Petroleum Analytical and Quality Assurance Guidance (July 1993) and included GRO, PVOC, and total lead. The ground water samples were analyzed for PVOC content.

3.1.3.1 Soil Samples

Two soil samples were analyzed in the field for BTEX content. Soil sample AFTC-7/2, collected from the depth interval two feet to four feet below ground surface (bgs) from soil boring AFTC-7, contained detectable concentrations of BTEX compounds ranging from 135 parts per billion (ppb) ethylbenzene to 603 ppb xylenes. Soil sample AFTC-8/2, collected from the depth interval of two feet to four feet bgs from soil boring AFTC-8, contained detectable concentrations of BTEX compounds ranging from 152 ppb toluene to 788 ppb xylenes.

In addition, three soil samples were submitted to Anatech for GRO, PVOC, and total lead analyses. Soil sample AFTC-10/2, collected from the depth interval of two feet to four feet bgs from soil boring AFTC-10, contained GRO and the PVOC's benzene, ethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, toluene, and xylenes. The sample also contained detectable concentrations of total lead.

Soil sample AFTC-4/2, collected from the depth interval of two feet to four feet bgs from soil boring AFTC-4, contained no detectable concentrations of GRO or PVOC and a total lead concentration of 1.4 mg/kg. Soil sample AFTC-22/2, collected from the depth interval two feet to four feet bgs in soil boring AFTC-22, contained no detectable concentrations of GRO or PVOC and a total lead concentration of 2.8 mg/kg. The in-field analyses and laboratory results are summarized in Tables 3 and 4. Copies of the laboratory reports are presented in Appendix D.

3.1.3.2 Ground Water Samples

Twenty-three ground water samples (one from each boring location) were analyzed in the field for BTEX content. Benzene was detected in the ground water at each boring location at concentrations ranging from 4.0 ppb at the location of AFTC-4 to 472,578 ppb at the location of AFTC-20. Ethylbenzene concentrations ranged from below the method detection limit in the ground water at three of the boring locations (AFTC-4, AFTC-25, and AFTC-26) to 27,647 ppb at the location of AFTC-20. Toluene was detected in the ground water collected from each boring location at concentrations ranging from 3.0 ppb at the location of AFTC-25 to 164,373 ppb at the location of AFTC-20. Finally, xylene was detected in the ground water collected from 22 of the soil boring locations. The detected concentrations of xylenes ranged from 7.0 ppb in the ground water collected at AFTC-19 to 113,777 ppb in the ground water collected from AFTC-14. No xylenes were detected in the ground water at the location of AFTC-25.

In addition, four ground water samples were submitted to Anatech for PVOC analysis. The ground water samples collected from borings AFTC-24 and AFTC-25 contained no detectable concentrations of PVOCs. The ground water sample collected from boring AFTC-9 contained PVOC concentrations ranging from 1,900 micrograms per liter (μ g/l) methyl-tertiary-butyl-ether to 35,000 μ g/l xylenes. The ground water sample collected from boring AFTC-26 contained PVOC concentrations ranging from 11 μ g/l ethylbenzene to 290 μ g/l 1,2,4-trimethylbenzene. The ground water analytical results are summarized in Table 5. Copies of the laboratory reports are presented in Appendix E.

3.1.3.3 Discussion of Analytical Results

3.1.3.3.1 Soil Samples

The two soil samples collected during the investigation that were analyzed in the field had benzene concentrations that exceed the soil cleanup criteria established in Wisconsin Administrative Code Chapter NR 700 (NR 700). The remaining detected concentrations of petroleum fractions were below the cleanup criteria.

One of the three soil samples submitted for laboratory analyses, sample AFTC-10-2, contained GRO, benzene, toluene, and xylene concentrations that exceed the NR 700 cleanup criteria. In addition, the sample also contained 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene; however, no cleanup criteria have been established for these compounds. The remaining soil samples contained no detectable concentrations of GRO or PVOC. Finally, the total lead concentrations detected in the soil samples are within the naturally-occurring levels for soils.

3.1.3.3.2 Ground Water Samples

The ground water samples collected from the 23 borings and analyzed in the field contained benzene concentrations that exceed the Preventive Action Limit (PAL) established in NR 140. Analytical results report that 21 of these ground water samples contained benzene at concentrations that exceed the Enforcement Standard (ES). In addition, benzene was detected in the field-analyzed ground water samples collected from AFTC-24 and AFTC-25. However, benzene was not detected by the laboratory in the two ground water samples submitted for analysis.

The ethylbenzene concentration exceeded the PAL in the ground water samples collected from 11 of the 23 borings; however, only nine of the ground water samples exceeded the ES. The ethylbenzene concentrations in the remaining samples were below the PAL. Ethylbenzene was detected in the field-analyzed ground water sample collected from AFTC-24; however, this compound was not detected in the ground water sample analyzed by the laboratory.

The toluene concentration exceeded the PAL in the ground water samples collected from 15 of the 23 borings; however, only 11 of the samples exceeded the ES. The remaining samples contained toluene concentrations below the PAL. Trace concentrations of toluene were detected in the field-analyzed ground water sample collected from AFTC-24 and AFTC-25; however, toluene was not detected in the ground water sample analyzed by the laboratory.

The xylene concentration exceeded the PAL in 14 of the 23 ground water samples; however, only 11 samples contained concentrations that exceeded the ES. The remaining ground water samples that contained detectable concentrations of xylene were below the PAL. Trace concentrations of xylene were detected in the field-analyzed ground water samples collected from AFTC-24 and AFTC-25; however, xylene was not detected in the ground water samples analyzed by the laboratory.

3.2 Task II Soil Boring Activities

Based on the results of the Task I activities, five soil borings were advanced to further assess the horizontal extent of the impacts to soil and ground water at the site. On April 20, 1995, Midwest Engineering Services of Appleton, Wisconsin advanced five soil borings, under the direction of Dames & Moore. The location of the soil borings is shown on Figure 7. The soil borings were advanced at the site using a hollow stem auger. Each soil boring was sampled at continuous two-foot intervals with selected samples from each boring location prepared for submittal to Anatech for laboratory analyses. The analyses included: GRO, PVOC, and total lead in accordance with WDNR guidance.

The purpose of this task of the investigation was to collect soil and ground water samples from the proposed locations to verify that the approximate horizontal extent of the soil and ground water impacts had been identified during the Task I activities. Soil boring/monitoring well AFTC-27 was positioned approximately 200 feet east of the former UST location to assess the soils and ground water located northeast soil boring AFTC-24, which contained low levels of BTEX compounds.

Soil boring/monitoring well AFTC-28 was positioned approximately 100 feet east of soil boring AFTC-23, which contained elevated concentrations of BTEX compounds.

Based on the potentially impacted subsurface conditions observed during the installation of soil boring/monitoring well AFTC-28, soil boring/monitoring well AFTC-29 was installed approximately 250 feet east of soil boring/monitoring well AFTC-28 to assess the subsurface conditions near the property boundary.

Soil boring/monitoring well AFTC-30 was positioned to the southeast of the former UST location and approximately 100 feet east of impacts identified during the Task I activities.

Soil boring/monitoring well AFTC-31 was positioned south of soil boring AFTC-26, which contained trace concentrations of BTEX compounds.

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Following soil sample collection, the soil borings were converted to ground water monitoring wells in accordance with Wisconsin Administrative Code ch. NR 141 (NR 141). On April 20, 1995, the new monitoring wells were developed in accordance with NR 141. In addition, the existing monitoring wells were purged prior to sampling. The monitoring well construction and well development forms are presented in Appendix F.

Prior to development, the monitoring wells were evaluated for the presence of floating product using a Keck-brand oil/water interface probe. Based on the information obtained, a floating product layer was noted in monitoring well AFTC-28 at a thickness of 0.91 feet. The thickness of the floating product following development was 0.86 feet.

Following development, the ground water monitoring wells were sampled for GRO, PVOC, and dissolved lead content in accordance with WDNR LUST and Petroleum Analytical and Quality Assurance guidance (July 1993).

3.2.1 Field Methodology

The field methodologies used during the investigation were similar to those described in Section 3.1.1. Details of the field methodologies are presented in Appendix B.

3.2.2 Soil Types Encountered

The soil types encountered during the second task of the investigation consisted primarily of fine-grained sands. The sands were noted to contain traces of gravel and silt. The soil types are consistent with those identified during previous investigations at the site. Ground water was encountered in each soil boring location at a depth of approximately four feet bgs.

3.2.3 Laboratory Analysis

Five soil samples (one from each boring location) were selected for laboratory analysis. The soil samples were analyzed for GRO, PVOC, and total lead by Anatech Laboratories.

07724-012-RPT

In addition, ground water samples were collected from each of the new and existing monitoring well locations, with the exception of monitoring well MW-3, (Dames & Moore and Ansul personnel were unable to locate the monitoring well during site activities). The ground water samples collected from each monitoring well were submitted to Anatech Laboratories for GRO, PVOC, and dissolved lead analyses.

3.2.3.1 Soil Samples

The five soil samples submitted to the laboratory for analyses were collected from the interval directly above the saturated zone at the depth interval two feet to four feet bgs. Four of the five soil samples contained no detectable concentrations of GRO or PVOC. Soil sample AFTC-28/2-4, collected from soil boring AFTC-28, contained GRO (490 mg/kg), ethylbenzene (1,600 μ g/kg), 1,2,4-trimethylbenzene (7,600 μ g/kg), 1,3,5-trimethylbenzene (26,000 μ g/kg), toluene (1,200 μ g/kg), and xylenes (13,000 μ g/kg).

Each of the soil samples contained detectable concentrations of total lead. The lead concentrations ranged from 0.7 mg/kg in the sample collected from AFTC-29 to 2.8 mg/kg in the sample collected from AFTC-28. The analytical results for the soil samples are summarized in Table 4. Copies of the laboratory reports are presented in Appendix D.

3.2.3.2 Ground Water Samples

Gasoline Range Organics (GRO)

Four of the eight ground water samples contained detectable concentrations of GRO. The detected GRO concentrations ranged from 13 milligrams per liter (mg/l) in the ground water sample collected from monitoring well AFTC-30 to 62 mg/l in the ground water sample collected from monitoring well AFTC-28. GRO was not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-2A, AFTC-29, and AFTC-30. A copy of the laboratory report is presented in Appendix F. The laboratory results are summarized in Table 5.

Petroleum Volatile Organic Compounds (PVOC)

PVOC were detected in five of the eight ground water samples collected at the site. Benzene was detected in five of the samples at concentrations ranging from 3.0 μ g/l in the sample collected from monitoring well AFTC-2B to 9,000 μ g/l in the sample collected from AFTC-2A. Benzene was not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-29, and AFTC-31.

Ethylbenzene was detected in three of the ground water samples at concentrations ranging from 410 μ g/l in the sample collected from monitoring well AFTC-28 to 920 μ g/l in the sample collected from monitoring well AFTC-27. Ethylbenzene was not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-2B, AFTC-29, AFTC-30, and AFTC-31.

Methyl-tertiary-butyl-ether (MTBE) was detected in four of the samples at concentrations ranging from 4.0 μ g/l in the sample collected from AFTC-2B to 15,000 μ g/l in the sample collected from monitoring well AFTC-30. MTBE was not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-28, AFTC-29, and AFTC-31.

The PVOC 1,2,4-trimethylbenzene was detected in three of the ground water samples at concentrations ranging from $160 \,\mu\text{g/l}$ in the sample collected from monitoring well AFTC-27 to $870 \,\mu\text{g/l}$ in the sample collected from monitoring well AFTC-28. The compound was not detected on the ground water collected from monitoring wells AFTC-1, AFTC-2B, AFTC-29, AFTC-30, and AFTC-31.

The PVOC 1,3,5-trimethylbenzene was detected in four of the ground water samples collected at the site. The detected concentrations ranged 140 μ g/l in the ground water sample collected from AFTC-30 to 3,000 μ g/l in the sample collected from AFTC-28. The compound was not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-2B, AFTC-29, and AFTC-31.

Toluene was detected in five of the ground water samples collected at the site. The detected toluene concentrations ranged from 1.0 μ g/l in the ground water sample collected from AFTC-2B to 9,300 μ g/l in the ground water sample collected from monitoring well AFTC-2A. Toluene was not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-29, and AFTC-31.

Xylenes were detected in three of the ground water samples at concentrations ranging from 1,600 μ g/l in the sample collected from AFTC-28 to 2,500 μ g/l in the sample collected from AFTC-2A. Xylenes were not detected in the ground water samples collected from monitoring wells AFTC-1, AFTC-2B, AFTC-29, AFTC-30, and AFTC-31.

The ground water samples collected from monitoring wells AFTC-1, AFTC-29, and AFTC-31 contained no detectable concentrations of PVOC.

Dissolved Lead

Dissolved lead was detected in five of the ground water samples collected at the site. The detected lead concentrations ranged from 0.002 mg/l in the ground water samples collected from AFTC-29 and AFTC-30 to 0.02 mg/l in the ground water sample collected from AFTC-2A. Dissolved lead was not detected in the samples collected from monitoring wells AFTC-1 and AFTC-31.

3.2.3.3 <u>Discussion of Laboratory Results</u>

3.2.3.3.1 Soil Samples

The soil sample collected from soil boring AFTC-28 from the depth interval two feet to four feet bgs contained GRO and the PVOC xylene in concentrations that exceed the WDNR soil cleanup criteria established in NR 700. In addition, the soil sample also contained concentrations of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene. No cleanup criteria have been established for these compounds.

The concentrations of total lead detected in the five soil samples are within the naturally-occurring limits for soils.

3.2.3.3.2 Ground Water Samples

Detectable concentrations of GRO were reported in four of the ground water samples collected from the monitoring wells. The samples include: AFTC-2A (located north of the former UST location), AFTC-27 (located approximately 175 feet east of the former UST location), AFTC-28 (located approximately 350 feet east of the former UST location), and AFTC-30 (located approximately 300 feet east-southeast of the former UST location). The WDNR has not established a PAL or ES for GRO.

Benzene was detected in five of the eight ground water samples in concentrations that exceed the PAL; however, only four of the samples contained concentrations that exceed the ES. Trace concentrations (3.0 μ g/l) were detected in monitoring well AFTC-2B located north of the former UST location. ES exceedences were reported in the ground water samples collected from monitoring wells AFTC-2A, AFTC-28, and AFTC-30.

The ethylbenzene concentrations identified in the ground water samples collected from monitoring wells AFTC-2A, AFTC-27, and AFTC-28 exceed the PAL and ES.

The MTBE concentrations detected in the ground water samples collected from monitoring wells AFTC-2A, AFTC-27, and AFTC-30 exceed the PAL and ES. Trace concentrations of MTBE were also detected in the ground water sample collected from monitoring well AFTC-2B; however, the concentrations detected are below the PAL and ES.

Concentrations of toluene were detected in five of the ground water samples. The concentrations in the ground water samples collected from monitoring wells AFTC-2A, AFTC-27, AFTC-28, and AFTC-30 exceed the PAL and ES. The trace concentration of toluene in the ground water sample collected from monitoring well AFTC-2B does not exceed the PAL or ES.

The xylene concentrations identified in the ground water samples collected from monitoring wells AFTC-2A, AFTC-27, and AFTC-28 exceed the PAL and ES. Xylenes were not detected in the remaining five samples.

The PVOC 1,2,4-trimethylbenzene was detected in three of the ground water samples. No ES or PAL has been established for this compound.

The PVOC 1,3,5-trimethylbenzene was also identified in four of the ground water samples. No PAL or ES has been established for this compound.

Finally, dissolved lead was identified in five of the ground water samples. The dissolved lead concentrations in each of the samples exceeds the PAL; however, only the lead concentrations detected in the ground water sample collected from monitoring well AFTC-2A exceed the ES.

4.0 SITE HYDROGEOLOGY

Hydrogeologic data were collected to characterize the shallow aquifer at the AFTC property Data obtained during this investigation includes information related to:

- Ground water flow direction; and,
- Vertical and horizontal hydraulic gradients.

In addition, data obtained during previous site activities aided in assessing the apparent ground water linear velocity and contaminant transport rate.

The purpose of the characterization was to evaluate potential contaminant migration directions and the location of potential ground water receptors.

4.1 Local Aquifer Characteristics

The shallow aquifer materials in the vicinity of the AFTC property consist of deep, loamy soils consisting primarily of fill materials placed in drainageways, depressions, and areas along the margins of lakes and reservoirs. The local bedrock occurs at depths of approximately 40 feet below the ground surface.

4.2 Ground Water Flow Direction and Gradients

An elevation survey of the monitoring wells was conducted on April 20, 1995. The results of the survey are presented in Table 2. Post-development ground water elevations were measured from the monitoring wells and the piezometer at the site on April 21, 1995. The data were analyzed to estimate ground water flow direction and gradients using two statistical methods: kriging and least squares, and were cross-checked by hand plotting.

Based on the ground water elevation data gathered from the monitoring wells, a ground water elevation contour map of the site was constructed (Figure 8). The horizontal ground

water gradient at the site is estimated to be approximately 0.002 with an apparent ground water flow direction to the east-northeast. The apparent ground water flow direction is inconsistent with the initial ground water flow directions calculated from previous site activities (east-southeast). However, this can be attributed to the additional data obtained from the newly installed monitoring wells that aided in producing a more accurate interpretation of ground water flow at the site. In addition, the collection of ground water elevation data over a larger area tends to provide more representative information regarding local ground water flow.

The apparent vertical gradient expressed at the AFTC-2A/AFTC-2B well nest is estimated to be 0.002 in a downward direction. The is consistent with the gradient information obtained from previous site activities.

4.3 Hydraulic Conductivity and Ground-Water Velocity

Aquifer tests were conducted during the previous site investigation to assess the hydraulic conductivity of the aquifer system at the site. Based on the information obtained from the tests, the geometric mean hydraulic conductivity (K) in the aquifer is estimated to be approximately 9.0×10^{-3} cm/sec.

The average ground water linear velocity was estimated using the following equation:

 $V = \underbrace{KI}_{n_e}$

Where: V = Average linear ground water velocity.

K = Geometric mean hydraulic conductivity.

I = Ground water gradient.

 n_e = Effective porosity of the aquifer material.

The ground water gradient was estimated to be 0.002, as discussed in Section 4.2. The effective porosity of the aquifer material was estimated to be 0.33 (McWhorter and Sunada,

07724-012-RPT

1988). Given the above estimated variables, the average linear ground water velocity is estimated to be:

$$V = (9 \times 10^{-3} \text{ cm/sec})(0.002) = 5.4 \times 10^{-5} \text{ cm/sec} = 56 \text{ feet/year}$$

0.33

It should be noted, however, that this is the average linear ground water velocity. The velocity of petroleum fractions in the ground water may be slower than that of the ground water due to retardation of the compounds by the soil materials, as discussed below.

4.4 Contaminant Transport

The rate of contaminant transport is calculated based on a retardation coefficient and the average linear ground water velocity. The retardation coefficient used in this calculation was derived from site-specific data gathered during the Phase I site investigation. The retardation coefficient of the contaminants found in the ground water at the site range from approximately 7 (benzene) to 38 (ethylbenzene), meaning that the rate of contaminant transport for benzene and ethylbenzene would be $^{1}/_{7}$ to $^{1}/_{38}$ of the average linear ground water velocity, respectively.

The contaminant transport rate based on site conditions is from approximately 1.5 feet to 8 feet per year. The rate of contaminant transport was estimated as the inverse of the retardation factor multiplied by the average linear ground water velocity (Freeze and Cherry, 1979).

Page 23

5.0 NATURE AND EXTENT OF IMPACTED AREA

5.1 Soil Quality

Based on the in-field analytical testing and laboratory analytical results, petroleum fractions are present in the unsaturated soils in the vicinity of the former gasoline UST and in the soils to the east of the UST location. The apparent horizontal boundary of the soil impact has been interpreted by the absence of petroleum fractions in the soil samples collected and analyzed from the following soil boring locations:

- AFTC-4, located approximately 50 feet north-northwest of the former UST location;
- AFTC-24, located approximately 150 feet east-northeast of the former UST location;
- AFTC-29, located approximately 600 feet east of the former UST location;
- AFTC-30, located approximately 325 feet southeast of the former UST location;
- AFTC-22, located approximately 300 feet south-southeast of the former UST location;
- AFTC-25, located approximately 175 feet south of the former UST location; and,
- AFTC-1, located approximately 20 west of the former UST location.

Based on the field screening, in-field analyses, and laboratory analytical results, soils within this area appear to be impacted with petroleum fractions from near the ground surface to a depth of approximately four feet bgs (the water table elevation). An isoconcentration map depicting the approximate area of BTEX impacts is presented in Figure 9.

5.2 Ground Water Quality

Ground water impacts that exceed the PAL were identified in the ground water samples collected from each of the geoprobe boring locations; however, the ground water sample collected from AFTC-4 did not exceed the ES for any of the compounds detected. In addition, the ground water samples collected from AFTC-2A, AFTC-2B, AFTC-27, AFTC-28, and AFTC-30 contained petroleum fraction concentrations above the PAL; however, the PVOC concentrations detected in the ground water sample collected from AFTC-2B do not exceed the ES. An isoconcentration map depicting the approximate extent of the BTEX concentrations in the ground water at the site is presented in Figure 10.

Based on the field analytical testing and the laboratory analytical results, the approximate horizontal extent of the ground water impacts have been identified to the north, east, south, and west at the site. However, ground water impacts were identified at the location of monitoring wells AFTC-27 (east-northeast of the former UST location) and AFTC-30 (southeast of the former UST location). Therefore, the extent of the ground water impacts to the east-northeast and southeast is unknown.

In addition, a free floating product layer was noted on the ground water at the location of monitoring well AFTC-28. The initial product thickness was reported to be 0.91 feet with a post-development thickness of 0.86 feet. The chemical composition of the free product is unknown at this time. However, based on field observations, it is assumed to be a petroleum product for which the source is related to site land use practices.

07724-012-RPT

6.0 CONCLUSIONS

Based on the results of the Phase II subsurface investigation activities and previous site activities, Dames & Moore concludes that impacts at the site are related to the operation of the UST and past and present land use activities.

Regarding the soils at the site, Dames & Moore concludes the following:

- Soils containing petroleum fractions in excess of closure criteria are present at the site.
- Based on the laboratory analytical results, field analytical testing, and in-field PID screening, a perimeter of soil impacts in this area has been defined. However, potential impacts related to other land use practices at the site may be present in areas not yet investigated.
- The soil impacts do not extend off-site.

Regarding the ground water impacts at the site, Dames & Moore concludes the following:

- The approximate horizontal extent of the ground water impacts has been identified to the north, east, south, and west at the site. However, the extent of impact to the east-northeast (downgradient) and southeast of the former UST location has not been defined.
- Contaminant concentrations in the ground water are in excess of the NR 140 PAL and ES.
- The ground water impacts do not extend off-site.
- A downward vertical hydraulic gradient was identified at the AFTC-2A/AFTC-2B well nest and trace concentrations of petroleum fractions were

identified in the ground water collected from piezometer AFTC-2B. Based on these findings, the vertical extent of ground water impacts requires further assessment.

• The presence of free floating product on the ground water at the location of monitoring well AFTC-28 is contributing to the ground water impacts at the site.

07724-012-RPT

7.0 RECOMMENDATIONS

Based on the findings of the site investigation activities, Dames & Moore recommends the following activities be conducted to further assess the extent of ground water impacts at the site and to evaluate the extent of the free floating product layer identified at the location of monitoring well AFTC-28.

- Install a minimum of three additional piezometers at the site to assess the vertical extent of the impact. Due to the reported shallow depth to bedrock (approximately 40 feet), it may also be necessary to install at least one monitoring well that is completed within the bedrock.
- Install ground water monitoring wells to the east-northeast and south to further assess the horizontal extent of the ground water impacts in these directions.
- Initiate free product recovery operations from the location of monitoring well AFTC-28. Viable options include: an automated "skimmer" pump system to recover free product, periodic product removal with a vacuum pump truck, or a dual phase recovery system to recover product and ground water.

07724-012-RPT DAMES & MOORE

Page 28

8.0 LIMITATIONS

Dames & Moore certifies to the best of its knowledge and belief that the information contained herein is accurate and complete. The site investigation was conducted in accordance with accepted practices for the environmental consulting profession. Information provided by others was accepted as true and complete and the on-site inspection process was limited to only those activities that were immediately visible and obvious.

Due to the limitations of the inspections and investigative process and the necessary use of unverified data furnished by others, users of this report relying on information contained herein are cautioned that Dames & Moore cannot assume liability if the actual conditions vary from the information contained in this report. The information, conclusions and recommendations provided in this report apply only to the Ansul Fire Technology Center property, Marinette, Wisconsin, as it existed at the time of the investigation. If site uses, conditions, regulations or laws change, conclusions and recommendations may no longer apply.

Respectfully submitted,

DAMES & MOORE, Inc.

Jeffrey H. Danko Hydrogeologist

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ONAL GEOMETRIA

Pamela S. Burnett Managing Principal-In-Charge

anela S. Burnett

9.0 CERTIFICATION STATEMENT

I, Jeffrey H. Danko, hereby certify that I am a hydrogeologist as the term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Signature and Title

Date

10.0 REFERENCES CITED

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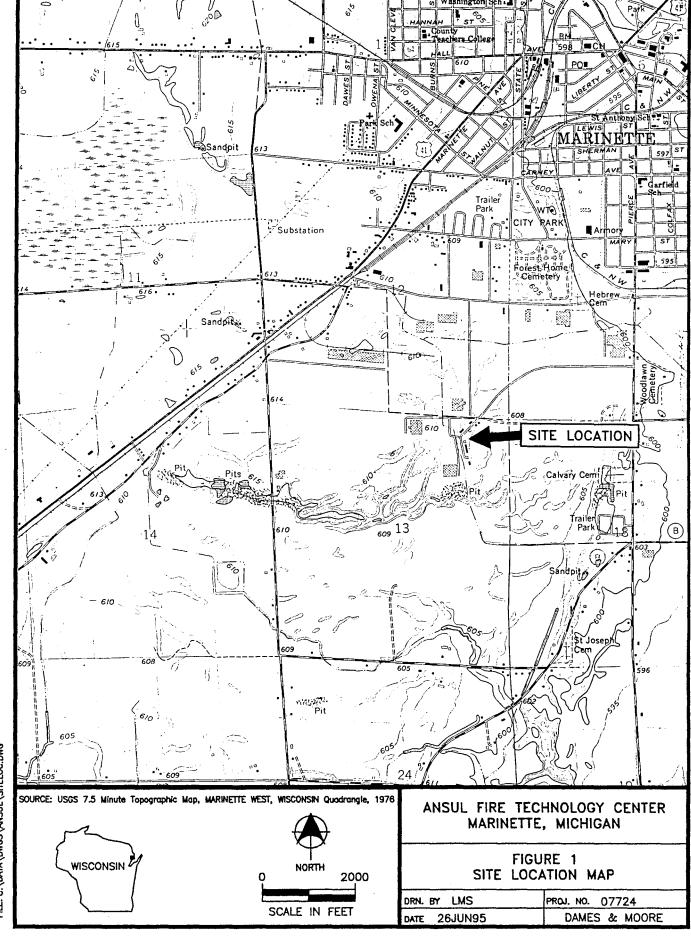
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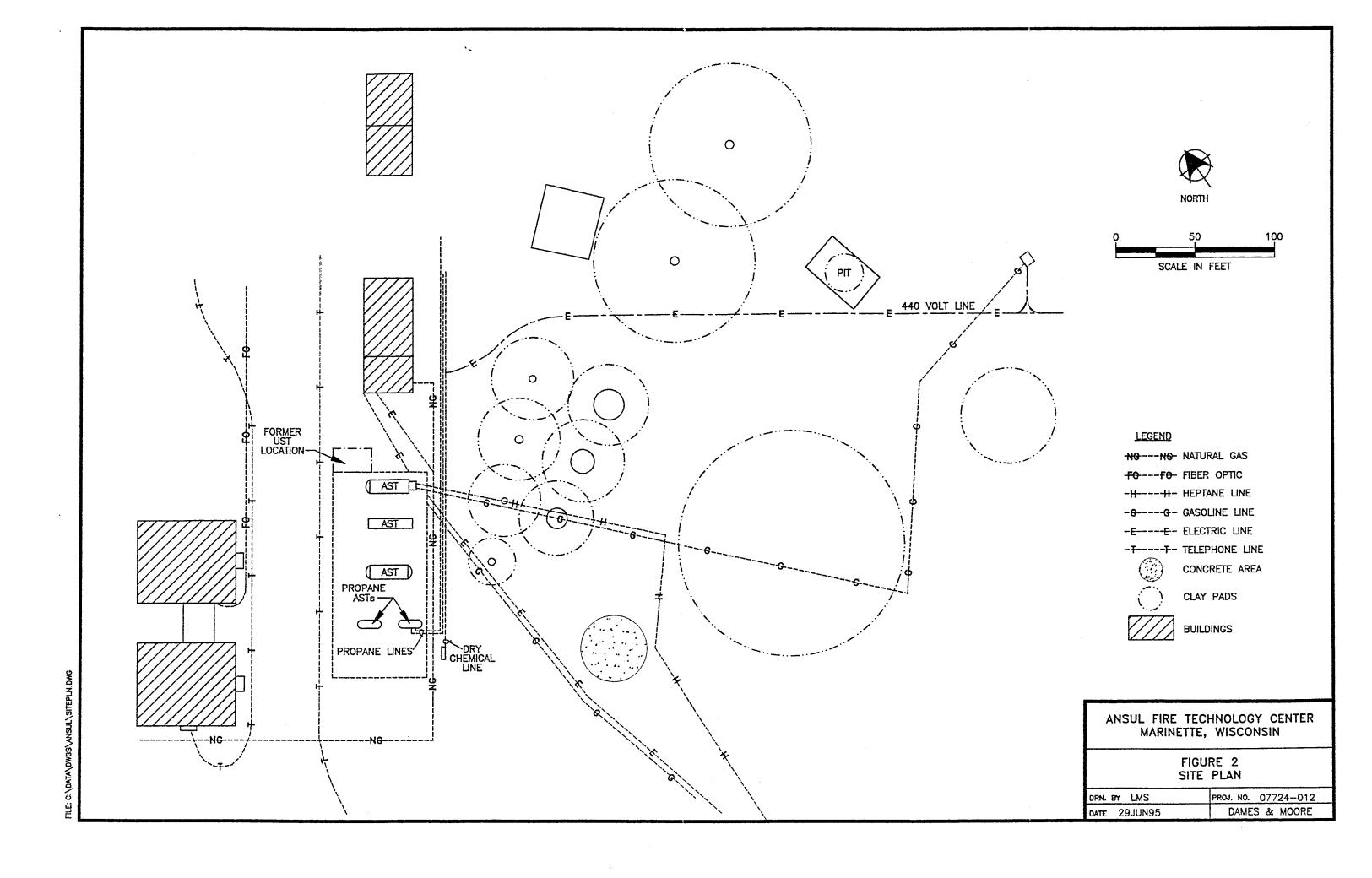
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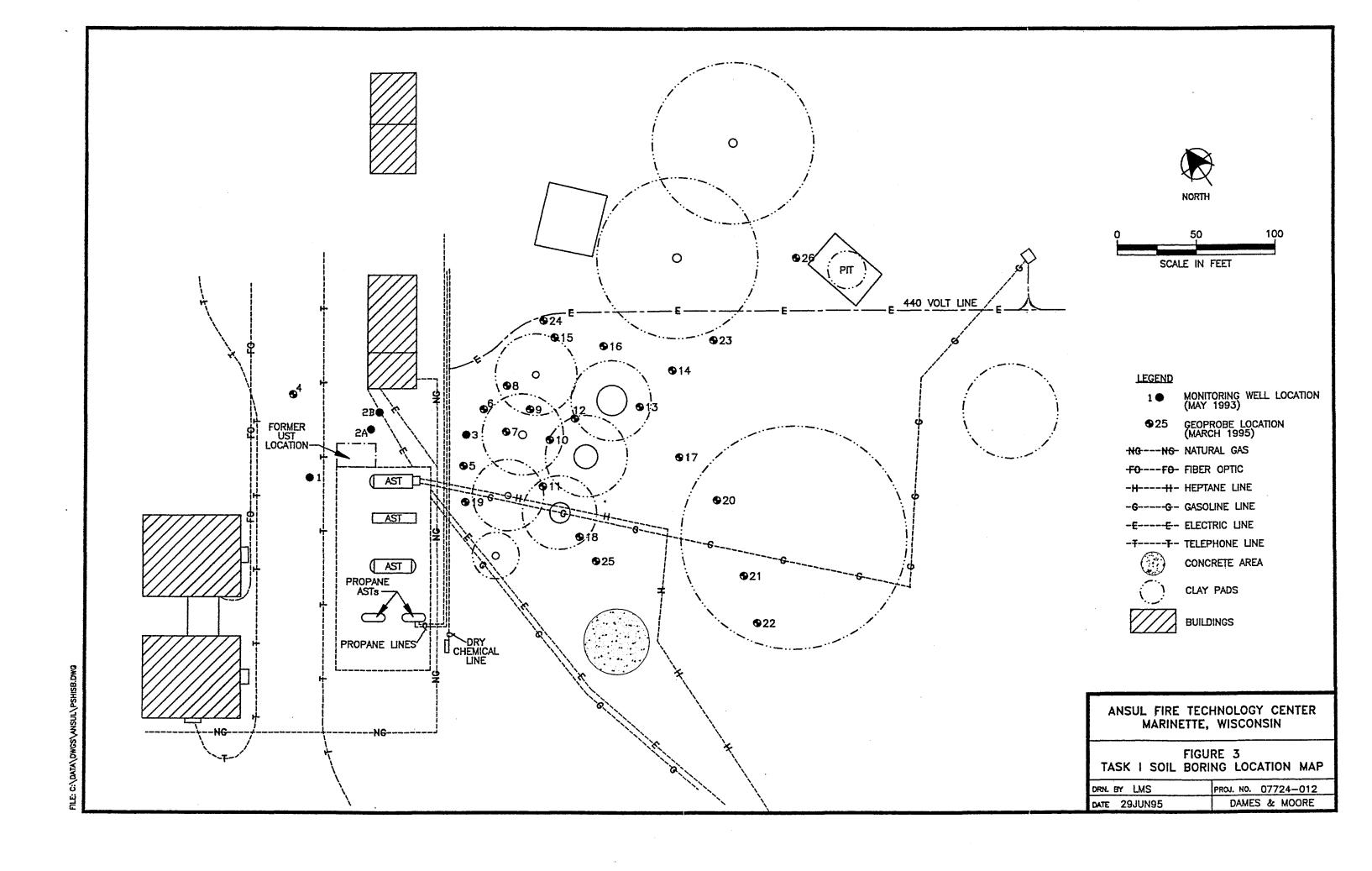
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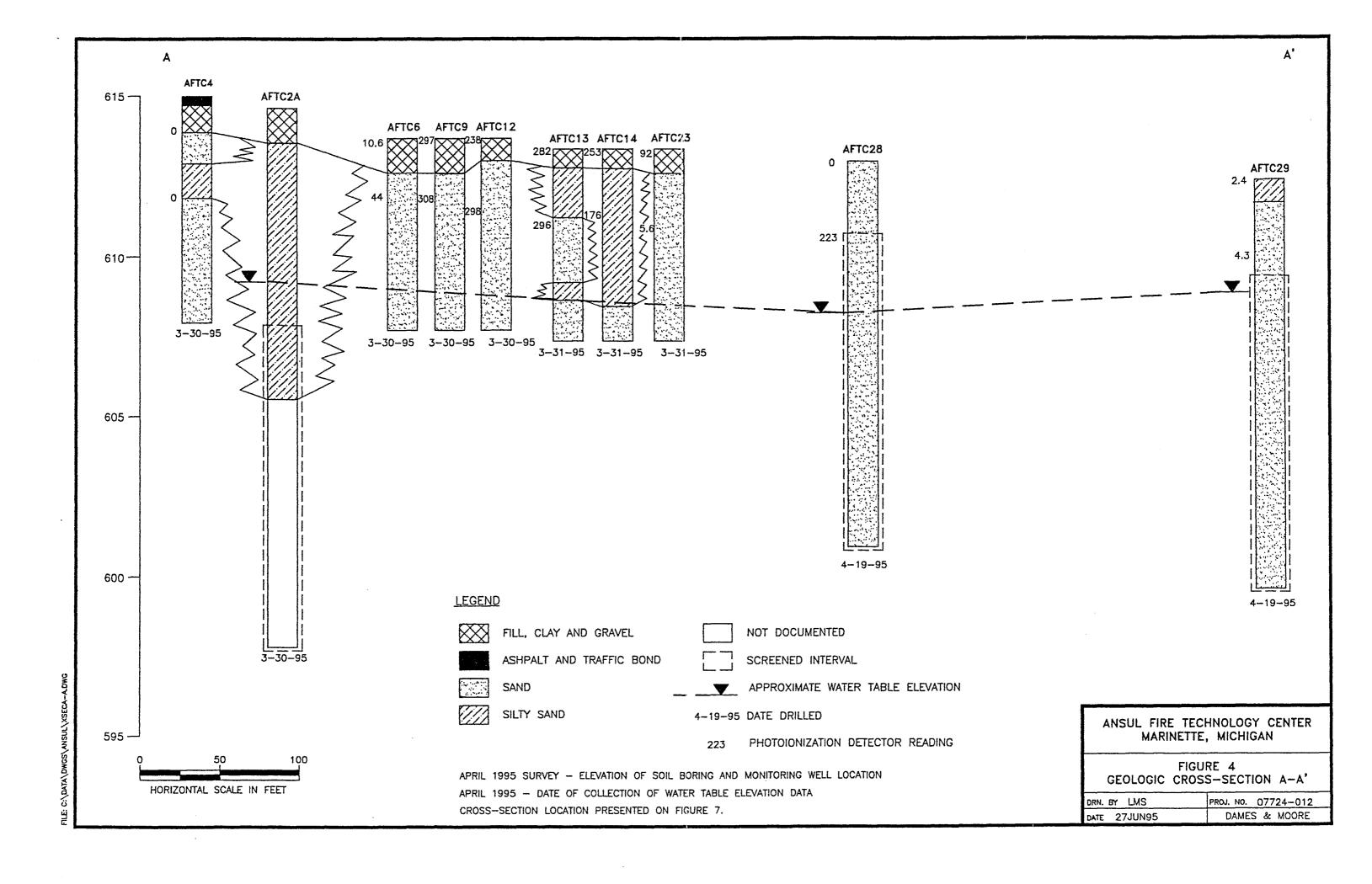
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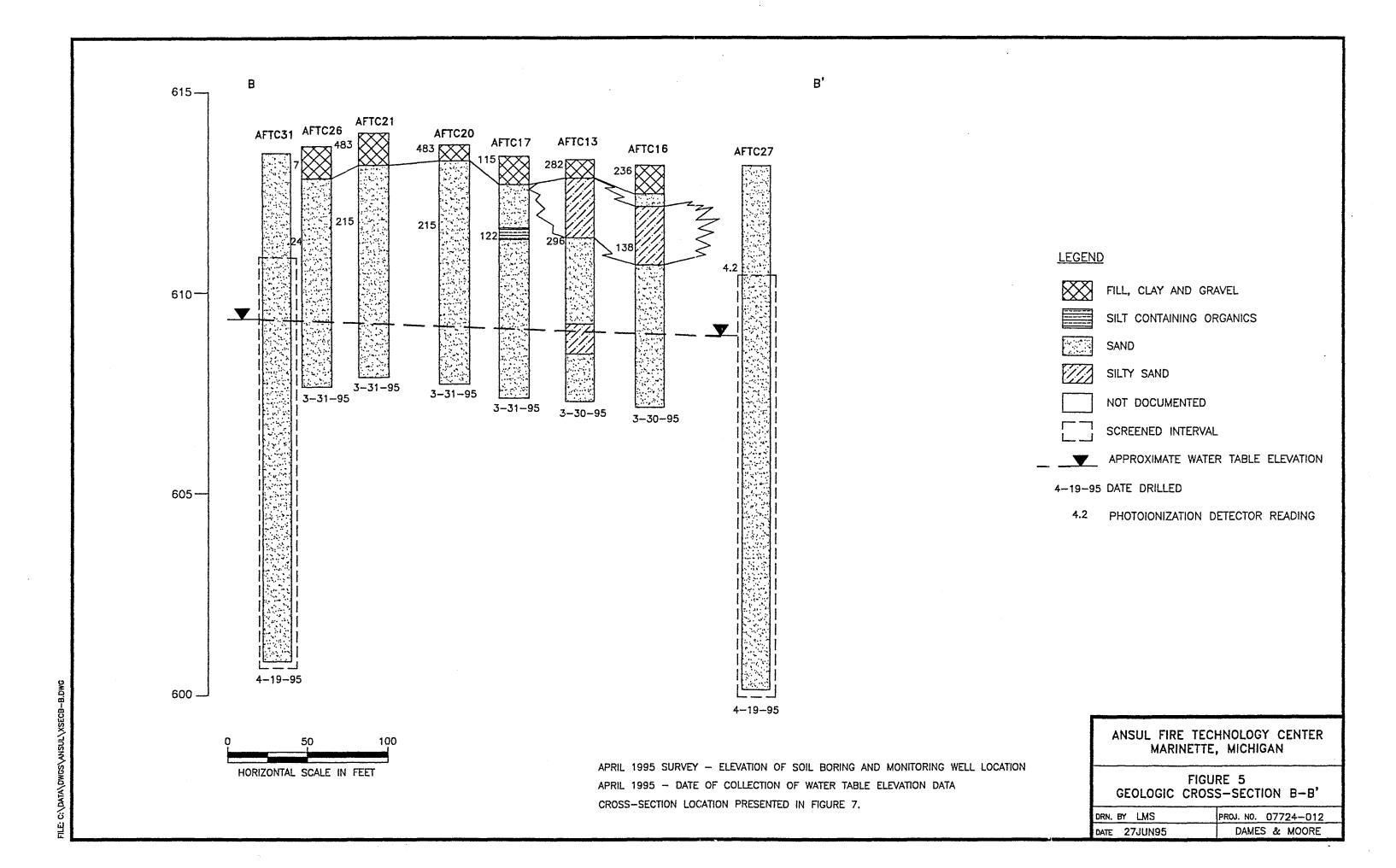


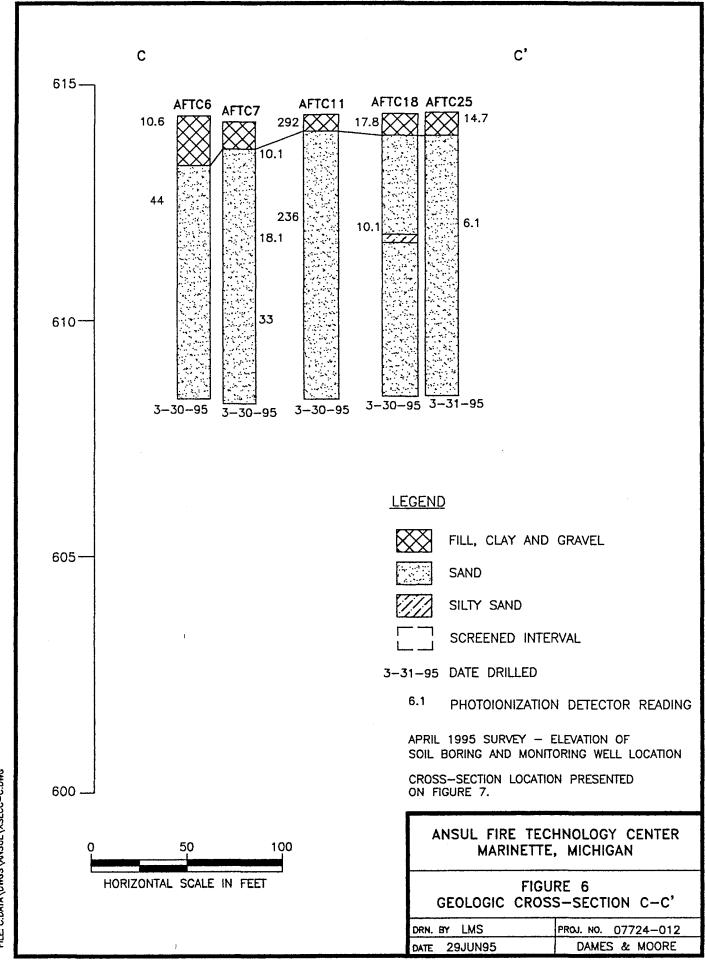
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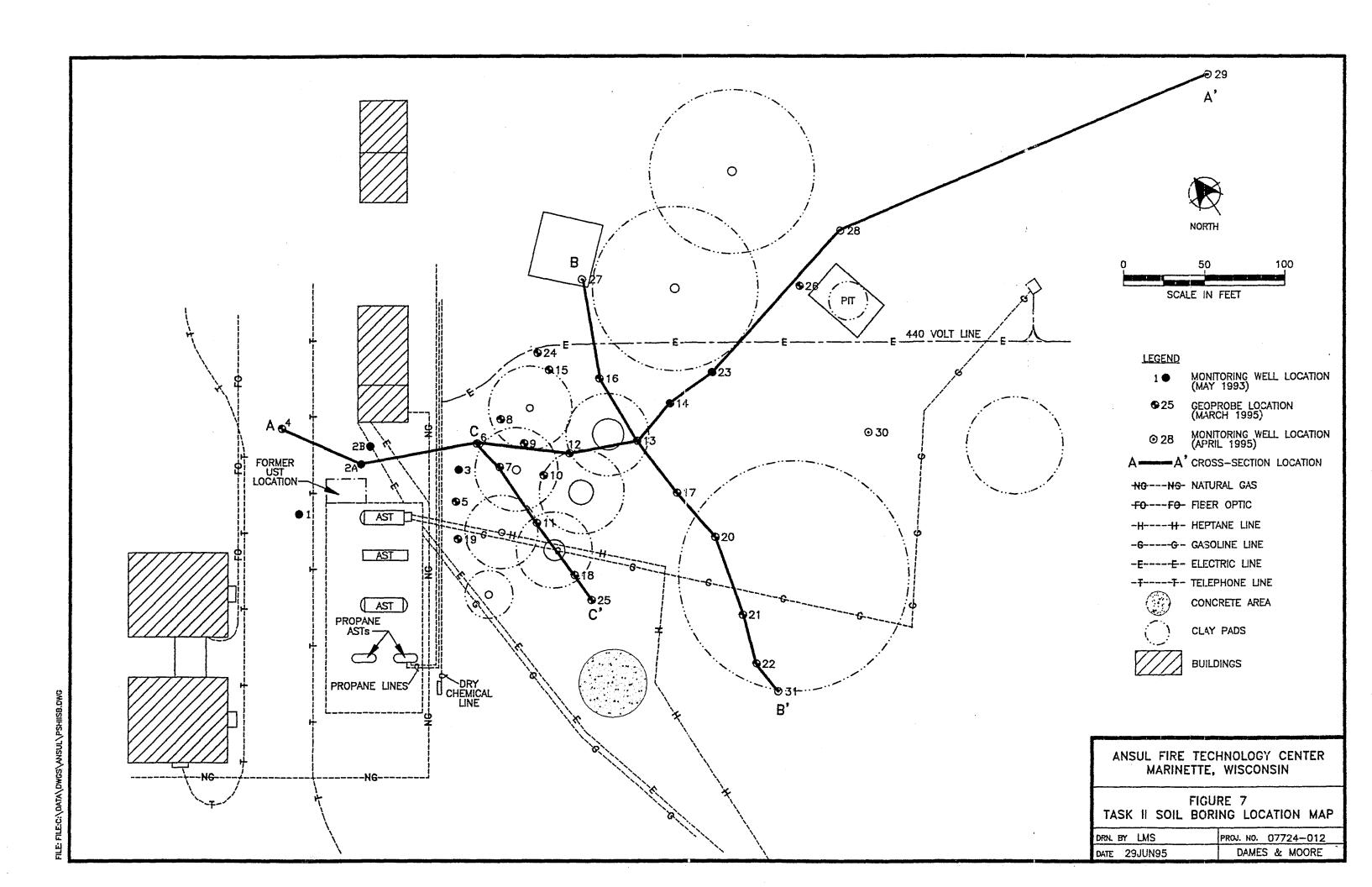


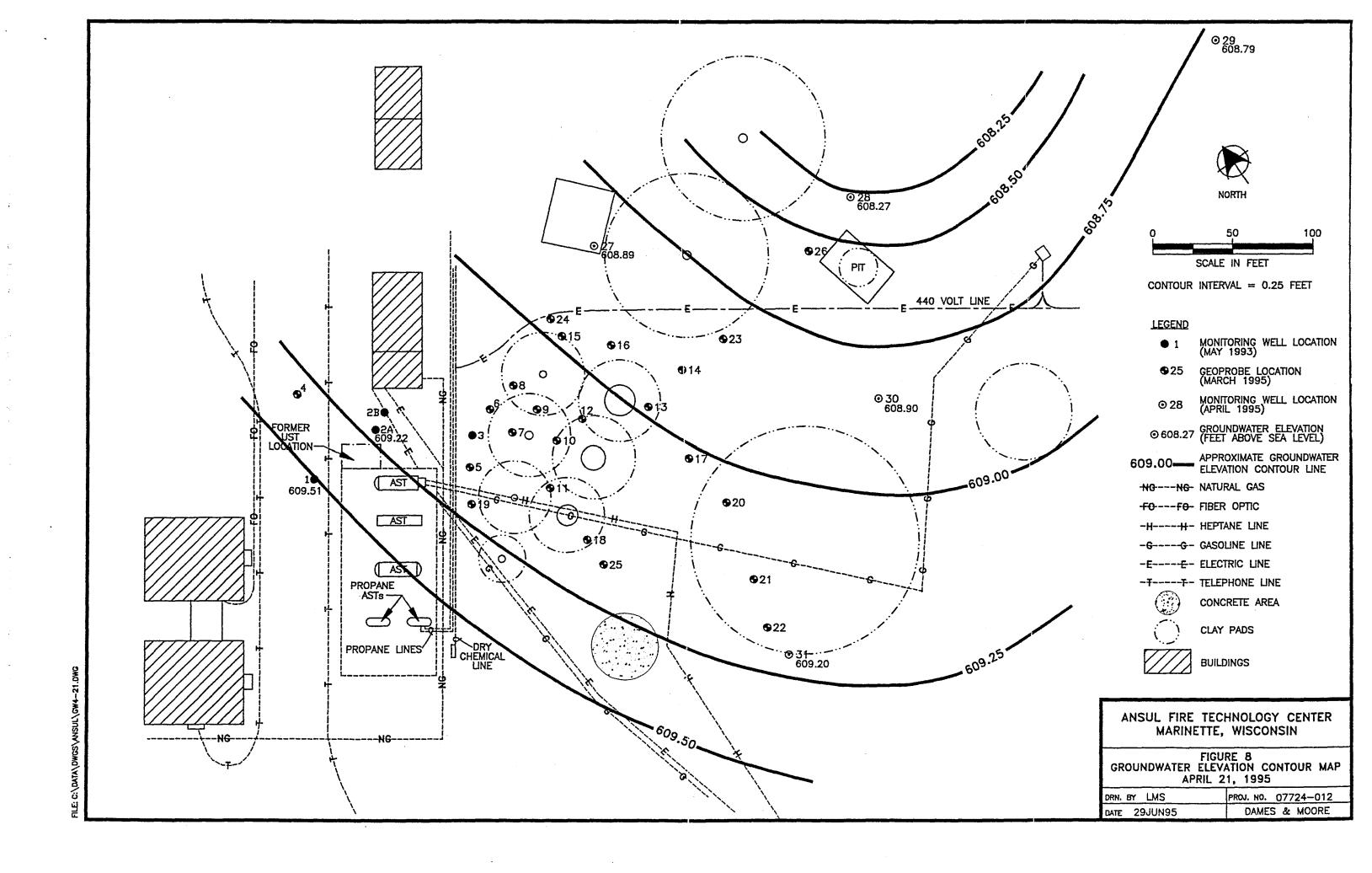


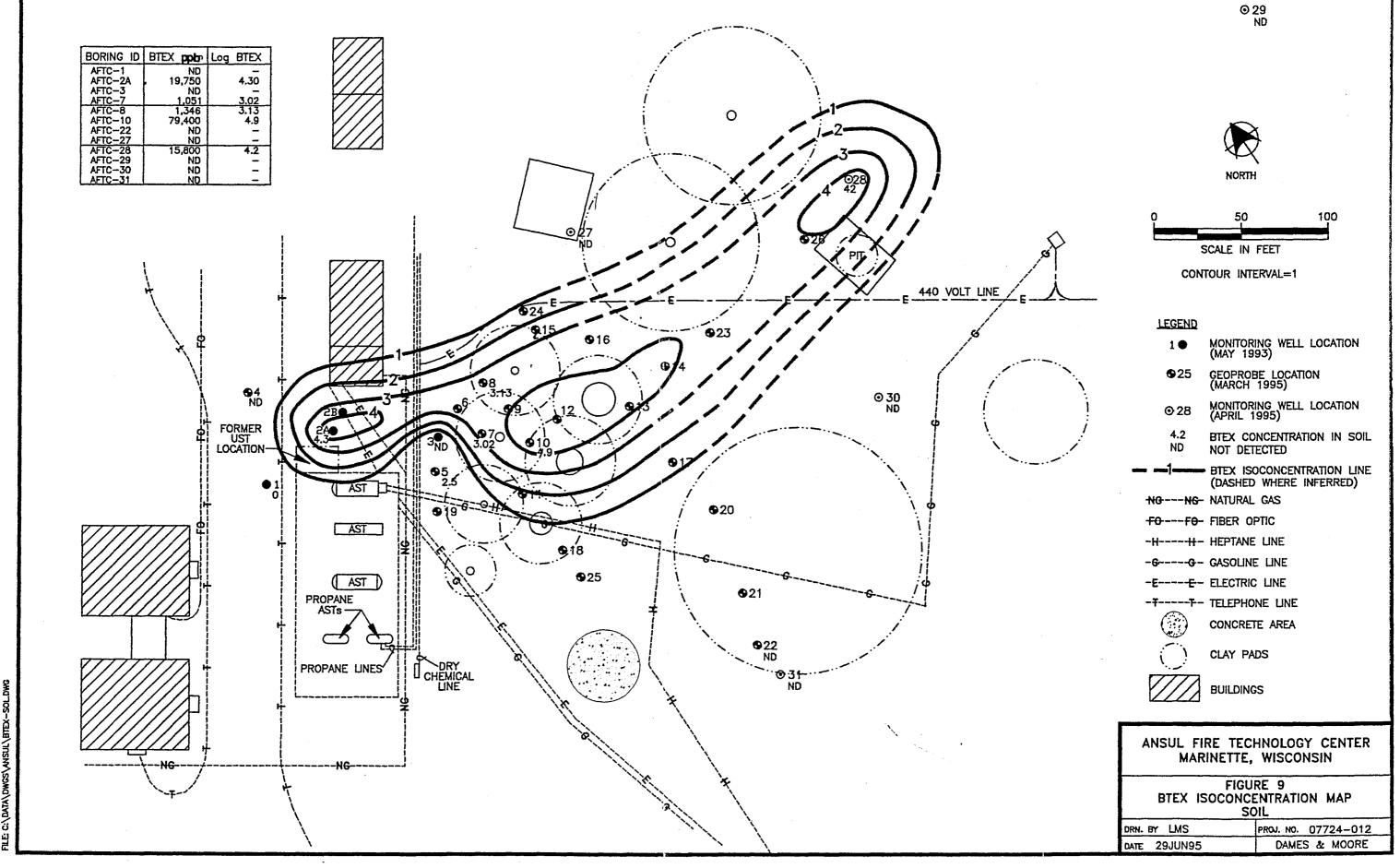




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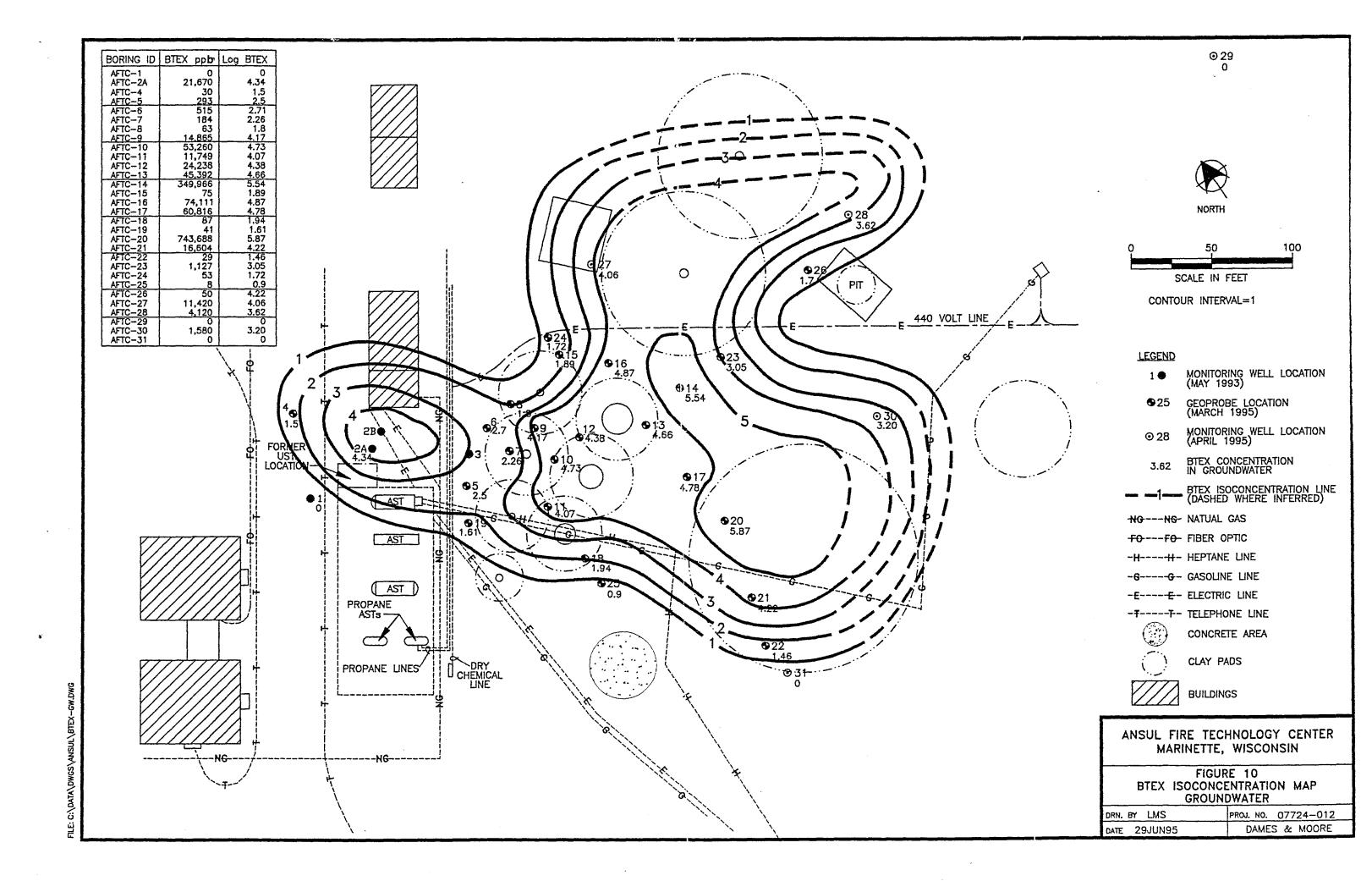


TABLE 1 PID FIELD SCREENING RESULTS Ansul Fire Technology Center Marinette, Wisconsin

Boring ID	Sample Interval	PID Reading	Boring ID	Sample Interval	PID Reading
	(in feet)	(Instrument Units)	_	(in feet)	(Instrument Units)
AFTC-4	1 to 2	0.0	AFTC-17	0 to 2	115.0
AFTC-4	2 to 3	0.0	AFTC-17	2 to 4	122.0
AFTC-5	0 to 2	129.0	AFTC-18	0 to 2	17.8
AFTC-5	2 to 4	1.0	AFTC-18	2 to 4	10.1
AFTC-6	0 to 2	10.6	AFTC-19	0 to 2	11.7
AFTC-6	2 to 4	44.0	AFTC-19	2 to 4	67.0
AFTC-7	0 to 2	10.1	AFTC-20	0 to 2	287.0
AFTC-7	2 to 4	18.1	AFTC-20	2 to 4	213.0
AFTC-7	4 to 4.4	33.0	AFTC-21	0 to 2	48.3
AFTC-8	0 to 2	248.0	AFTC-21	2 to 4	21.9
AFTC-8	2 to 4	238.0	AFTC-22	0 to 2	2.5
AFTC-9	0 to 2	287.0	AFTC-22	2 to 4	2.0
AFTC-9	2 to 4	308.0	AFTC-23	0 to 2	92.0
AFTC-10	0 to 2	292.0	AFTC-23	2 to 4	5.6
AFTC-10	2 to 4	298.0	AFTC-24	0 to 2	9.1
AFTC-11	0 to 2	. 292.0	AFTC-24	2 to 4	10.1
AFTC-11	2 to 4	236.0	AFTC-25	0 to 2	14.7
AFTC-12	0 to 2	238.0	AFTC-25	2 to 4	6.1
AFTC-12	2 to 4	276.0	AFTC-26	0 to 2	7.0
AFTC-13	0 to 2	282.0	AFTC-26	2 to 4	24.0
AFTC-13	2 to 4	296.0	AFTC-27	2 to 4	4.2
AFTC-14	0 to 2	255.0	AFTC-28	2 to 4	223.0
AFTC-14	2 to 4	178.0	AFTC-29	0 to 2	2.4
AFTC-15	0 to 2	178.0	AFTC-29	2 to 4	4.3
AFTC-15	2 to 4	224.0	AFTC-30	0 to 2	44.3
AFTC-16	0 to 2	236.0	AFTC-30	2 to 4	698.0
AFTC-16	2 to 4	138.0	AFTC-31	2 to 4	0.2

PID - Photoionization Detector

Instrument Units - parts per million based on calibration using 100 ppm isobutylene gas in air and air (zero gas) Boring ID is expressed as a number on the figures (i.e., AFTC-4 is identified as 4)

TABLE 2 ELEVATION SURVEY DATA

Ansul Fire Technology Center Marinette, Wisconsin

Well/Boring ID	Elevation	Depth to	Depth to	Water	Corrected
'		Water	Product	Elevation	Water Elev.*
AFTC-1 TOC	614.29	4.78		609.51	
AFTC-2A TOC	614.25	5.03		609.22	
AFTC-2B TOC	614.13	4.93		609.20	
AFTC-4	614.90				
AFTC-5	613.74				
AFTC-6	613.74				
AFTC-7	613.67				
AFTC-8	613.53		"		
AFTC-9	613.72				
AFTC-10	613.66				
AFTC-11	613.76				
AFTC-12	613.61				
AFTC-13	613.41				
AFTC-14	NS				
AFTC-15	613.38				
AFTC-16	613.31				
AFTC-17	613.45			1	
AFTC-18	613.77				
AFTC-19	613.83				
AFTC-20	613.82				
AFTC-21	614.14				
AFTC-22	NS				
AFTC-23	613.15				
AFTC-24	613.45				
AFTC-25	613.78				
AFTC-26	613.78				
AFTC-27 TOC	612.95	4.06		608.89	
AFTC-28 TOC	612.70	5.08	4.22	607.62	608.27
AFTC-29 TOC	615.01	6.22		608.79	
AFTC-30 TOC	612.41	3.51		608.90	
AFTC-31 TOC	613.22	4.02		609.20	

NS- Not surveyed

Measured elevations in feet above sea level

TOC - top of casing

Depth to Water and Product in feet below top of casing

* - Elevation corrected for the effect of floating product on the ground water

TABLE 3 FIELD ANALYTICAL TESTING Ansul Fire Technology Center Marinette, Wisconsin

Boring ID	Compounds							
	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX			
AFTC-4	4	11	ND.	15	30			
AFTC 5	118	90	18	67	293			
AFTC-6	132	28	81	274	515			
AFTC-7	23	118	6	37	184			
AFTC-7/2*	175	138	135	603	1,051			
AFTC-8	26	9	6	22	63			
AFTC-8/2*	233	152	173	788	1,346			
AFTC-9	2,513	3,658	2,370	6,324	14,865			
AFTC-10	21,027 ~	16,037	2,781	13,415	53,260			
AFTC-11	1,480	4,270	1,093	4,906	11,749			
AFTC-12	9,760 •	9,358	738	4,382	24,238			
AFTC-13	20,108	4,153	4,797	16,334	45,392			
AFTC-14	127,210	89,933	19,046	113,777	349,966			
AFTC-15	21	15	6	33	75			
AFTC-16	14,548	20,475	7,045	32,043	74,111			
AFTC-17	35,082	16,810	4,375	4,549	60,816			
AFTC-18	44	15	7	21	87			
AFTC-19	8	16	10	7	41			
AFTC-20	472,578	164,373	27,647	79,090	743,688			
AFTC-21	10,138 🔻	2,866	648	2,952	16,604			
AFTC-22	- 6	5	3	15	29			
AFTC-23	374	498	89	166	1,127			
AFTC-24	24	7	11	11	53			
AFTC-25	5	3	ND	ND	8			
AFTC-26	8	9	ND	33	50			

ND - not detected

Concentrations expressed in parts per billion

BTEX-benzene, toluene, ethylbenzene, and xylenes

Shaded areas represent concentrations that exceed the Wis. Admin. Code ch. NR140 Preventive Action Limits or NR 700 soil cleanup criteria

*- soil sample collected from 2-4 foot interval, all other samples are ground water

TABLE 4 LABORATORY ANALYTICAL RESULTS -SOIL

Ansul Fire Technology Center Marinette, Wisconsin

	Sample ID	AFTC-4-2	AFTC-10-2	AFTC-22-2	AFTC-27/2-4	AFTC-28/2-4	AFTC-29/2-4	AFTC-30/2-4	AFTC-31/2-4
Analyte	Sample Interval	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4
GRO (mg/kg)		ND	4200	ND	ND	490	ND	ND	ND
Benzene (ug/kg)		ND	600	ND	ND	ND	ND	ND	ND
Ethylbenzene (ug/kg)		ND	2200	ND	ND	1600	ND	ND	ND
Methyl-tertiary-butyl-ether (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND
Toluene (ug/kg)		ND	1600	ND	ND	1200	ND	ND	ND
Xylenes (ug/kg)		ND	75000	ND	ND	13000	ND	ND	ND
1,2,4-trimethylbenzene (ug/kg)		ND	32800	ND	ND	7600	ND	ND	ND
1,3,5-trimethylbenzene (ug/kg)		ND	53300	ND	ND	26000	ND	ND	ND
Total Lead (mg/kg)		1.4	2.5	2.8	1	2.8	0.7	0.8	0.9

GRO - Gasoline Range Organics

Sample Interval expressed in feet below ground surface

ND - not detected

mg/kg - milligrams per kilogram

ug/kg - micrograms per kilogram

Shaded areas represent detections above Wis. Admin. Code ch. NR700 cleanup criteria (criteria have not been established for 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, methyl-tertiary-butyl-ether, and lead)

TABLE 5 LABORATORY ANALYTICAL RESULTS -GROUND WATER

Ansul Fire Technology Center Marinette, Wisconsin

Analyte	Sample ID							
	AFTC-1	AFTC-2A	AFTC-2B	AFTC-9*	AFTC-24*	AFTC-25*		
GRO (mg/l)	ND	24	ND	NT	NT	NT		
Benzene (ug/l)	ND	9000	3	4500	ND	ND		
Ethylbenzene (ug/l)	ND	870	ND	2800	ND	ND		
MTBE (ug/l)	ND	2600	4	1900	ND	ND		
Toluene (ug/l)	ND	9300	1	2800	ND	ND		
Xylenes (ug/l)	ND	2500	ND	35000	ND	ND		
1,2,4-trimethylbenzene (ug/l)	ND	700	ND	5400	ND	ND		
1,3,5-trimethylbenzene (ug/l)	ND	700	ND	19000	ND	ND		
Total Lead (mg/l)	ND	0.02	. ND	NT	NT	NT		

Analyte	Sample ID							
	AFTC-26*	AFTC-27	AFTC-28	AFTC-29	AFTC-30	AFTC-31		
GRO (mg/l)	NT	15	62	ND	13	ND		
Benzene (ug/l)	27	6800	810	ND	180	ND		
Ethylbenzene (ug/l)	11	920	410	ND	ND	ND		
MTBE (ug/l)	ND	2100	ND	ND	15000	ND		
Toluene (ug/l)	84	2000	1300	ND	1400	ND		
Xylenes (ug/l)	490	1700	1600	ND	ND	ND		
1,2,4-trimethylbenzene (ug/l)	290	160	870	ND	ND	ND		
1,3,5-trimethylbenzene (ug/l)	55	490	3000	ND	140	ND		
Total Lead (mg/l)	NT	0:009	0.005	0,002	0.002	ND		

GRO - Gasoline Range Organics

NT - not tested

was constructed

* - sample collected during Task 1, no monitoring well

ND - not detected

mg/l - milligrams per liter

ug/l - micrograms per liter

MTBE - methyl-tertiary-butyl-ether

Shaded areas represent concentrations above the Preventive Action Limit (Wis. Admin. Code ch. NR 140)

TABLE 1

RESULTS OF THE BTEX ANALYSIS PERFORMED AT ANSUL FIRE PROTECTION MARINETTE, WI

BORING	SAMPLE	В	T	EB	MPX	OX
	D	(PPB)	(PPB)	(PPB)	(PPB)	(PPB)
1	GW	4	11	ND	ND	15
2	GW	118	90	18	53	14
3	GW	132	28	81	135	139
4	GW	23	118	6	22	15
4	2 (SOIL)	175	138	· 135	439	164
5	GW	26	9	6	15	7
5	2(SOIL)	233	152	173	537	251
6	GW	2513	3658	2370	3717	2607
7	GW	21027	16037	2781	8216	5199
8	GW	1480	4270	1093	3344	1562
9	GW	9760	9358	738	3144	1238
10 -	GW	20108	4153	4797	10916	5418
11	GW	127210	89933	19046	81849	31928
12	GW	21	15	6	18	15
13	GW	14548	20475	7045	22982	9061
14	GW	35082	16810	4375	2572	1977
15	GW	44	15	7	14	7
16	GW	8	· 16	10	3	4
17	GW	472578	164373	27647	75277	3813
18	GW	10138	2866	648	2153	799
19	GW	6	5	3	11	4
20 ·	GW	374	498	89	102	64
21	GW	24	7	11	6	5
22	GW	5	3	ND	ND	ND
23	GW	8	9	ND	22	11

B - BENZENE T - TOLUENE EB - ETHYLBENZENE MPX - META, PARAXYLENE OX - ORTHOXYLENE GW - GROUNWATER SAMPLE ND - NOT DETECTED

State of Wisconsin Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(1) GENERAL INFORMATION	(2) FACILITY NAME
Well/drillhole/Borehole County	Original Well Owner (If Known)
Location MARINETTE	
E	Present Well Owner
NW 1/4 of NE 1/4 Sec. 13; T. 31 N; R. 27 X W	ANSUL FIRE TECHNOLOGY CENTER
(If applicable)	Street or Route One Stanton Street
Gov't Lot Grid Number	
Grid Location	City, State, Zip Code
ft. ☐ N. ☐ S., ft. ☐ E. ☐ W.	Marinette, WI 54143
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No
Charles A J.L. C.W. 11	Reason For Abandonment
Street Address of Well Pierce Avenue	Soil Boring Completion
City, Village	Date of Abandonment
City, vinage City of Marinette	03/30/95
WELL/DRILLHOLE/BOREHOLE INFORMATION	0000075
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 4.0
(Date) 03/30/95	Pump & Piping Removed? Yes No X Not Applicable
(50.0)	Liner(s) Removed?
☐ Monitoring Well Construction Report Available?	Screen Removed?
Water Well Yes No	Casing Left in Place? Yes No
Drillhole	If No, Explain
X Borehole	
	Was Casing Cut Off Below Surface? Yes X No
Construction Type:	Did Sealing Material Rise to Surface? Yes X No
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug	Did Material Settle After 24 Hours? Yes X No
TOTHER (Specify) GEOPROBE	If Yes, Was Hole Retopped?
	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
▼ Unconsolidated Formation ■ Bedrock	Dump Bailer X Other (Explain) GRAVITY
Total Well Depth (ft.) 7.0 Casing Diameter (ins.)	(6) Sealing Materials For monitoring wells and
(From groundsurface) Casing Depth (ft.)	Neat Cement Grout monitoring well boreholes only
	Sand-Cement (Concrete) Grout
Lower Drillhole Diameter (in.) 1.1	Concrete Bentonite Pellets
Down Diamote (an)	Clay-Sand Slurry X Granular Bentonite
Was Well Annular Space Grouted? Yes X No Unknown	
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	
Sealing Material Used	From (Ft.) To (Ft.) No. Yards, (Circle or Volume or Mud Weight
Post-it- Complete (Complete Post-it-)	
Bentonite Crumbles (Granular Bentonite)	Surface 7.0
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Briohn Environmental Contractors	Date Received/Inspected District/County
Signature of Person Doing Work Date Signed	1
an () for 6/27/95	Reviewer/inspector Complying Work
Street or Route Telephone Number	Noncomplying Work
W233 N2800 Roundy Cir. W. (414)-524-2080	Follow-up Necessary
City, State, Zip Code]
Suite 101, Pewaukee, WI 53072	07724-012
DNR/CO	JNTY U//27-012

Form 3300-5B

Rev. 3-94

(I) GENERAL INFORMATION		(2) FACIL	ITY NAME		
Well/drillhole/Borehole Location	County	Origina	l Well Owne	r (If Known)	
	MARINETTE	Dracant	Well Owner		
	13; T. 31 N; R. 27 X W	ANSUL I	TRE TECH	NOLOGY CENTER	
(If applicable) Gov't Lot	Grid Number		r Route ton Street		
Grid Location			State, Zip Co		
ft. N. S.,	ft E W.		e, WI 54143		ole) WI Unique Well No
	· · · · · · · · · · · · · · · · · · ·	AFTC-5	vven ivo, an	wor Name (II Applicat	WI Offique Well No
Street Address of Well Pierce Avenue			For Abandor		
City, Village	· · · · · · · · · · · · · · · · · · ·		Abandonme		····
City of Marinette				03/30/95	
WELL/DRILLHOLE/BOREHOLE		Ten s			
(3) Original Well/Drillhole/Borehole (Construction Completed On		o Water (Fee	·	737 87 37 4 4 17 43
(Date) 03/30/95			t Piping Rem		No X Not Applicable
☐ Monitoring Well	Construction Report Available?	-) Removed? Removed?		No X Not Applicable No X Not Applicable
Water Well	Yes No	1	Left in Place		No Ki Not Applicable
Drillhole		If No, H			
X Borehole	•	[
			_		Yes X No
Construction Type: Drilled Driven	(Sandpoint) Dug		•		Yes X No
X Other (Specify) GEOPROBE			, Was Hole R		Yes X No Yes X No
					<u> </u>
Formation Type:		1		Placing Sealing Mater	
X Unconsolidated Formation	☐ Bedrock	. —	ductor Pipe-(np Bailer		tor Pipe-Pumped Explain) GRAVITY
Total Well Depth (ft.) 6.0	Casing Diameter (ins.)	(6) Sealing			monitoring wells and
(From groundsurface)	Casing Depth (ft.)	1''	t Cement Gro		itoring well boreholes only
		. =	•	oncrete) Grout	
Lower Drillhole Diameter (in.)	<u>l.1</u>	. —	crete		entonite Pellets
Was Well Annular Space Grouted?	Yes X No Unknow	. —	y-Sand Slurry tonite-Sand S	. —	Franular Bentonite Sentonite- Cement Grout
If Yes, To What Depth?	Feet	1	pped Bentoni	• • • • • • • • • • • • • • • • • • • •	entonic- Cement Grout
(7)		1	1		Mix Ratio
Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One	or Mud Weight
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0		
			<u> </u>		
	<u></u>	<u> </u>			
(8) Comments:					
(9) Name of Person or Firm Doing Se	aling Work	((10))	FOR	D)SKEOKEGONSKY	157:20)(18Y
Briohn Environmental Contra	•	1,000,000,000,000	Received/Ins		District/County
Signature of Person Doing Work	Date Signed	 			
and for	6/27/95	Revi	ewer/inspecto	л [Complying Work
Street or Route	Telephone Number				Noncomplying Work
W233 N2800 Roundy Cir. W. City, State, Zip Code	(414)-524-2080	4 Irolla	w-up Necess	ary	
Suite 101, Pewaukee, WI 53072	1				
	DNR/CO	שאדע	07724-012	Z	

State of Wisconsin Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(i) GENERAL INFORMATION	(2) FACILITY NAME
Well/drillhole/Borehole County	Original Well Owner (If Known)
Location	Original West Owner (It Idiows)
NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 X W	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER
(If applicable)	Street or Route One Stanton Street
Grid Location Grid Number	City, State, Zip Code
ft. ☐ N. ☐ S., ft. ☐ E. ☐ W.	Marinette, WI 54143
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No AFTC-6
Street Address of Well Pierce Avenue	Reason For Abandonment
City, Village	Soil Boring Completion Date of Abandonment
City of Marinette	03/30/95
WELL/DRILLHOLE/BOREHOLE INFORMATION	
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 4.0
(Date) 03/30/95	Pump & Piping Removed? Yes No X Not Applicable
•	Liner(s) Removed? Yes No X Not Applicable
☐ Monitoring Well Construction Report Available?	Screen Removed?
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes X No
Drillhole	If No, Explain
X Borehole	Was Casing Cut Off Below Surface? Yes X No
Construction Times	Was Casing Cut Off Below Surface? Yes X No Did Sealing Material Rise to Surface? Yes X No
Construction Type: Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes X No
X Other (Specify) GEOPROBE	If Yes, Was Hole Retopped? Yes X No
Formation Type:	(5) Required Method of Placing Sealing Material
X Unconsolidated Formation Bedrock	Conductor Pipe-Gravity Conductor Pipe-Pumped
-	Dump Bailer X Other (Explain) GRAVITY
Total Well Depth (ft.) 6.0 Casing Diameter (ins.) Casing Depth (ft.)	(6) Sealing Materials For monitoring wells and monitoring well boreholes only
(1 form groundstifface) Casing Depart (it.)	☐ Neat Cement Grout monitoring well boreholes only ☐ Sand-Cement (Concrete) Grout
Lower Drillhole Diameter (in.) 1.1	Concrete ! Bentonite Pellets
Lower Diffinole Diameter (in.) 1.1	Clay-Sand Slurry X Granular Bentonite
Was Well Annular Space Grouted? ☐ Yes X No ☐ Unknown	
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	
Sealing Material Used	From (Ft.) To (Ft.) No. Yards, (Circle or Volume One) No. Yards, (Circle or Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface 6.0
Amazon	
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Briohn Environmental Contractors	Date Received/Inspected District/County
Signature of Person Doing Work A Date Signed /	1 1
2: (July 6/27/95	Reviewer/inspector Complying Work
Street or Route Telephone Number	Noncomplying Work
W233 N2800 Roundy Cir. W. (414)-524-2080	Follow-up Necessary
City, State, Zip Code	
Suite 101, Pewaukee, WI 53072 DNR/COU	07724-012
DNA/COC	/IT I I

Form 3300-5B

Rev. 3-94

(I) GENERAL INFORMATION		(2) FACIL	ITY NAME		
Well/drillhole/Borehole	County		al Well Owne	r (If Known)	
Location	MARINETTE				
	3; T. 31 N; R. 27 X		Well Owner FIRE TECH	NOLOGY CENTER	
(If applicable) Gov't Lot	Grid Number	O C4	or Route iton Street		
Grid Location			State, Zip Co	de	
ft. 🔲 N. 🔲 S.,	ft. 🔲 E. 🔲 W		e, WI 54143		
Civil Town Name		Facility AFTC-7	Well No. an	d/or Name (If Applicat	ole) WI Unique Well No
Street Address of Well	······································		For Abandon	ıment	
Pierce Avenue		Soil Bori	ng Completio	on	
City, Village		Date of	Abandonmer		
City of Marinette				03/30/95	
WELL/DRILLHOLE/BOREHOLE		I/A) Danah	117-4 (F	A) 40	
(3) Original Well/Drillhole/Borehole C	onstruction Completed On		to Water (Fee	· ———	TAT- 871 AT-A A . 12 . 11
(Date) 03/30/95		1 ·	& Piping Rem		No X Not Applicable
P***	la) Removed?		No X Not Applicable
Monitoring Well	Construction Report Available?		Removed?		No X Not Applicable
☐ Water Well ☐ Drillhole	Yes No		Left in Place Explain	? Yes 2	∏ No
X Borehole	l	1110,1			
A porelioie		Was C	asing Cut Off	Below Surface?	Yes X No
Construction Type:					Yes X No
	(Sandpoint) 🔲 Dug		-	_	Yes X No
X Other (Specify) GEOPROBE			s, Was Hole R		Yes X No
		- L		Placing Sealing Mater	
Formation Type:		Γ΄.		•	
X Unconsolidated Formation	☐ Bedrock	. —	ductor Pipe-C		etor Pipe-Pumped
Total Well Depth (ft.) 6.0 C	Casing Diameter (ins.)	(6) Sealing	np Bailer		Explain) GRAVITY monitoring wells and
(From groundsurface)	Casing Depth (ft.)	1''	s Materials at Cement Gro		itoring well boreholes only
(oncrete) Grout	
Lower Drillhole Diameter (in.) 1		. —	ncrete		Bentonite Pellets
			y-Sand Slurry	i —	Granular Bentonite
Was Well Annular Space Grouted?	Yes X No Unkno		tonite-Sand S		Bentonite- Cement Grout
If Yes, To What Depth?	Feet		pped Bentoni	· · —	Senionia- Cement Grout
(7) Seeking Mate					e Mix Ratio
Sealing Mater	nal Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circl or Volume One	or Mud Weight
Bentonite Crumbles (Granular Ben	ıtonite)	Surface	6.0	i	
•					
		li .			
(8) Comments:		1	<u> </u>	<u>L</u> _	
(9) Name of Person or Firm Doing Se	•	(10)		D)NR OR COUNTY	
Briohn Environmental Contra	ctors	Date	Received/Ins	spected	District/County
Signature of Person Doing Work	Date Signed				
2. P.) in ful 1	4 -	Kev	ewer/Inspecto	π	Complying Work
Street or Route	Telephone Number				Noncomplying Work
W233 N2800 Roundy Cir. W. City, State, Zip Code	(414)-524-2080		ow-up Necess	auy	
Suite 101, Pewaukee, WI 53072	,				
Suite 101, 1 ewaukee, W1 550/2		OUNTY	07724-012	2	

State of Wisconsin Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(I) GENERAL INFORMATION		(2) FACIL				
Well/drillhole/Borehole Location	County MARINETTE	Original Well Owner (If Known)				
NW 1/4 of NE 1/4 Sec.	13 ; T. 31 N; R. 27 X W		Well Owner	NOLOGY CENTER		
(If applicable)			r Route			
Grid Location Gov't Lot	Grid Number		ton Street	1-		
tt. N. S.,	ft. □ E. □ W.		State, Zip Co e, WI 54143			
Civil Town Name	II. L. W.				ole) WI Unique Well No	
-		AFTC-8		·-·		
Street Address of Well Pierce Avenue			For Abandon ng Completic			
City, Village			Abandonmer			
City of Marinette		<u> </u>		03/30/95	·	
WELL/DRILLHOLE/BOREHOLE (3) Original Well/Drillhole/Borehole ((4) Depth t	o Water (Fee	t) 4.0		
(Date) 03/30/95	construction completed on		t Piping Rem		No X Not Applicable	
		1 -) Removed?		No X Not Applicable	
☐ Monitoring Well ☐ Water Well ☐ Drillhole ☒ Borehole	Construction Report Available?	1	Removed? Left in Place Explain		No X Not Applicable	
Construction Type:	(Sandpoint) Dug	Did Sea Did Ma	aling Materia	l Rise to Surface? [After 24 Hours? [Yes X No	
Formation Type: X Unconsolidated Formation Total Well Depth (ft.) 6.0 (From groundsurface) Lower Drillhole Diameter (in.) Was Well Annular Space Grouted? If Yes, To What Depth?	Conductor Pipe-Gravity					
(7) Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circl or Volume One	Mix Ratio or Mud Weight	
Bentonite Crumbles (Granular Be		Surface	6.0	or Volume Che) or made weight	
(8) Comments:			l	<u> </u>		
(9) Name of Person or Firm Doing Se Briohn Environmental Contra Signature of Person Doing Work	ctors	1	FOR Received/Ins		USE ONLY District/County Complying Work	
Street or Route W233 N2800 Roundy Cir. W.	Telephone Number (414)-524-2080	-	w-up Necess		Noncomplying Work	
City, State, Zip Code Suite 101, Pewaukee, WI 53072)		-			
Suite 101, 1 chaukee, W1 330/2	DNR/CO	UNTY	07724-012	2		

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION		J(2) FACILITY NAME				
Well/drillhole/Borehole Location	County	Origina	l Well Owne	r (lf Known)		
Location	MARINETTE		···			
NW 1/4 of NE 1/4 Sec. 13; T. 31 N; R. 27 X W			Present Well Owner ANSUL FIRE TECHNOLOGY CENTER			
(If applicable) Gov't Lot	Grid Number		r Route ton Street			
Grid Location ft. \[\scale \text{N}. \[\scale \text{S}.,	ft. 🗆 E. 🔲 W.	1	State, Zip Co e, WI 54143			
Civil Town Name					ble) WI Unique Well No	
Street Address of Well		Reason	For Abandor			
Pierce Avenue			ng Completio			
City, Village City of Marinette		Date of	Abandonmer	o3/30/95		
WELL/DRILLHOLE/BOREHOLE	INFORMATION	!		00/00//5		
(3) Original Well/Drillhole/Borehole		(4) Depth t	o Water (Fee	t) 4.0_	 	
(Date) 03/30/95		Pump &	દ Piping Rem	noved? Yes [No X Not Applicable	
<u></u>		Liner(s	Removed?	☐ Yes [No X Not Applicable	
☐ Monitoring Well ☐ Water Well ☐ Drillhole X Borehole	Construction Report Available? Yes No		Removed? Left in Place Explain	Yes [No X Not Applicable No	
Construction Type:	(Sandpoint) Dug	Did Sea Did Ma	aling Materia	l Rise to Surface? [After 24 Hours? [Yes X No Yes X No Yes X No Yes X No	
Formation Type: X Unconsolidated Formation Total Well Depth (ft.) (From groundsurface) Casing Diameter (ins.) Casing Depth (ft.) Lower Drillhole Diameter (in.) 1.1 Was Well Annular Space Grouted? Yes X No Unknown If Yes, To What Depth?			ductor Pipe-Comp Bailer Materials t Cement Gro	Other (For more oncrete) Grout	Explain) GRAVITY monitoring wells and nitoring well boreholes only Bentonite Pellets Granular Bentonite Bentonite- Cement Grout	
(7) Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circl or Volume	Mix Ratio or Mud Weight	
Bentonite Crumbles (Granular Be		Surface	6.0	or volume) of Made Weight	
(8) Comments:			<u> </u>			
(9) Name of Person or Firm Doing Se Briohn Environmental Contra Signature of Person Doing Work Street or Route W233 N2800 Roundy Cir. W.	ctors	Revi	FOR Received/Ins ewer/Inspectors w-up Necess	OT	District/County Complying Work Noncomplying Work	
City, State, Zip Code Suite 101, Pewaukee, WI 5307	2 DNR/CO	UNTY	07724-012	2		

State of Wisconsin Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION		(2) FACIL	ITY NAME				
Well/drillhole/Borehole Location	County MARINETTE	Origina	l Well Owne	r (If Known)			
	L	Procent	Wall Ouman				
	13 ; T. 31 N; R. 27 X V	ANSUL	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER				
(If applicable) Gov't Lot	Grid Number		or Route Iton Street				
Grid Location ft. ☐ N. ☐ S.,	ft. \[\bigcup E. \[\bigcup W.		State, Zip Co e, WI 54143				
Civil Town Name	II IZ W.				ble) WI Unique Well No		
		AFTC-10			<u> </u>		
Street Address of Well Pierce Avenue			For Abandor ng Completion				
City, Village		Date of	Abandonme				
City of Marinette				03/30/95			
WELL/DRILLHOLE/BOREHOLE (3) Original Well/Drillhole/Borehole ((4) Depth	to Water (Fee	t) 4.0			
(Date) 03/30/95	constitution completed on	1	& Piping Rem	· ——	No X Not Applicable		
(2010)		- I) Removed?		No X Not Applicable		
☐ Monitoring Well	Construction Report Available?	1	Removed?		No X Not Applicable		
Water Well	Yes No		Left in Place	? Yes	X No		
☐ Drillhole X Borehole	1	lf No, l	Explain				
[X] Borenole		Was C	sing Cut Off	Below Surface?	Yes X No		
Construction Type:					Yes X No		
☐ Drilled ☐ Driven	(Sandpoint) 🔲 Dug	Did Ma	aterial Settle	_	Yes X No		
X Other (Specify) GEOPROBE		If Yes	s, Was Hole R	Retopped?	Yes X No		
		(5) Requir	ed Method of	Placing Sealing Mate	πial		
Formation Type: X Unconsolidated Formation	☐ Bedrock	☐ Cor	ductor Pipe-C		ctor Pipe-Pumped		
			Dump Bailer X Other (Explain) GRAVITY				
Total Well Depth (ft.) 6.0 Casing Diameter (ins.) Casing Depth (ft.)		1	(6) Sealing Materials For monitoring wells and monitoring well boreholes only				
(1 tom groundsurface)	Auding Depar (III)	_		oncrete) Grout	into this well boreholes only		
Lower Drillhole Diameter (in.)	l.1		а-сетен (с. icrete	· · · · · · · · · · · · · · · · · · ·	Bentonite Pellets		
`			y-Sand Slurry		Granular Bentonite		
Was Well Annular Space Grouted?		. —	tonite-Sand S	. —	Bentonite- Cement Grout		
If Yes, To What Depth?	Feet	Chi	pped Bentoni	te ^I			
(7) Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circl or Volume	le Mix Ratio e) or Mud Weight		
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0	or volume			
		ł					
70. a							
(8) Comments:							
(9) Name of Person or Firm Doing Se	aling Work	((10)	EOR	ed)nikeojke(e)einem	8 8 5 5 5 6 0 N 1 B V		
Briohn Environmental Contra	•	1.1.511.11.55.2	Received/Ins		District/County		
Signature of Person Doing Work	Date Signed	7					
300 (.) kn	6/27/95	Revi	ewer/inspecto	OT.	Complying Work		
Street or Route \ W233 N2800 Roundy Cir. W.	Telephone Number (414)-524-2080	Eatl	w-up Necess	973	Noncomplying Work		
City, State, Zip Code	(414)-324-2000	- FORM	want necess	au y			
Suite 101, Pewaukee, WI 53072	2		07734 044	1			
<u>-</u>		YTNUC	07724-012	4			

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

(1) GENERAL INFORMATION	200	(2) FACILITY NAME					
Well/drillhole/Borehole Location	County MARINETTE	Origina	Well Owner	r (If Known)			
<u>NW</u> 1/4 of <u>NE</u> 1/4 Sec. <u>1</u> (If applicable)	3; T. 31 N, R. 27 X W	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER Street or Route					
Gov't Lot	Grid Number	One Stant					
Grid Location ft. \[\scale \text{N.} \] S., Civil Town Name	ft. ☐ E. ☐ W.	Marinette	tate, Zip Coo WI 54143	3	Martinian Wall Na		
Civil Town Name		AFTC-11	Well No. and	Vor Name (If Applicable) WI Unique Well No		
Street Address of Well Pierce Avenue			Reason For Abandonment Soil Boring Completion				
City, Village		Date of	Abandonmer				
City of Marinette WELL/DRILLHOLE/BOREHOLE	INFORMATION			03/30/95			
(3) Original Well/Drillhole/Borehole C		(4) Depth to	Water (Fee	t) 4.0			
(Date) 03/30/95	,		Piping Rem	· ——	No X Not Applicable		
<u> </u>		1	Removed?		No X Not Applicable		
☐ Monitoring Well ☐ Water Well ☐ Drillhole ▼ Perchale	Construction Report Available? Yes No	Screen]	Removed? Left in Place?		No X Not Applicable		
X Borehole Construction Type: □ Drilled □ Driven (Sandpoint) □ Dug X Other (Specify) GEOPROBE		Was Casing Cut Off Below Surface? Did Sealing Material Rise to Surface? Did Material Settle After 24 Hours? If Yes, Was Hole Retopped? Yes X No Yes X No					
Formation Type: X Unconsolidated Formation Total Well Depth (ft.) (From groundsurface) Casing Diameter (ins.) Casing Depth (ft.)		(5) Required Method of Placing Sealing Material Conductor Pipe-Gravity Dump Bailer Conductor Pipe-Pumped Other (Explain) GRAVITY (6) Sealing Materials For monitoring wells and monitoring well boreholes only Sand-Cement (Concrete) Grout					
Lower Drillhole Diameter (in.) 1.1 Was Well Annular Space Grouted? Yes X No Unknown If Yes, To What Depth? Feet		Con Clay	crete -Sand Slurry tonite-Sand S pped Bentoni	Ber X Gra	ntonite Pellets unular Bentonite ntonite- Cement Grout		
(7)					Mix Ratio		
Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	or Mud Weight		
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0				
(8) Comments:							
(9) Name of Person or Firm Doing Se	aling Work	(LU)	FOR	DARKORKKOJUNINA	23(0)(18Y		
Briohn Environmental Contra		Date	Received/Ins	pected Di	strict/County		
Signature of Person Doing Work	Date Signed	Revi	wer/inspecto	T I	Complying Work		
Street or Route W233 N2800 Roundy Cir. W.	(27/75) Telephone Number (414)-524-2080		w-up Necess		Noncomplying Work		
City, State, Zip Code Suite 101, Pewaukee, WI 53072		07724-012					

DNR/COUNTY

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(I) GENERAL INFORMATION			(2) FACILITY NAME			
Well/drillhole/Borehole Location	County MARINETTE		l Well Owner			
NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 X W			Present Well Owner ANSUL FIRE TECHNOLOGY CENTER			
(If applicable) Gov't Lot	Grid Number		r Route ton Street		,	
Grid Location ft. \[\scale \text{N.} \[\scale \text{S.},	ft. E. W.	1	State, Zip Coo e, WI 54143			
Civil Town Name	L. W.		Well No. and		e) WI Unique Well No	
Street Address of Well		Reason	For Abandon			
Pierce Avenue			ng Completio			
City, Village City of Marinette		Date of	Abandonmer	nt 03/30/95		
WELL/DRILLHOLE/BOREHOLE I	NFORMATION					
(3) Original Well/Drillhole/Borehole C		(4) Depth t	o Water (Fee	t) <u>4.0</u>		
(Date) 03/30/95		Pump &	t Piping Rem	oved? Yes	No X Not Applicable	
		Liner(s	Removed?	☐ Yes ☐	No X Not Applicable	
Monitoring Well	Construction Report Available?		Removed?		No X Not Applicable	
Water Well	☐ Yes ☐ No		Left in Place		No	
Drillhole	_	If No, E	xplain			
X Borehole						
					Yes X No	
Construction Type:		Did Sealing Material Rise to Surface? Yes X No				
Drilled Driven (Sandpoint)	Did Material Settle After 24 Hours? Yes X No				
X Other (Specify) GEOPROBE		If Yes	, Was Hole R	Letopped?	Yes 🛛 No	
		(5) Require	d Method of	Placing Sealing Materia	al	
Formation Type:	-	☐ Con	ductor Pipe-C	Gravity Conduct	or Pipe-Pumped	
X Unconsolidated Formation Bedrock		Dump Bailer X Other (Explain) GRAVITY				
Total Well Depth (ft.) 6.0 Casing Diameter (ins.)		(6) Sealing			nonitoring wells and	
(From groundsurface) Casing Depth (ft.)		☐ Nea	t Cement Gro	out moni	toring well boreholes only	
		☐ San	d-Cement (Co	oncrete) Grout		
Lower Drillhole Diameter (in.) 1	.1	☐ Con	crete	! □ B€	entonite Pellets	
			-Sand Slurry	√ X Gı	ranular Bentonite	
Was Well Annular Space Grouted?	Yes X No Unknown	☐ Ben	tonite-Sand S	Slurry 📙 Be	entonite- Cement Grout	
If Yes, To What Depth?	Feet	☐ Chi	pped Bentoni	te I		
(7) Sealing Mater	ial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	Mix Ratio or Mud Weight	
Bentonite Crumbles (Granular Ben	itonite)	Surface	6.0	of volume >		
	·					
•						
(8) Comments:						
				81 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	[] A NOT A] ? 2 (A) A	
(9) Name of Person or Firm Doing Sea Briohn Environmental Contrac		(10)		DAR OR COUNTY		
		L)ate	Received/Ins	perieu 1	District/County	
Signature of Person Doing Work	Date Signed	David	ewer/Inspecto	nr (**	Complying Work	
Son Colombia	1 4 1 - 1	- I	en en mojadel	" -	Noncomplying Work	
Street or Route V W233 N2800 Roundy Cir. W.	Telephone Number (414)-524-2080	TAIL	w-up Necess	arv	s tone ampiting it of a	
City, State, Zip Code	(424) 524-2000	1 1	m-nh ricress	,		
Suite 101, Pewaukee, WI 53072				_		
Salve Aday a stranding to 1 00012	DNR/CO	UNTY	07724-012	2		

Form 3300-5B

Rev. 3-94

(I) GENERAL INFORMATION			(2) FACILITY NAME			
Well/drillhole/Borehole Location	County MARINETTE	Origina	l Well Owner	r (If Known)		
NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 X W			Present Well Owner ANSUL FIRE TECHNOLOGY CENTER			
(If applicable) Gov't Lot	Grid Number		r Route ton Street			
Grid Location ft. \[\scale \text{N}. \[\scale \text{S}.,	ft. 🗆 E. 🔲 W.		State, Zip Co e, WI 54143			
Civil Town Name			Well No. an		le) WI Unique Well No	
Street Address of Well		Reason	For Abandon			
Pierce Avenue City, Village			ng Completion Abandonmer			
City of Marinette		Date of		03/30/95		
WELL/DRILLHOLE/BOREHOLE	INFORMATION		* "			
(3) Original Well/Drillhole/Borehole (Construction Completed On	(4) Depth t	o Water (Fee	t) <u>4.0</u>		
(Date) 03/30/95	·	Pump &	t Piping Rem	oved? Yes	No X Not Applicable	
☐ Monitoring Well ☐ Water Well ☐ Drillhole ☑ Borehole	Construction Report Available? Yes No	Screen Casing If No, E		☐ Yes ☐ Yes ☒	No X Not Applicable No X Not Applicable No	
Construction Type: Drilled Driven Other (Specify) GEOPROBE	(Sandpoint) Dug	Did Sea Did Ma	aling Materia	l Rise to Surface?	Yes X No	
Formation Type: X Unconsolidated Formation Bedrock Total Well Depth (ft.) 6.0 Casing Diameter (ins.) Casing Depth (ft.) Lower Drillhole Diameter (in.) 1.1 Was Well Annular Space Grouted? Yes X No Unknown If Yes, To What Depth?		Con Dun Dun On Dun Sealing Nea Sand Con Clay Ben	ductor Pipe-Comp Bailer Materials t Cement Gro	Other (E	al or Pipe-Pumped Explain) GRAVITY nonitoring wells and toring well boreholes only entonite Pellets ranular Bentonite entonite- Cement Grout	
(7) Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	Mix Ratio or Mud Weight	
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0			
(8) Comments:		· · · · · · · · · · · · · · · · · · ·				
(9) Name of Person or Firm Doing So Briohn Environmental Contra Signature of Person Doing Work	Date Signed 6 / 27 /95		FOR Received/Ins ewer/Inspecto		District/County Complying Work Noncomplying Work	
Street or Route W233 N2800 Roundy Cir. W. City, State, Zip Code	Telephone Number (414)-524-2080	Follo	w-up Necess	ary	3 - 17-0	
Suite 101, Pewaukee, WI 5307	2 DNR/CO	NTY	07724-012	2		

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION		(2) FACILITY NAME				
Well/drillhole/Borehole Location	County MARINETTE	Original Well Owner (If Known)				
NW 1/4 of NE 1/4 Sec	13 ; T. 31 N; R. 27 X W		Well Owner	NOLOGY CENTER	· · · · · · · · · · · · · · · · · · ·	
(If applicable)		Street o	r Route ton Street			
Grid Location Gov't Lot	Grid Number		State, Zip Co	de		
ft. N. S.,	ft E W.		e, WI 54143			
Civil Town Name		Facility	Well No. and	d/or Name (If Applicable	e) WI Unique Well No	
G. A.I.I. CIVI.II		AFTC-14				
Street Address of Well Pierce Avenue			For Abandor og Completion			
City, Village	and the second s		Abandonmer			
City of Marinette	·	<u> </u>	* **	03/30/95		
WELL/DRILLHOLE/BOREHOLE (3) Original Well/Drillhole/Borehole		(4) Denth t	o Water (Fee	t) 4.0		
(Date) 03/30/95	constitution completed on		t Piping Rem		No X Not Applicable	
		1	Removed?		No X Not Applicable	
☐ Monitoring Well ☐ Water Well ☐ Drillhole ☒ Borehole	☐ Water Well ☐ Yes ☐ No ☐ Drillhole		Screen Removed? Casing Left in Place? If No, Explain Yes No X Not Applicable X Not Applicable X Not Applicable X Not Applicable			
Construction Type:	Construction Type:		Was Casing Cut Off Below Surface? Did Sealing Material Rise to Surface? Did Material Settle After 24 Hours? If Yes, Was Hole Retopped? Yes X No Yes X No			
Formation Type: X Unconsolidated Formation Total Well Depth (ft.) (From groundsurface) Lower Drillhole Diameter (in.) Lower Drillhole Diameter (in.) Was Well Annular Space Grouted? Yes X No Unknown If Yes, To What Depth?			ductor Pipe-(np Bailer Materials t Cement Gro	Other (Exposer of the control of the	or Pipe-Pumped (xplain) GRAVITY conitoring wells and coring well boreholes only Intonite Pellets anular Bentonite Intonite- Cerment Grout	
(7) Sealing Mate	erial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	Mix Ratio or Mud Weight	
Bentonite Crumbles (Granular Be	entonite)	Surface	6.0	or volume		
(8) Comments:			<u> </u>			
(9) Name of Person or Firm Doing S Briohn Environmental Contro Signature of Person Doing Work Street or Route W233 N2800 Roundy Cir. W.	Date Signed	Revi	FOR Received/Ins ewer/Inspector	or	SE ONLY istrict/County Complying Work Noncomplying Work	
City, State, Zip Code Suite 101, Pewaukee, WI 5307	2					
Suite 101, 1 EWAURCE, W1 5507	DNR/CO	שאדע	07724-012	2		

State of Wisconsin Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B

Rev. 3-94

(i) GENERAL INFORMATION	(2) FACILITY NAME				
Well/drillhole/Borehole County Location MARINETTE	Original Well Owner (If Known)				
NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 X W	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER				
(If applicable) Gov't Lot Grid Number	Street or Route One Stanton Street				
Grid Location ft. □ N. □ S., ft. □ E. □ W.	City, State, Zip Code Marinette, WI 54143				
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No AFTC-15				
Street Address of Well Pierce Avenue	Reason For Abandonment Soil Boring Completion				
City, Village City of Marinette	Date of Abandonment 03/30/95				
WELL/DRILLHOLE/BOREHOLE INFORMATION					
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 4.0				
(Date) 03/30/95	Pump & Piping Removed? Yes No X Not Applicable Liner(s) Removed? Yes No X Not Applicable				
☐ Monitoring Well Construction Report Available? ☐ Water Well ☐ Yes ☐ No ☐ Drillhole	Screen Removed? Yes No X Not Applicable Casing Left in Place? Yes No If No, Explain				
X Borehole	Was Casing Cut Off Below Surface? Yes X No				
Construction Type: Driven (Sandpoint) Dug Other (Specify) Dug GEOPROBE	Did Sealing Material Rise to Surface? Yes X No Did Material Settle After 24 Hours? Yes X No If Yes, Was Hole Retopped? Yes X No				
Formation Type: X Unconsolidated Formation Bedrock	(5) Required Method of Placing Sealing Material Conductor Pipe-Gravity Conductor Pipe-Pumped Dump Bailer X Other (Explain) GRAVITY				
Total Well Depth (ft.) 6.0 Casing Diameter (ins.) Casing Depth (ft.)	(6) Sealing Materials Neat Cement Grout Sand-Cement (Concrete) Grout For monitoring wells and monitoring well boreholes only				
Lower Drillhole Diameter (in.) 1.1	☐ Concrete ☐ Bentonite Pellets ☐ Clay-Sand Slurry ☐ Granular Bentonite				
Was Well Annular Space Grouted? Yes X No Unknown If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite- Cement Grout Chipped Bentonite				
(7) Sealing Material Used	From (Ft.) To (Ft.) No. Yards, (Circle Sacks Sealant (One) or Mud Weight or Volume				
Bentonite Crumbles (Granular Bentonite)	Surface 6.0				
(8) Comments:					
(o) Conditions.					
(9) Name of Person or Firm Doing Sealing Work Briohn Environmental Contractors	(10) FOR DNR OR COUNTY USE ONLY Date Received/inspected District/County				
Signature of Person Doing Work Date Signed (a/27/85)	Reviewer/inspector Complying Work				
Street or Route \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Follow-up Necessary Noncomplying Work				
City, State, Zip Code					
Suite 101, Pewaukee, WI 53072	07724-012				

Form 3300-5B

Rev. 3-94

		(2) FACILITY NAME				
Well/drillhole/Borehole Location	County MARINETTE	Original Well Owner (If Known)				
	ПЕ	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER				
NW 1/4 of NE 1/4 Sec	13 ; T. 31 N; R. 27 X W	Street o		NOLOGY CENTER		
Gov't Lot	Grid Number					
Grid Location		•	State, Zip Co			
ft. N. S.,	ft. ☐ E. ☐ W.	1	well No. an	d/or Name (If Applicable	WI Unique Well No.	
Civil Town Name		AFTC-16		wor Name (if Applicable	WI Offique Well No	
Street Address of Well			For Abandor	nment		
Pierce Avenue		Soil Bori	ng Completio	on		
City, Village		Date of	Abandonmer			
City of Marinette	NIBODIKATION.	<u> </u>		03/30/95		
WELL/DRILLHOLE/BOREHOLE (3) Original Well/Drillhole/Borehole ((4) Denth t	o Water (Fee	t) 4.0		
(Date) 03/30/95	·		t Piping Rem	· ———	No X Not Applicable	
(200)		1 -	Removed?		No X Not Applicable	
☐ Monitoring Well ☐ Water Well	Construction Report Available?	Screen	Removed? Left in Place	Yes 1	No X Not Applicable	
Drillhole		If No, E				
X Borehole	•					
Construction Type:		Was Casing Cut Off Below Surface?				
	(Sandpoint) Dug	Did Material Settle After 24 Hours? Yes X No				
X Other (Specify) GEOPROBE		If Yes, Was Hole Retopped?				
		(5) Require	d Method of	Placing Sealing Materia	1	
Formation Type: X Unconsolidated Formation	☐ Bedrock		ductor Pipe-C		r Pipe-Pumped	
		Dump Bailer X Other (Explain) GRAVITY				
Total Well Depth (ft.) 6.0 Casing Diameter (ins.) Casing Depth (ft.)		(6) Sealing Materials Neat Cement Grout For monitoring wells and monitoring well boreholes only				
(Troili groundsurface) Casing Depth (it.)		. —		out moint oncrete) Grout	ornig wen boreholes omy	
Lower Drillhole Diameter (in.)	1.1	_	crete	·	ntonite Pellets	
		. —	/-Sand Slurry		anular Bentonite	
Was Well Annular Space Grouted?		Ben	tonite-Sand S	Slurry 🔲 Ber	ntonite- Cement Grout	
If Yes, To What Depth?	Feet	Chi	pped Bentoni	ite I		
(7) Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	Mix Ratio or Mud Weight	
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0			
		<u> </u>				
		<u> </u>	<u> </u>	l		
(8) Comments:						
70) N 7		B/6 P1430	0000000000000000000 p/ a \ e	V0 47 74 1 20'47 4 10'7 0/47 87 744 14 740 31	**************************************	
(9) Name of Person or Firm Doing Se Briohn Environmental Contra	•	(10) Date	Received/Ins	DNR OR COUNTY U	istrict/County	
Signature of Person Doing Work,	Date Signed					
Bil. Stali for	6/27/95	Revi	ewer/Inspect	σι 🔲	Complying Work	
Street or Route W233 N2800 Roundy Cir. W.	Telephone Number (414)-524-2080	Datt.	w-up Necess	BITY	Noncomplying Work	
City, State, Zip Code	(111) 021-2000	┥ 【****	up 1360633			
Suite 101, Pewaukee, WI 5307	2		07734.01	1		
	DNR/CO	UNTY	07724-013	4		

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

Rev. 3-94

(I) GENERAL INFORMATION	(2) FACILITY NAME				
Well/drillhole/Borehole County Location MARINETTE	Original Well Owner (If Known)				
	Present Well Owner				
NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 X V	ANSUL FIRE TECHNOLOGY CENTER				
(If applicable) Gov't Lot Grid Number	Street or Route One Stanton Street				
Grid Location ft. □ N. □ S., ft. □ E. □ W.	City, State, Zip Code Marinette, WI 54143				
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No				
	AFTC-17				
Street Address of Well Pierce Avenue	Reason For Abandonment Soil Boring Completion				
City, Village	Date of Abandonment				
City of Marinette	03/31/95				
WELL/DRILLHOLE/BOREHOLE INFORMATION	1/0 B 0 . W . 25 0				
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 4.0				
(Date) 03/31/95	Pump & Piping Removed? Yes No X Not Applicable				
☐ Monitoring Well ☐ Water Well ☐ Drillhole ☐ Borehole ☐ Construction Report Available? ☐ Yes ☐ No	Liner(s) Removed? Screen Removed? Casing Left in Place? If No, Explain Yes No X Not Applicable Yes No X Not Applicable Yes No X Not Applicable				
Construction Type: Drilled Driven (Sandpoint) Dug Other (Specify) GEOPROBE	Was Casing Cut Off Below Surface? Did Sealing Material Rise to Surface? Did Material Settle After 24 Hours? If Yes, Was Hole Retopped? Yes X No Yes X No				
Formation Type: X Unconsolidated Formation Bedrock Total Well Depth (ft.) 6.0 Casing Diameter (ins.) Casing Depth (ft.) Lower Drillhole Diameter (in.) 1.1 Was Well Annular Space Grouted? Yes X No Unknor If Yes, To What Depth?	(5) Required Method of Placing Sealing Material Conductor Pipe-Gravity Dump Bailer (6) Sealing Materials Neat Cement Grout Sand-Cement (Concrete) Grout Concrete Clay-Sand Slurry Bentonite-Sand Slurry Chipped Bentonite Conductor Pipe-Pumped For monitoring wells and monitoring wells and monitoring well boreholes only Granular Bentonite Bentonite-Cement Grout Bentonite-Cement Grout				
(7) Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant (Circle or Wolume One) Mix Ratio or Mud Weight				
Bentonite Crumbles (Granular Bentonite)	Surface 6.0				
·					
8) Comments:					
Name of Person or Firm Doing Sealing Work Briohn Environmental Contractors Signature of Person Doing Work Color Date Signed Color Doing Work Street or Route Wassan Name of Person or Firm Doing Sealing Work Telephone Number (410) 524 2080	(10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected District/County Reviewer/Inspector Complying Work Noncomplying Work				
W233 N2800 Roundy Cir. W. (414)-524-2080 City, State, Zip Code	Follow-up Necessary				
Suite 101, Pewaukee, WI 53072	OUNTY 07724-012				

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

(1) GENERAL INFORMATION		(2) FACILITY NAME				
Well/drillhole/Borehole Location	County MARINETTE	Original Well Owner (If Known)				
	13 ; T. 31 N; R. 27 X W	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER				
(If applicable) Gov't Lot	Grid Number	Street or Route One Stanton Street				
Grid Location		City, State, Zip Code				
ft. 🔲 N. 🔲 S.,	ft. 🔲 E. 📋 W.	Marinette, WI 54143				
Civil Town Name		Facility Well No. and/or Name (If Applicable) WI Unique Well No AFTC-18				
Street Address of Well Pierce Avenue		Reason For Abandonment Soil Boring Completion				
City, Village		Date of Abandonment				
City of Marinette		03/31/95				
WELL/DRILLHOLE/BOREHOLE						
(3) Original Well/Drillhole/Borehole (Construction Completed On	(4) Depth to Water (Feet) 4.0				
(Date) 03/31/95		Pump & Piping Removed? Yes No X Not Applicable				
	•	Liner(s) Removed? Yes No X Not Applicable				
☐ Monitoring Well	Construction Report Available?	Screen Removed? Yes No Not Applicable				
☐ Water Well	Yes No	Casing Left in Place? Yes No				
Drillhole	·	If No, Explain				
X Borehole		W. O. : C. OTP. I. O. C. O. TIV. WIN				
Construction Trans		Was Casing Cut Off Below Surface? Yes X No				
Construction Type: Drilled Driven	(Sandpoint) Dug	Did Sealing Material Rise to Surface? Yes X No				
X Other (Specify) GEOPROBE		Did Material Settle After 24 Hours? If Yes, Was Hole Retopped? Yes X No				
Formation Type:		(5) Required Method of Placing Sealing Material				
X Unconsolidated Formation	☐ Bedrock	Conductor Pipe-Gravity Conductor Pipe-Pumped				
-		Dump Bailer X Other (Explain) GRAVITY				
Total Well Depth (ft.) 6.0 Casing Diameter (ins.)		(6) Sealing Materials For monitoring wells and monitoring well boreholes only				
(From groundsurface)	Casing Depth (ft.)	I Treat Coment Grout				
Tomas Dulling Discount (1)		Sand-Cement (Concrete) Grout				
Lower Drillhole Diameter (in.)	1.1	Concrete Bentonite Pellets				
Was Well Annular Space Grouted?	Yes X No Unknown	Clay-Sand Slurry				
If Yes, To What Depth?	Feet	Bentonite-Sand Slurry Bentonite- Cement Grout Chipped Bentonite				
	rat					
(7) Sealing Mate	rial Used	From (Ft.) To (Ft.) No. Yards, (Circle or Volume on Mix Ratio or Mud Weight				
Bentonite Crumbles (Granular Be	ntonite)	Surface 6.0				
Dentonite Crambics (Grandian De		Surface 5.0				
		 				
(8) Comments:						
		Water Control of the				
(9) Name of Person or Firm Doing Se	ealing Work	(10) FOR DNR OR COUNTY USE ONLY				
Briohn Environmental Contra		Date Received/Inspected District/County				
Signature of Person Doing Work	Date Signed ,	- 				
3mi C) 60 1	(6/27/95	Reviewer/Inspector Complying Work				
Street or Route	Telephone Number	Noncomplying Work				
W233 N2800 Roundy Cir. W.	(414)-524-2080	Follow-up Necessary				
City, State, Zip Code		1				
Suite 101, Pewaukee, WI 53072)					

DNR/COUNTY

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION	(2) FACILITY NAME				
Well/drillhole/Borehole County Location MARINETTE	Original Well Owner (If Known)				
Location MARINETTE					
NIX 14 6 NID 14 0 12 - 24 1- 25	E Present Well Owner				
	M ANSUL FIRE TECHNOLOGY CENTER				
(If applicable)	Street or Route One Stanton Street				
Gov't Lot Grid Num	noei				
Grid Location	City, State, Zip Code				
	W. Marinette, WI 54143				
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No AFTC-19				
Street Address of Well	Reason For Abandonment				
Pierce Avenue	Soil Boring Completion				
City, Village	Date of Abandonment				
City of Marinette	03/31/95				
WELL/DRILLHOLE/BOREHOLE INFORMATION	0002170				
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 4.0				
(Date) 03/31/95	Pump & Piping Removed? Yes No X Not Applicable				
(5415)	Liner(s) Removed? Yes No X Not Applicable				
☐ Monitoring Well Construction Report Available					
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes X No				
Drillhole	If No, Explain				
X Borehole	II 110, Explain				
M Dorenoic	Was Casing Cut Off Below Surface? Yes X No				
Construction Type:	Did Sealing Material Rise to Surface? Yes X No				
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes X No				
X Other (Specify) GEOPROBE	If Yes, Was Hole Retopped? Yes X No				
Formation Type:	(5) Required Method of Placing Sealing Material				
X Unconsolidated Formation Bedrock	Conductor Pipe-Gravity Conductor Pipe-Pumped				
	Dump Bailer X Other (Explain) GRAVITY				
Total Well Depth (ft.) 6.0 Casing Diameter (ins.) (From groundsurface) Casing Depth (ft.)	(6) Sealing Materials For monitoring wells and monitoring well boreholes only				
(From groundsurface) Casing Depth (it.)	Treat Coment Croat				
T D 111 1 D1	Sand-Cement (Concrete) Grout				
Lower Drillhole Diameter (in.) 1.1	Concrete Bentonite Pellets				
W W-11 A C C 10	Clay-Sand Slurry X Granular Bentonite				
	nknown Bentonite-Sand Slurry Bentonite- Cement Grout				
If Yes, To What Depth? Fee	eet Chipped Bentonite				
(7) Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant (Circle or Mix Ratio or Volume One) or Mud Weight				
Seating Material Used	From (Ft.) 10 (Ft.) Sacks Sealant One) or Mud Weight				
Bentonite Crumbles (Granular Bentonite)	Surface 6.0				
(8) Comments:					
(8) Comments:					
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DAR OR COUNTY USE ONLY				
Briohn Environmental Contractors	Date Received/Inspected District/County				
Signature of Person Doing Work Date Signed					
Sin (. X/2 for 1 6/27/95	Reviewer/Inspector Complying Work				
Street or Route C Telephone Number	Noncomplying Work				
W233 N2800 Roundy Cir. W. (414)-524-2080	Follow-up Necessary				
City, State, Zip Code					
Suite 101, Pewaukee, WI 53072	07724-012				
DN	NR/COUNTY OF THE PROPERTY OF T				

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(I) GENERAL INFORMATION			(2) FACILITY NAME				
Well/drillhole/Borehole	County	Origina	Original Well Owner (If Known)				
Location	MARINETTE						
NW 1/4 of NE 1/4 Sec.	13 ; T. <u>31</u> N; R. <u>27</u> X V		Present Well Owner ANSUL FIRE TECHNOLOGY CENTER				
(If applicable)			r Route				
Gov't Lot Grid Number			ton Street				
Grid Location			State, Zip Co				
ft. N. S.,	ft. ☐ E. ☐ W.		e, WI 5414				
Civil Town Name		1 .		d/or Name (If Applicable	e) WI Unique Well No		
Street Address of Wall		AFTC-20					
Street Address of Well Pierce Avenue			For Abandor				
City, Village			Soil Boring Completion Date of Abandonment				
City of Marinette] Duice of	Additioning	03/31/95			
WELL/DRILLHOLE/BOREHOLE	INFORMATION						
(3) Original Well/Drillhole/Borehole ((4) Depth t	o Water (Fee	t) 4.0_			
(Date) 03/31/95		Pump &	દે Piping Rem	noved? Yes	No X Not Applicable		
		Liner(s) Removed?		No X Not Applicable		
☐ Monitoring Well	Construction Report Available?	•	Removed?		No X Not Applicable		
☐ Water Well	Yes No	Casing	Left in Place				
☐ Drillhole		If No, I	Explain	·	,		
X Borehole	•						
		1	•		Yes X No		
Construction Type:	(Sandraint) Dut		Did Sealing Material Rise to Surface? Yes X No				
☐ Drilled ☐ Driven X Other (Specify) GEOPROBE	(Sandpoint) Dug		Did Material Settle After 24 Hours? Yes X No If Yes, Was Hole Retopped? Yes X No				
		•					
Formation Type:		r -		Placing Sealing Materia			
X Unconsolidated Formation	☐ Bedrock		ductor Pipe-0	• —	or Pipe-Pumped		
_	_		np Bailer		xplain) GRAVITY		
Total Well Depth (ft.) 6.0 Casing Diameter (ins.) (From groundsurface) Casing Depth (ft.)			Materials		onitoring wells and oring well boreholes only		
(From groundsurface) Casing Deput (it.)			t Cement Gro	Jul	ornig went borenotes only		
Lower Drillhole Diameter (in.)	1 1	Con	•	oncrete) Grout	ntonite Pellets		
Lower Diffinole Diameter (iii.)	1.1		y-Sand Slurry		anular Bentonite		
Was Well Annular Space Grouted?	Yes X No 🔲 Unknow		tonite-Sand S		ntonite- Cement Grout		
If Yes, To What Depth?	Feet		pped Bentoni	· —	momie Comon Groat		
(7)			<u> </u>		Mix Ratio		
Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	or Mud Weight		
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0				
		-					
					 		
		1	i				
(8) Comments:							
							
(9) Name of Person or Firm Doing Se	aling Work	(10)	FOR	DNR OR COUNTY	SECONIAY		
Briohn Environmental Contra	ctors	Date	Received/Ins	pected D	istrict/County		
Signature of Person Doing Work	Date Signed ,	7 [
In C. Infalin for 1	6/27/95	Revi	ewer/inspecto	п	Complying Work		
Street or Route	Telephone Number				Noncomplying Work		
W233 N2800 Roundy Cir. W.	(414)-524-2080	Follo	w-up Necess	ary			
City, State, Zip Code							
Suite 101, Pewaukee, WI 53072		OUNTY	07724-012	2	<u>-</u>		
	DNK/C	JUNIT					

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(1) GENERAL INFORMATION		(2) FACIL	TY NAME		
Well/drillhole/Borehole	County	Origina	l Well Owne	r (If Known)	
Location	MARINETTE				
<u>NW</u> 1/4 of <u>NE</u> 1/4 Sec1	3; T. 31 N; R. 27 X W	1	Well Owner	NOLOGY CENTER	***************************************
(If applicable) Gov't Lot	Grid Number		r Route ton Street		
Grid Location	·	City, S	State, Zip Co	de	
ft. 🔲 N. 🔲 S.,	ft. 🔲 E. 🔲 W.		e, WI 54143		
Civil Town Name				d/or Name (If Applicable	e) WI Unique Well No
CALLER A LITTURE CONT. II		AFTC-21			
Street Address of Well Pierce Avenue			For Abandon ig Completic		
City, Village			Abandonmer		
City of Marinette		2000 01	7 104140141101	03/31/95	
WELL/DRILLHOLE/BOREHOLE	INFORMATION				
(3) Original Well/Drillhole/Borehole C	Construction Completed On	(4) Depth t	o Water (Fee	t) <u>4.0</u>	
(Date) 03/31/95	·	Pump &	t Piping Rem	oved? Yes	No X Not Applicable
	•	Liner(s) Removed?	Yes 🔲	No X Not Applicable
☐ Monitoring Well	Construction Report Available?		Removed?		No X Not Applicable
Water Well	Yes No		Left in Place	? Yes X	No
☐ Drillhole X Borehole		If No, E	xpiain		<u></u>
[X] Borenole		Was Ca	sing Cut Off	Below Surface?	Yes X No
Construction Type:	•				Yes X No
☐ Drilled ☐ Driven			-		Yes 🗓 No
Other (Specify) GEOPROBE		If Yes	, Was Hole R	Letopped?	Yes 🗓 No
		(5) Require	d Method of	Placing Sealing Materia	1
Formation Type:	PT Detects	Con	ductor Pipe-C	Gravity Conducto	r Pipe-Pumped
X Unconsolidated Formation	☐ Bedrock		np Bailer		cplain) GRAVITY
Total Well Depth (ft.) 6.0	asing Diameter (ins.)	(6) Sealing	Materials		onitoring wells and
(From groundsurface)	Casing Depth (ft.)		t Cement Gro	, ut	oring well boreholes only
T 1911 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		I	•	oncrete) Grout	
Lower Drillhole Diameter (in.)	1	Con		1 —	ntonite Pellets anular Bentonite
Was Well Annular Space Grouted?	Yes X No Unknown		/-Sand Slurry tonite-Sand S	, —	ntonite- Cement Grout
If Yes, To What Depth?	Feet		pped Bentoni		momic- cement Grout
(7) Seeling Make					Mix Ratio
Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	or Mud Weight
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0		
· ·		 			
		ŀ			ł
(8) Comments:		·•	•		
(9) Name of Person or Firm Doing Se Briohn Environmental Contra	-	(10)		D)ZK40K40K40k0	
		LJaie	Received/Ins	pecieu D	istrict/County
Signature of Person Doing Work	Date Signed / 4/27 /55	Revi	ewer/Inspecto	or in	Complying Work
Street or Route	Telephone Number		•	H	Noncomplying Work
W233 N2800 Roundy Cir. W.	(414)-524-2080	Follo	w-up Necess	ary	
City, State, Zip Code] [
Suite 101, Pewaukee, WI 53072			07724-012	2	
	DNR/CO	UNIT			

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION	(2) FACILITY NAME
Well/drillhole/Borehole Location County MARINETTE	Original Well Owner (If Known)
NW 1/4 of NE 1/4 Sec. 13; T. 31 N; R. 27	
(If applicable) Gov't Lot Grid Numbe	Street or Route One Stanton Street
Grid Location ft. □ N. □ S., ft. □ E. □ V	City, State, Zip Code Marinette, WI 54143
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No AFTC-22
Street Address of Well Pierce Avenue	Reason For Abandonment Soil Boring Completion
City, Village	Date of Abandonment
City of Marinette	03/31/95
WELL/DRILLHOLE/BOREHOLE INFORMATION	(A) Double to Water (Fact)
(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 03/31/95 Monitoring Well Construction Report Available? Water Well Yes No	A Depth to Water (Feet) 4.0 Pump & Piping Removed? Yes No Not Applicable
X Borehole Construction Type: □ Drilled □ Driven (Sandpoint) □ Dug X Other (Specify) GEOPROBE	Was Casing Cut Off Below Surface? Did Sealing Material Rise to Surface? Did Material Settle After 24 Hours? If Yes, Was Hole Retopped? Yes X No Yes X No Yes X No
Formation Type: \[\begin{align*} \text{Unconsolidated Formation} & \text{Bedrock} \\ Total Well Depth (ft.) \text{6.0} & \text{Casing Diameter (ins.)} \\ (From groundsurface) & \text{Casing Depth (ft.)} \\ Lower Drillhole Diameter (in.) \text{1.1} \\ Was Well Annular Space Grouted? \text{Yes} \begin{align*} \text{No} \text{Unkn} \\ If Yes, To What Depth? \text{Feet} \end{align*}	Chipped Bentonite
(7) Sealing Material Used	From (Ft.) To (Ft.) No. Yards, (Circle Sacks Sealant (Circle or Volume One) or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface 6.0
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work Briohn Environmental Contractors	(10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected District/County
Signature of Person Doing Work Date Signed 6/27/95	Reviewer/Inspector Complying Work
Street or Route Telephone Number (414)-524-2080	Follow-up Necessary
City, State, Zip Code	
Suite 101, Pewaukee, WI 53072	07724-012

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION		(2) FACIL			
Well/drillhole/Borehole Location	County	Origina	l Well Owne	r (If Known)	-
	MARINETTE	Decemb	Well Owner		
	13; T. 31 N; R. 27 X W	ANSUL F	TRE TECH	NOLOGY CENTER	
(If applicable) Gov't Lot	Grid Number	Street o	r Route ton Street		
Grid Location		City, S	State, Zip Co	de	
ft. 🔲 N. 🔲 S.,	ft. ☐ E. ☐ W.		e, WI 54143		
Civil Town Name		Facility AFTC-23		d/or Name (If Applicable	e) WI Unique Well No
Street Address of Well		Reason	For Abandor	ment	
Pierce Avenue		Soil Borin	ng Completio	on	
City, Village		Date of	Abandonmer		
City of Marinette	INCORPORTATION.			03/31/95	
WELL/DRILLHOLE/BOREHOLE (3) Original Well/Drillhole/Borehole ((4) Denth t	o Water (Fee	t) 4.0	
(5) Original Weil/Diffinole/Borehole (Date) 03/31/95	construction Completed On		t Piping Rem		No X Not Applicable
(Date) 03/31/33		1	c I iping Rein) Removed?		No X Not Applicable
☐ Monitoring Well	Construction Report Available?	1	Removed?		No X Not Applicable
Water Well	Yes No		Removed? Left in Place		
Drillhole	103 110	If No, E			110
X Borehole	1		·		
_		Was Ca	sing Cut Off	Below Surface?	Yes X No
Construction Type:		Did Sea	iling Materia		Yes 🛛 No
	(Sandpoint) Dug				Yes X No
X Other (Specify) GEOPROBE		If Yes	, Was Hole R	letopped?	Yes 🛛 No
		(5) Require	d Method of	Placing Sealing Materia	ıl
Formation Type:	□ Palacile	Con	ductor Pipe-C	Gravity Conducto	or Pipe-Pumped
X Unconsolidated Formation	☐ Bedrock	☐ Dun	np Bailer		xplain) GRAVITY
	Casing Diameter (ins.)	(6) Sealing	Materials		onitoring wells and
(From groundsurface)	Casing Depth (ft.)	. –	t Cement Gro	, at	oring well boreholes only
		. —		oncrete) Grout	
Lower Drillhole Diameter (in.)	<u>i.1</u>		crete	, —	ntonite Pellets
Was Well Annular Space Grouted?	Voc V No C Halmana		y-Sand Slurry		anular Bentonite
If Yes, To What Depth?	Yes X No Unknown Feet		tonite-Sand S		ntonite- Cement Grout
	Test		pped Bentoni		I Min Dadi
(7) Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0]
				 	
(8) Comments:					
(9) Name of Person or Firm Doing Se	aling Work	(4.0)	FOR	DAR OR COUNTY U	SE ONLY
Briohn Environmental Contra		200000000000000000000000000000000000000	Received/Ins		istrict/County
Signature of Person Doing Work	Date Signed ,	1			
Bic. Vi for 1	6/27/95	Revi	ewer/Inspecto	и [Complying Work
Street or Route	Telephone Number]			Noncomplying Work
W233 N2800 Roundy Cir. W.	(414)-524-2080	Folk	w-up Necess	ary	
City, State, Zip Code					
Suite 101, Pewaukee, WI 53072	DNR/CO	INTY	07724-012	2	
	DNR/CU	V:41 I			

Form 3300-5B

Rev. 3-94

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/drillhole/Borehole County	Original Well Owner (If Known)
Location MARINETTE	
NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 X W	Present Well Owner ANSUL FIRE TECHNOLOGY CENTER
(If applicable)	Street or Route
Gov't Lot Grid Number	One Stanton Street
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Marinette, WI 54143
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No
	AFTC-24
Street Address of Well	Reason For Abandonment
Pierce Avenue	Soil Boring Completion
City, Village	Date of Abandonment
City of Marinette	03/31/95
WELL/DRILLHOLE/BOREHOLE INFORMATION	
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 4.0
(Date) 03/31/95	Pump & Piping Removed? Yes No X Not Applicable
	Liner(s) Removed? Yes No X Not Applicable
☐ Monitoring Well Construction Report Available?	Screen Removed? Yes No X Not Applicable
Water Well Yes No	Casing Left in Place? Yes X No
Drillhole	If No, Explain
X Borehole	
	Was Casing Cut Off Below Surface? Yes X No
Construction Type:	Did Sealing Material Rise to Surface? Yes X No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours?
X Other (Specify) GEOPROBE	If Yes, Was Hole Retopped?
	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
▼ Unconsolidated Formation ■ Bedrock	Dump Bailer X Other (Explain) GRAVITY
Total Well Depth (ft.) 6.0 Casing Diameter (ins.)	(6) Sealing Materials For monitoring wells and
(From groundsurface) Casing Depth (ft.)	Neat Cement Grout monitoring well boreholes only
	Sand-Cement (Concrete) Grout
Lower Drillhole Diameter (in.) 1.1	Concrete ! Bentonite Pellets
Dower Diffinite Diameter (ii.)	Clay-Sand Slurry X Granular Bentonite
Was Well Annular Space Grouted? Yes X No Unknown	. -
If Yes, To What Depth? Feet	Chipped Bentonite
(7) Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant (Circle or Volume One) Mix Ratio or Mud Weight
-	
Bentonite Crumbles (Granular Bentonite)	Surface 6.0
(8) Comments:	
(-)	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Briohn Environmental Contractors	Date Received/Inspected District/County
	Distributing
Signature of Person Doing Work Date Signed	Reviewer/Inspector Complying Work
	Noncomplying Work
Street or Route W233 N2800 Roundy Cir. W. Telephone Number (414)-524-2080	Follow-up Necessary
City, State, Zip Code	1. SILUTE UP 1. TOCOLOSIU.)
Suite 101, Pewaukee, WI 53072	
DNR/COL	J NTY 07724-012

Form 3300-5B

Rev. 3-94

(1) GENERAL INFORMATION		(2) FACIL	TY NAME		
Well/drillhole/Borehole Location	County MARINETTE	Origina	l Well Owner	r (If Known)	
NW 1/4 of NE 1/4 Sec. 1	3 ; T. 31 N; R. 27 X W		Well Owner	NOLOGY CENTER	<u> </u>
(If applicable)			r Route ton Street	· · · · · · · · · · · · · · · · · · ·	
Grid Location	Grid Number				
ft. N. S.,	ft. 🗆 E. 🔲 W.	1	State, Zip Co e, WI 54143		
Civil Town Name	it E w.				ole) WI Unique Well No
		AFTC-25			<u> </u>
Street Address of Well Pierce Avenue			For Abandor ng Completic	 -	
City, Village			Abandonmer		
City of Marinette				03/31/95	
WELL/DRILLHOLE/BOREHOLE					
(3) Original Well/Drillhole/Borehole C	Construction Completed On		o Water (Fee	· ———	The 1977 has a second
(Date) 03/31/95		_	Piping Rem		No X Not Applicable
D. Continuing W. II	Company Down Assistant	•	Removed?		No X Not Applicable
☐ Monitoring Well ☐ Water Well	Construction Report Available? Yes No		Removed? Left in Place		No X Not Applicable No
Drillhole		If No, E		· L 140 E	3 110
X Borehole	•	l			
			-		Yes X No
Construction Type: Drilled Driven	(Sandnaint) Dua.		~		Yes X No
Drilled Driven X Other (Specify) GEOPROBE			, Was Hole R		Yes X No Yes X No
Formation Type:		1		Placing Sealing Mater	
X Unconsolidated Formation	☐ Bedrock		ductor Pipe-C np Bailer	• —	tor Pipe-Pumped Explain) GRAVITY
Total Well Depth (ft.) 6.0	Casing Diameter (ins.)	(6) Sealing			monitoring wells and
(From groundsurface)	Casing Depth (ft.)		t Cement Gro		itoring well boreholes only
		☐ San	d-Cement (Co	oncrete) Grout	
Lower Drillhole Diameter (in.)	<u>l.1</u>	Con			Sentonite Pellets
Was Well Annular Space Grouted?	Yes X No Unknown		y-Sand Slurry tonite-Sand S	. —	Granular Bentonite Sentonite- Cement Grout
If Yes, To What Depth?	Feet		pped Bentoni		sentonne- Cement Grout
(7)			1		Mix Ratio
Sealing Mate	rial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Circle or Volume One	or Mud Weight
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0		
		<u> </u>			
	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u> </u>		
(8) Comments:		·····			
(9) Name of Person or Firm Doing Se	aling Work	(10)	E(O)R	DAR OR COUNTY	USE ONLY
Briohn Environmental Contra	•		Received/Ins	spected	District/County
Signature of Person Doing Work	Date Signed				
3- 1. Holin ba 1	6/27/95	Revi	ewer/Inspecto	or [[Complying Work
Street or Route W233 N2800 Roundy Cir. W.	Telephone Number (414)-524-2080	17-11	ow-up Necess		Noncomplying Work
City, State, Zip Code	(117)-321-2000	FOLIC	w-nh necess	cuy	
Suite 101, Pewaukee, WI 53072	2		09904.044	•	
	DNR/COL	עדאל	07724-012	4	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 3-94

(1) GENERAL INFORMATION		(2) FACIL	ITY NAME	**************************************	
Well/drillhole/Borehole	County	Origina	l Well Owner	r (lf Known)	······································
Location	MARINETTE				
	□ E	Present	Well Owner		
<u>NW</u> 1/4 of <u>NE</u> 1/4 Sec.	13 ; T31 N; R27 🗶 W	ANSUL I	TRE TECH	NOLOGY CENTE	R ·
(If applicable)	·		r Route .		
Gov't Lot	Grid Number	One Stan	ton Street		
Grid Location		City, S	State, Zip Co	de	· ·
ft. 🔲 N. 🔲 S.,	ft. 🗌 E. 🔲 W.		e, WI 54143		
Civil Town Name		Facility	Well No. and	d/or Name (If Applic	able) WI Unique Well No
	•	AFTC-26			
Street Address of Well		Reason	For Abandon	nment	
Pierce Avenue		Soil Bori	ng Completio	on	
City, Village		Date of	Abandonmer	nt	
City of Marinette		ļ		03/31/95	
WELL/DRILLHOLE/BOREHOLE	INFORMATION				
(3) Original Well/Drillhole/Borehole (Construction Completed On	(4) Depth t	o Water (Fee	t) 4.0	
(Date) 03/31/95	•	Pump &	દે Piping Rem	oved? Yes	☐ No X Not Applicable
<u> </u>		Liner(s) Removed?	 ☐ Yes	□ No X Not Applicable
☐ Monitoring Well	Construction Report Available?		Removed?		□ No X Not Applicable
Water Well	Yes No		Left in Place		X No
Drillhole		If No, E			
X Borehole	1	l	• —	<u></u>	
<u></u>		Was Ca	sing Cut Off	Below Surface?	Yes X No
Construction Type:	•			l Rise to Surface?	Yes X No
	(Sandpoint) Dug	1	-	After 24 Hours?	Yes X No
Other (Specify) GEOPROBE		I .	, Was Hole R		Yes X No
Formation Type:				Placing Sealing Mat	
X Unconsolidated Formation	☐ Bedrock	_	ductor Pipe-C		uctor Pipe-Pumped
	tand		np Bailer		(Explain) GRAVITY
	Casing Diameter (ins.)	(6) Sealing			or monitoring wells and onitoring well boreholes only
(From groundsurface)	Casing Depth (ft.)	_	t Cement Gro	Jul 1	officing well borelioles only
			•	oncrete) Grout	
Lower Drillhole Diameter (in.)	<u>1.1</u>	☐ Con			Bentonite Pellets
			y-Sand Slurry	,	Granular Bentonite
Was Well Annular Space Grouted			tonite-Sand S	• • •	Bentonite- Cement Grout
If Yes, To What Depth?	Feet	Chi	pped Bentoni	te '	
(7)		F (F)	T. (T())	No. Yards, (Cir	cle Mix Ratio
Sealing Mate	erial Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant (Cir or Volume	ne) or Mud Weight
Bentonite Crumbles (Granular Be	ntonite)	Surface	6.0		
20				ł	1
<u> </u>					
_					
· · · · · · · · · · · · · · · · · · ·					
		<u> </u>		<u></u>	
(8) Comments:					
**** <u></u>					
(9) Name of Person or Firm Doing Se	ealing Work	(10)	FOR	anckaokaeokaa	YAUSEKONIAY
Briohn Environmental Contra	ectors	Date	Received/Ins	spected	District/County
Signature of Person Doing Work	Date Signed /	1			
6. (.) 1 = h	6/27/55	Revi	ewer/Inspecto	π	Complying Work
Street or Route	Telephone Number	1			Noncomplying Work
W233 N2800 Roundy Cir. W.	(414)-524-2080	Follo	w-up Necess	ary	
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APPENDIX B - FIELD METHODOLOGIES

Soil Boring Advancement and Soil Sample Collection

Two methods of boring advancement were used at the AFTC property. During the Task I activities, a hydraulically-operated sampling probe was used for advancement of the boreholes. During the Task II activities, a drilling rig equipped with hollow-stem augers was used to advance the borings. The methodologies used are presented below.

The Task I boreholes were advanced using a Briohn Environmental Contractors Geoprobe Series AT-660 Large Bore Sampler equipped with a one-inch diameter acetate liner. The soil sampler was pressed, using a hydraulic ram, to the desired sampling depth. upon reaching the sampling depth, the sampler was opened by removing the stop pin. The drive point piston then pushed the sampler a distance of two feet into the soils. Upon retrieval of the sampler, visual and olfactory observation of the recovered materials were made in accordance with ASTM method D-2487, and with reference to method D-2488.

The Task II boreholes were advanced at AFTC using 4¼-inch internal diameter hollow stem augers, in accordance with the American Society for Testing and Materials (ASTM) Method D-1586, Section 5.1.3. Standard undisturbed-soil sample collection procedures were used in conjunction with the installation of the soil borings. A steel split-barrel sampling tube was used for the collection and retrieval of the soil samples in accordance with ASTM method D-1586. Upon retrieval of the sampler, visual and olfactory observation of the recovered materials were made in accordance with ASTM method D-2487, and with reference to method D-2488.

Samples were described in the field with respect to the soil type (Unified Soil Classification System Code), grain size distribution, color (or discoloration), odor, moisture content, consistency and photoionizable constituent content, as appropriate. The observations were recorded in a bound field notebook and later transferred to soil boring logs. Between each sampling event, the split-barrel sampler was washed in a trisodium phosphate (TSP) solution and double rinsed in clean tap water. All down-hole equipment was steam cleaned between borings.

Recovered soil samples were containerized for eventual laboratory analysis ("primary" samples) or in-field analysis ("co-located" samples). Following collection, all primary samples were clearly labeled, placed in a cooler, on-ice, and securely stored pending delivery to the laboratory. Sample labels identified the date of sample collection, the project identification number, the sampling location, and the depth from which the sample was collected. Samples were delivered to the laboratory within 48 hours of sample collection.

In addition, selected soil samples were analyzed in the field using a field gas chromatograph (GC) laboratory. The GC used was an HP5890 and was equipped with a J & W Scientific DB-624 Megabore capillary column specifically designed for analyzing VOC. The GC was

also equipped with an H-Nu PID, a flame ionization detector, and an electron capture detector. The samples were analyzed for BTEX concentrations using a wet headspace method.

Samples intended for laboratory analysis of GRO were containerized in tared 40 milliliters (ml) glass jars with teflon septa. Approximately 10 grams of soil were placed in each jar and preserved in the field with 10 ml of laboratory-prepared purge-and-trap grade methanol.

Samples intended for laboratory analysis of PVOCs were containerized in laboratory-supplied six-ounce glass jars. The jars were tightly packed to minimize headspace and were securely capped with a teflon-lined lid.

Samples intended for laboratory analysis of total lead were containerized in laboratory-supplied four-ounce plastic jars. The jars were filled with soil and securely capped with a teflon-lined lid.

Field PID Screening

Co-located samples were collected from each sampling interval for in-field screening with a photoionization detector (PID). The PID yields a semi-quantitative head-space analysis of the volatile compounds in the sample that have ionization potentials equal to or less than 10.6 electron-Volts (eV). The PID was calibrated in the field, according to manufacturer's instructions, using 100-ppm isobutylene span gas and air (zero gas), and checked between each screening event for proper response. The peak instrument readings were recorded on the soil boring logs. PID readings from the co-located samples were assumed to be similar to the primary samples. As such, the primary samples were not screened. This procedure reduces the escape of volatile components from the sample submitted for laboratory analysis.

The co-located samples were loosely placed in resealable plastic bags to provide sufficient headspace to optimize PID screening results. The samples were allowed to warm to approximately 70°F. and screened in the field using a MicroTip PID.

Monitoring Well Installation

Following soil boring installation, ground water monitoring wells were installed in a manner consistent with Chapter NR 141 of the Wisconsin Administrative Code using standard methodologies. In general, the wells were constructed of schedule 40 polyvinylchloride (PVC), flush threading, factory cut 0.010 slot (10 slot) well screens and flush threading, schedule 40 PVC riser pipes. Filter pack materials consisted of coarse sand, extending approximately one foot above the top of the well screen, overlain by approximately one foot of fine sand. Coarse sand consisted of Red Flint Sand Silica brand 80-120 quartz sand, while fine sand consisted of Badger Mining Co. brand 40-60 quartz sand. Pure Gold brand chipped bentonite was used as a sealing material, and extended from the top of the fine sand to approximately one foot bgs. The wells were finished with locking, steel, protective

casings. Following installation, the wells were allowed to equilibrate then developed by surging and purging the wells, using a standard PVC bailer and/or a submersible pump.

Depth to Water Measurements

Depth to water measurements were collected with a Keck model oil/water interface probe. The depth to water is a measurement from the top of the PVC riser to water and/or free product surface(s) within the monitoring well. Depth to water is measured to the nearest .01 inches. Once the depth to water was determined, the measured distance is recorded in a bound field notebook.

The depth to water measurements were converted to water table elevation readings by subtracting the measurement from the surveyed elevation of the top of the well's riser. The survey was conducted using the elevation of a local bench mark or reference point.

Well Development

The monitoring wells were developed in accordance with Chapter NR 141 of the Wisconsin Administrative Code by surging and purging the wells of an appropriate volume of water. The appropriate volume of water to purge from a well during development, based on the volume of water within the well, is dependent on the thickness of the water column within a well. The thickness of the water column within a well is estimated by subtracting the measured depth to water from the known depth of the well. Once the thickness of the water column is known, it is evaluated along with the volume of saturated sand pack surrounding the well, and the volume of feet of saturated riser within the well. For the purposes of this project, the volume of water per foot of saturated sand pack was estimated at 0.89 gallons/foot (gpf). The total volume of water within the well is therefore 0.89 gpf multiplied by the thickness of the saturated sandpack. For the purposes of this project, the appropriate volume of water to remove during development was ten times the volume of If, however the well could be pumped or bailed dry during water within a well. development, the well was bailed or pumped dry three times to complete development. The volume of water actually removed from the well was recorded in a bound field notebook.

Ground Water Sample Collection

Ground water samples were collected using different methodologies during each task of the investigation. During the Task I activities, ground water samples were collected from each boring location by lowering a three-foot slotted steel well point down the boring. A three-eighths-inch diameter polyethylene tubing was lowered down the interior of the probe and water was extracted using a peristaltic pump. The ground water samples were analyzed in the field using a GC laboratory for BTEX content.

Samples obtained during the Task II activities were collected as follows. After purging the appropriate volume of water, or purging the well dry three times, the well was allowed to recharge. Following recharge, ground water samples were collected. Sampling was

conducted by lowering a decontaminated bailer into the water column within the well, in a manner such that disturbance to the water column was minimized. The bailer was then raised to the surface and fitted with a precision sampling point. Water was discharged from the bailer, through the precision sampling point, into the appropriate, laboratory-supplied sample container, and if necessary, preserved with hydrochloric acid (HCL) or nitric acid (HNO₃). Following collection, all samples were clearly labeled, placed in a cooler, on-ice, and securely stored pending delivery to the laboratory. Sample labels identified the date of sample collection, the project discreet identification number, the sampling location, and the sample matrix. Samples were delivered to the laboratory within 48 hours of sample collection.

Samples for GRO and VOC analysis were containerized in laboratory-supplied 40 ml glass vials, and preserved with 1:1 HCL. The vials were securely capped with a teflon-septum lid and checked to ensure that no headspace existed within the sample container.

Samples for dissolved metals analysis were placed in laboratory-supplied, 250 ml plastic bottles and pre-preserved with HNO₃. Prior to containerization, the samples were filtered using a 0.45 micron filter. The bottles were securely capped with a teflon-lined lid and delivered to the laboratory.

Sample Custody

Sample custody procedures are designed to comply with U.S. EPA and National Enforcement Investigation Council (NEIC) requirements for sample control. Samples collected during the site investigation were the responsibility of identified persons from the time they were collected until they or their derived data were incorporated into the final report. Stringent chain-of-custody procedures were followed to maintain and document sample possession. A sample or evidence file is considered to be in the custody of the designated person if it is in possession; in view, after being in possession; was in possession and was placed in a secured location; or in a designated secure area.

Chain-of-custody forms were completed to the fullest extent possible prior to delivery of the sample to the laboratory. They included the following information: sample number, date collected, source of sample (including type of sample and site identification) and name of sampler. The forms were filled out in a legible manner using waterproof ink and were signed by the sampler. Samples were always accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them signed, dated and noted the time on the record. The custody record documents sample custody transfer from the sampler to the laboratory.

Samples were packaged properly for shipment and delivered for analysis with a separate custody record accompanying each shipment. The original record accompanied the shipment and a copy was retained by the field sampler and filed immediately upon return to the office.

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County	1	N	IARIN	JETTE	ž.			,	DNK	Jounty 38	Code	Civil 1			Villag ARINI					
San	iple								•							Soil	Prope	rties		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet			nd Geol	ck Descri ogical Or Major Ur	igin Fo	oΓ		uscs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
2	24/18		3.0 -4.0 -5.0 -7.0 -10.0 -11.0	1.3	to 4.0 to 6.0	mater graves salves D, reddined, moreleum on ND, reddined, tra wet, str rundoned nular be	ght brood of odder owish revisit, structured or congress of the congress of th	ed, findist, no own, filong own, filong own, filong own, filong et with	ne ne	SP SP SP			292							
Signat		erury D	mat 1	<u>ne in</u>	formati	on on	uns to	mi is	true a	Firm	Dan	ies &	Mod	ore, l	nc.	OWIE	uye.			
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State of Wisc Department of	onsin of Natu	ral Res	cources	Route To: Solid Waste Emergency Response Wastewater	Ur W	ater Re	und T				BORI 1400-12		og i		Rev.	5-92
Facility/Proje	ct Nam	ne		☐ Superfund	□ Ot	her Licens	e/Perr	nit/Mo	nitorin	g Num	ber	Borin	Page_ g Num	ber	of	
ANSÚL FÍ	RE TE	CHNC						_						AFT		
BRIOHN E PEWAUKI	NVIR	ONMI	ENTAL	ne of crew chief)		03		g Starte 0 / 9 D Y	95_	Date 1 03 M]	$\frac{3}{M} = \frac{1}{2}$	Comp 0 / D Y	pleted 95 Y		g Mei	
DNR Facility	· Weli I	Vo. V	I Unique W	ell No. Common Well	Name	Final S		Water I Feet M			e Eleva	_Feet	MSL	1.	10_ir	ameter nches
Boring Locat State Plane	ion		N,		E S	La	t	• •	Ħ	Local	Grid L		n (If ap N	plicabl	e)	ПE
NW 1/4 o	f NE	_ 1/4 o		13 , T 31 N, R 2		Long			#			eet 🗖			_Feet	<u> </u>
County	N	IARIN	ETTE		DNR C	County 38	Code				Villag ARINI					
Sample					1								Prope	rties		<u> </u>
જ (ii)	इ	eet		Soil/Rock Description							ve					
Number and Type Length Att. & Recovered (in)	Blow Counts	Depth in Feet		And Geological Origin F Each Major Unit	or		uscs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 24/18	_	-	0.0 to	0.3 CLAY, some grav	el, (line	r ,	FILL			292		_				<u> </u>
2 24/16 3 24/24		1.0 -2.0 -3.0 -4.0 -5.0 -7.0 -8.0 -10.0	0.3 to 1.3 to 1.5 to 2.0 to	grained, dry to me petroleum odor 1.5 SAND, reddish be grained, dry to me strong petroleum 2.0 SAND, gray, fine dry to moist, sligh petroleum odor 4.0 SAND, reddish be grained, moist, pe odor	brown, finding the first transfer of the fir	ne ne ne	SP SP SP			236						
	ertify	that 1	he inform	nation on this form is	true a	nd co	rrect	to th	e bes	t of r	ny kn	owle	dge.			
Signature	- 1)/		West	Blue 1	Mound	Road,	Suite 2		Brookfie			05-6245		

State of Windows Department	sconsin of Nati	ural Res	sources	■ Wast	Waste gency Response ewater	Ur W	ız. Was ıdergro ater Re	und T				BORI 400-12				Rev.	
Facility/Pro	iect Na	me		☐ Super	rfund	Ot		e/Pem	nit/Mo	nitorin	g Num	ber	Borin	Page_ g Num	1 ber	-	
ANSÚL F	IRE TI	ECHNO			-1:-0										AFT		
BRIOHN PEWAUK	ENVIF	RONM	ENTAL	ame of crew	cmerj		_03		g Starte 0 / 9 D Y		_03	Drilling 3 / 3 M D	0 /	95_		PRO	
DNR Facili	ty Well	No. V	/I Unique ———	Well No.	Common Well	Name	Final S		Water I Feet M		Surfac	e Eleva		MSL		ole Di . 10 _ii	ameter nches
Boring Loca State Plane	ition			N,		E S	La	t	0 1	11	Local	Grid L		n (If ap N	plicabl	e)	ΠE
	of NE	1/4 c	f Section	13 , T _	31 N, R 2	<u>7</u> W	Long		• •	n			eet 🗆			_Fee	<u>l w</u>
County]	MARI	NETTE			DNR C	County 38	Code				· Villag ARIN I					
Sample						_1								Prope	rties		
Number and Type Length Att. & Recovered (in)	Blow Counts	Depth in Feet		And Geo	ock Description logical Origin F Major Unit	or		uscs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
2 24/1	8	-1.0 -2.0 -3.0 -4.0 -5.0 -7.0 -8.0 -11.0	2.0 to	ma gra o 1.3 SA dry o 2.0 SA gra odd o 4.0 SA gra odd o 6.0 SA	ND, reddish bi ined, moist, pe	rown to re graine um odo rown, fir etroleum rown, fir etroleum rown, fir etroleum rown, fir	ed, r ne ne ne ne	SP SP SP			238						
I hereby of Signature	certify	that	the info	rmation on	this form is				to th				owle	dge.			
2-	<u>(,</u>	<u> </u>	1		1 162 Wie Stat	l	13255	West	Blue 1	Mound	Road,	Suite 2					<u>05-624</u> 5

State of Depart	of Wisc Iment o	onsin of Natu	ral Res	sources	☐ Eme	d Waste ergency Response stewater	e 🔲 Uı	ater Re	und T				BORI 1400-12		og I		Rev.	5-92
Facilit	у/Ргоје	ct Nan	ne		☐ Sup	erfund		ther Licens	е/Реп	nit/Mo	nitorin	g Nur	ber	Borin	Page_g Num	ber	of	
Boring BRIC	Drille OHN E	d By (l NVIR	Firm na	DLOGY Clame and na ENTAL NSIN		v chief)		_03		g Starte 0 / 9 D Y		_03	Orilling M D	0_/_				hod
DNR I	aculity	Weli I	Vo. W	/I Unique V	Vell No.	Common Well	Name	Final S		Water I Feet M		Surfac	e Elev		MSL		ole Di .10 ii	ameter iches
Boring State I	Locati	ion		N	ſ,		E S	La	.t	• '	н	Local	Grid L		n (If ap N	plicabl	e)	□ E
		f NE	_ 1/4 o	f Section _	13 , T	31 N, R 2	27 W DNR (Long		· · ·	11	::::/ 0:		eet 🗖			_Fee	w
County		N	IARIN	ETTE			DNR	38	Code				ARIN	ETTE				
San	iple			-										Soil	Prope	rties		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet		And Ge	Rock Description ological Origin F h Major Unit			USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 2 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	24/18 24/18 24/23	artify	-1.0 -2.0 -3.0 -4.0 -5.0 -6.0 -7.0 -10.0	4.2 to 4.4 to 4.7 to	4.0 S. www.mm 4.4 S. g. g. s. s. s. s. s. s. s. s. s. s. s. s. s.	LAY, some gravaterial), light bray, dry, no odor AND, reddish brained, gray, fine black organist, slight petrologist, slight petrologist, petroleum AND, reddish brained, moist, fine goist, petroleum AND, brown, mrey, trace silt, dight petroleum AND, reddish brained, dry to metroleum odor AND, reddish brained, dry to metroleum odor AND, reddish brained, dry to metroleum odor AND, reddish brained, wet, petroleum and petroleum odor AND, reddish brained, wet, petroleum odor AND, reddish brai	rown to r rown, fi ack orga grained sic silt, oleum o rown, fi etroleun rown, m grained, odor ottled w ry, odor rown, fi soist, rown, fi roleum feet with	ne nic dor ne nottled rith ne	SP SP SM SM SP		a has	296		owle				
Signat		<i>(</i>) (×	11011	• •		una 101111 18		Firm	Dam	ies &	Mo	ore, I	nc.					05.6245
2n ()										Blue N	viound	Road,	Suite 2	202, E	rookii	eld, W	1 530	<u>05-624</u> 5

State of Depart	of Wisc Iment o	onsin f Natu	ral Res	sources	☐ Was	d Waste rgency Response tewater	U	az. Was ndergro ater Re	und T			SOIL Form 4	BORI 1400-12	NG I 22			Rev. :	5-92
Facilit	y/Proje	ct Nan	ne		☐ Supe	erfund	□ Ot	her Licens	е/Реп	nit/Mo	nitorin	g Num	ber	Borin	Page_ g Num		of	1
ANS	UL FII	RE TE	CHNO	LOGY CE											_	AFT		
BRIC	HN E	NVIR		ame and name ENTAL NSIN	ie oi crew			03 M N	$\frac{1}{M} = \frac{3}{D}$		9 <u>5</u> Y	03 M	Orilling 3 / 3 M D	0 / Y	9 <u>5</u> YY	GEO	PRO	BE
			No. W	/I Unique W	ell No. 	Common Well	Name	Final S		Water I Feet M			e Eleva	_Feet	MSL	1.	10 ir	imeter iches
State I	_		1/4 0	N,			E S	La		· ·	# #	Local	Grid L		N	plicabl		□E □W
Count	_							County				-	Villag	е				
San	nple	N	ARIN	ETTE				38		-	CITY	OF M	ARINI		Prope	rties		
Number and Type	Length Att. & Recovered (in)	· Blow Counts	Depth in Feet		And Geo Each	ock Description ological Origin F n Major Unit			nscs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
2	24/16	,	1.0 -2.0 -3.0 -4.0 -5.0 -7.0 -10.0 -11.0	1.1 to 2.0 to 2.8 to 4.0 to 4.3 to 4.8 to	1.1 SA gr sil 2.0 SA so mm 2.8 SA gr sil pe 4.0 SA gr od 4.3 SA gr mm 6.0 SA gr a gr mm 6.0 SA	LAY, some gravaterial), light by ay, dry, no odor AND, reddish by ained, some blatt, dry to moist, AND, gray, fine me organic silt, oist, slight petro AND, reddish by ained, some blatt, moist, slight etroleum odor AND, yellowish ained, moist, pelor AND, reddish by ained, some blaoist, petroleum AND, yellow brooist, petroleum AND, reddish by ained, some blaoist, petroleum AND, reddish by ained, wet, petroleum AND, reddish by ained, wet, petroleum and, reddish by ained, wet, petroleum and, wet, petroleum bandoned at 6 franular bentonic	rown to rown, fir ck orga no odor grained dry to oleum orown, fi ck orga brown, etroleum rown, fin odor rown, fin odor rown, fir roleum	ne nic l, dor ne nic fine n ne	SM SM SM SM SP			178						
Signat	eby ce	ertity.	Inat 1	the inform	ation of	n this form is	true a	rnd co	Dan Dan	to th	Mo	ore, l	ny Kr	owie	uge.			
Signat	2.	<i>(' :</i>),	 `-										202, E	Brookfi	eld, W	I 530	05-624

State of Wis Department		ıral Res	sources	Route T Solid Emer	Waste gency Respons	e 🔲 Ur	ız. Was ıdergro ater Re	und T				BORI 1400-12			•	Rev.	
Facility/Proj	ect Nat	me		☐ Supe	rfund	Ot		e/Perr	nit/Mo	nitorin	a Num	her	Borin	Page_g Num	1 ber	of	1
ANSUL FI	RE TE	CHNC	DLOGY CE	NTER							_				AFT		
Boring Drille BRIOHN		•		ne of crew	chief)				g Starte			Orilling 3 / 3				g Met	
PEWAUK							MN	ัส ์ ธั	\overrightarrow{D}	Y Y		м′ <u>Б</u>		7 Y	GEC	rku	D£
DNR Facility	y Well	No. V	/I Unique W	ell No.	Common Wel	l Name	Final S		Water I Feet M		Surfac	e Elev		MSL		ole Dia	ameter iches
Boring Local State Plane	ion		N,			E S	La	t	• 1	н	Local	Grid L			plicab	e)	
	of NE	1/4 o			31 N, R _ :		Long		,	11		F	eet 🗖	N S		Feet	E W
County						DNR (County					Villag	e				
Sample	1	MARIN	VETTE		<u> </u>	<u> </u>	38			CITY	OF M	ARIN		Prope	rtiec		_
	1		j	G-31/D	ala Dana da Atan								3011	Порс	Tues		
d ii.	Blow Counts	Depth in Feet			ock Description logical Origin I							sive			_		ıts
Type Sth A	၂ ပိ	li in			Major Unit			c s	jiç	ram L	臣	pres ngth	sture tent	id it	ticit) X	0	men 🖯
Number and Type Length Att. & Recovered (in)	Blo	Dep						n s	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 24/22		+	0.0 to	0.7 CL	AY, some gra	vel, (line	r	FILL									
		Ē	h		terial), light b		1	SP			178						
1		-1.0	0.7 to		iy, dry, no odo ND, brown, fi		ed,				1,0						
1		F.		dry	, no odor			SP SP				1					
2 24/22		2.0	1.3 to		ND, brown, fi th angular fine		ea,	SP SP									
		3.0		dry	y, no odor			SP			224	l					}
		F 3.0	1.5 to		ND, reddish b ined, dry, no		ne										
		4.0	2.0 to		ND, reddish b		ne	SP SP		1							
3 24/16	1	E	24.4		nined, dry, no			SP									
		5.0	2.4 to		ND, yellowish ained, dry, no		line			1							
1	1	E	3.8 to	4.0 SA	ND, yellowish	orange,	fine			1		İ					
Ц		6.0	4.0 to	4.4 SA	nined, dry, no ND, yellowish	odor orange.	fine			1	1	ļ					
		F	il	gra	ained, dry, no	odor			l		l			1			
	1	7.0	4.4 to		ND, reddish bained, wet, no		ne		1	ł	1						ł
		Ė	 		andoned at 6						1						
		8.0		gra	anular bentoni	ite			l								
ĺ		E											ŀ				
		F ^{9.0}											l				
	1.	F															
		F ^{10.0}							1								
		E _{11.0}												1			
		F							1					l		1	
		E _{12.0}	1														
	ertify		the inform	nation on	this form is								owle	dge.			·
Signature	-1		1 -				Firm						າດາ ⊑	Prochfi.	ala 111	T 53A	05-6245
This form is											05-0243						

State of Wisc Department of	consin of Natu	ral Re:	sources	Route To	Waste gency Response	Ur	az. Was adergro ater Re	und T				BORI 1400-12		OG I	NFOR	MAT Rev.	
Facility/Proje	ect Non	10		☐ Super		☐ Ot	her		nit/Mo	nitorin	a Nive	her	IRogin	Page_g Num	1 ber	of	1
ANSUL FI	RE TE	CHN							_		_		l	_	AFT		
Boring Drille BRIOHN E				ame of crew	chief)				Starte			Orilling 3 / 3		oleted 95	1	g Mei	
PEWAUKI								<u>d</u> <u>D</u>		Y		์ ที่ ชื่		Ÿ	U.D.	7110	DD
DNR Facility	Well I	Vo. V	/I Unique	Well No.	Common Well	Name	Final		Water I Feet M		Surfac	e Elev		MSL		ole Di 10 ii	ameter iches
Boring Locat	ion		,	N,		E S	l La		0 1	#	Local	Grid L		n (If ap			
State Plane _ NW 1/4 o	f NE	1/4 c				27 W	Lon		,,			F	eet 🗖	N S		Fee	□ E t□ W
County			···			DNR C	County					Villag	e				
Sample	N	IARII I	NETTE				38			CITY	OF M	ARINI		Prope	rties		
		<u>,,</u>		Soil/Ro	ck Description								<u> </u>	Tiopo			
Att.	omut	ı Fec		And Geol	ogical Origin F	or						ssive 1	.		<u>.</u>		nts
Number and Type Length Att. & Recovered (in)	Blow Counts	Depth in Feet		Each	Major Unit			scs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	00	RQD/ Comments
R E E	В	De						n	క్రిక్ష	₩Ğ	PII	Co	క్రక్ట	Lig	Pla Ind	P 200	∑ ₂
1 24/18		-	0.0 to		AY, some grav terial), light bi		r	FILL			236						
		1.0	}	gra	y, dry, no odor	r		SP SM									
1		Ę	0.7 to	1.0 SA	ND, brown, fin	ne grain	ed,	5141									
2		2.0	1.0 to	2.0 SA	ND, greyish bl			SM	1		138						
	j	Ė	h		anic silt, trace , slight petrole			SP]					
		3.0	2.0 to	2.5 SA	ND, greyish bl	ack, wit	h										
		F	}		anic silt, trace , slight petrole												
3		4.0	2.5 to	4.0 SA	ND, reddish bi	rown, fil	ne										,
		<u>-</u> 5.0	1	gra odo	ined, moist, pe	etroleum	1										
			4.0 to		ND, reddish bi	rown, fi	ne		1								
Ц		6.0	I.	-	ined, moist, pe	etroleun	¹ ,										
		Ē	4.2 to	6.0 SA	ND, reddish b	rown, fi	ne				1		1				
		7.0]]		ined, wet, stro	ng	- 1							}			1
		F	1		roleum odor andoned at 6 f	eet with											
		8.0		gra	nular bentoni	te					•						
		Ē															
		-9.0 E	İ														
		F											ł		· '		
		F ^{10.0}						1						1			
		E _{11.0}															
		Ė						l						1		ł	
		E _{12.0}															
	ertify	that	the infor	mation on	this form is								owle	dge.			
Signature				es & Blue l				202, E	Brookfie	eld, W	I 530	05-6245					
This falms is	outha-	J	Chanta	144 147	162 Win Ctat	a Come											

State of Wisconsin Department of Na		ources	Route To: Solid Waste Emergency Res Wastewater	sponse U	ater Re	und T				BORI 400-12		OG I		Rev.	ION 5-92
Facility/Project Na	me		☐ Superfund	<u> </u>	ther Licens	e/Pen	nit/Mo	nitorin	g Num	ber	Borin	Page_g Num	1 ber		<u> </u>
ANSUL FIRE T	ECHNO				l								AFT		
Boring Drilled By BRIOHN ENVI PEWAUKEE, 1	RONMI	ENTAL	ne of crew chief)		_03		g Starte 1_/_1 D Y	15	03	$\frac{3}{M}$ $\frac{1}{D}$	1 /	oleted 9 <u>5</u> 7 Y		g Mei	
DNR Facility Wel	l No. W	/I Unique W	ell No. Common	Well Name	Final :		Water I Feet M	1		e Elev	_Feet	MSL	1.	<u>10</u> iı	ameter nches
Boring Location State Plane		N,		E S	La	t	• '		Local	Grid I		n (If ap N	plicabl	e)	П Е
	E_ 1/4 o	f Section	13 , T 31 N,		Long		0 1				eet 🗆			_Fee	w
County	MARIN	ETTE		DNR	County 38	Code	8		•	ARIN					
Sample											Soil	Prope	rties	-	
t. & lin) at lins	ee		Soil/Rock Descri							ive	İ				,,
Number and Type Length Att. & Recovered (in) Blow Counts	Depth in Feet		And Geological Or Each Major Un			uscs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 24/20	+	0.0 to	0.7 CLAY, some	e gravel, (line	· er	FILL			115						
	F.,	1	material), lig gray, dry, no		1	SP									
	F-1.0	0.7 to	1.7 SAND, yello	wish brown,	dry,										
	<u>-</u> 2.0	1 1.7 to	no odor 2.0 SILT black	, organic, son		or	***		122						
2	<u> </u>	1.7 10	wood fibers,			OL SP	***				1				
	3.0	20 4	moist, organ			SF		1	1		ł	1			
	E	2.0 to	wood fibers,	, organic, son trace sand.	ne			1							
ا ال	4.0	<u> </u>	moist, organ	ic odor		SP		1							
3	E	2.5 to	4.0 SAND, redd grained, dry	ish brown, fi	ne	J.									
	5.0	1	strong petro		II	SP		1							
	E	4.0 to		lish brown, fi	ne			1			1				
- 니	6.0	H	grained, dry strong petro		lı			1			1	ł			
]	ļ į	4.8 to	6.0 SAND, redd	lish brown, fi	ne						l				
	7.0		grained, we petroleum o		- 1	1		ļ	1			ł			
	F	1		at 6 feet with								į.			
	8.0		granular be	ntonite			1								
	Ė														
	- 9.0							1			i				
	E								l						
	10.0											Ì			
	E						l		1						
	-11.0]						ļ							1
	E														
I horoby corrife	-12.0	ho infor-	ation on this for	rm ie true s	and or	rrect	to *h	o bos	L of	774 45	Owle	dge			<u> </u>
Signature/	y mat i	rie illioim	iation on this for		Firm						AAIG	uye.		•	
5~(- /	Charter 14	14 147 and 162 Wis	State Com											<u>05-624</u> 5

State of W Department	Viscon nt of N	sin Vatura	il Res	sources		oute To: Solid Waste Emergency Respo Wastewater	nse 🔲 U	ater Re	und T			SOIL Form 4			og I		Rev.	
Facility/Pr	roject	Name				Superfund	0		е/Реп	nit/Mo	nitorir	g Num	ber	Borin	Page_g Num	1 ber		<u>-1</u>
ANSÚL	FIRE	TEC	HNO		Y CENTE	crew chief)				g Starte					leted	AFT	C-18	
BRIOHI PEWAU	n en	VIRO	NMI	ENTAI		crew chier)		_03		<u>1</u> /_1		_03	M D	1/_			PRO	
DNR Faci			o. W	/I Uniq	ue Well N	o. Common W	ell Name	Final S		Water I Feet M		Surfac		Feet	MSL	_1	.10_ir	ameter iches
Boring Lo State Plan	ie				_N,		_ E S	La	.t	•	"	Local			n (If ap N	plicabl	-	ΠE
NW 1/	4 of _	NE	1/4 o	f Section	on 13	, T <u>31</u> N, R		Long County		Civil 1		ity/ or		eet 🛘	<u>s</u> _		_Feet	W
		M	ARIN	ETTE	;		DIVIK	38	Code			OF M		ETTE				
Sample														Soil	Prope	rties		
Number and Type Length Att. &	Recovered (in)	Blow Counts	Depth in Feet			oil/Rock Descripti d Geological Origi Each Major Unit			uscs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	/18		-1.0 -2.0 -3.0 -4.0 -5.0 -7.0 -8.0 -10.0 hat t	2.0 2.2 2.4 4.0	to 2.2 to 2.4 to 4.0 to 4.5 to 6.0	CLAY, some g material), light gray, dry, no o SAND, yellowis grained, dry to odor SAND, yellowis grained, dry to odor SILT, organic, sand, fine grain no odor SAND, yellowis grained, dry, n SAND, yellowis grained, dry to odor SAND, yellowis grained, dry to odor SAND, yellowis grained, wet, n Abandoned at granular bento	t brown to dor sh brown, moist, no sh brown, moist, no black, wid ned, moist sh brown, moist, no sh brown, moist, no sh brown, moist, no	fine fine fine					ny kn	owle	dge.			
Signature	- 1	7 .	\mathcal{L}	سل				Firm						102 F	1-6	_1.2 111	T 520	05.6245

13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-62
This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days or

both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

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Boring Location State Plane NW 1/4 of		of Secti	N,	,T_31_ N, R_	_E S	La		o 1	n 	Local			n (If ap N S	plicabl	•	□E □W
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Signature	0	1	<u></u>		i	Firm	Dam	es &	Mod	re. I	nc.					

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NW County		f NE	_ 1/4 o	f Secti	on 13	, T <u>31</u>	N, R_	27 W	Long County		<u> </u>	" "			eet 🛮			Feet	<u>w</u>
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This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less

than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Depart	of Wisc	f Natu		sources	; <u>[</u>	Route To: Solid Waste Emergency Re Wastewater Superfund	esponse	□ U ₁	az. Was ndergro ater Re	und T	es	_	Form 4	1400-12 	22	Page_	_1_	FORMATION Rev. 5-92		
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☐ Emergency Response ☐ Wastewater ☐							sponse 🔲	Haz. Wa: Undergro Water Re	und T				BORI 1400-12			NFORMATION Rev. 5-92 1 of 1			
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Department of Natural Resources	Emergency Response Use Wastewater W	ater Re	und Ta				BORI 1400-12			٠	Rev.	
Facility/Project Name	Superfund	ther Licens	e/Pem	nit/Mor	nitorin	g Num	ber	Borin	Page_g Num	1 ber	ot	
ANSUL FIRE TECHNOLOGY CENTE										AFT		
Boring Drilled By (Firm name and name of BRIOHN ENVIRONMENTAL	crew chief)	Date I 03		3 Starte 1 / 9			Orilling			Drillin GEO	g Met	
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Sample							Soil	Prope	rties			
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and Jana and			n s (Graphic Log	Well Diagram	PID/FID	Com	Mois	Liquid Limit	Plast Inde	P 200	RQD Com
2 24/20	CLAY, some gravel, (line material), light brown to gray, dry, no odor SAND, brown, fine grain dry, no odor SAND, reddish brown, fi grained, some organic bl silt, dry to moist, no petroleum odor SAND, reddish brown, fi grained, dry to moist, no odor SAND, reddish brown, fi grained, wet, no odor Abandoned at 6 feet with granular bentonite	ne ack	SP SP SP			6.1						
Signature Signature	on on this form is true a	Firm	Dam	es &	Mo	ore, I	nc.	owie	uye.			-

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		6		berriess, oury memor		1	1/19/95)		4/	19/95		HSA		
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Number	Length (in) Recovered	Blow Counts	Depth In Feet	Daen Wajor Or		S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
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I hereb	y certif	y that	the info	rmation on this form is true and c	orrect to the b	est of my	knowled	ge.	-	•					
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(1)	1	1 -	10	D) Shamm			13255	West B	luemoi	ınd Rd,				i, WI	53005
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Borin	g Numt	ег	AF	TC-27 Use only as an attachment to Form 44	00-122	!.					Pag	e 2	of 2	2
Sar	nple									Soil	Prope			
Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
- 1			- - 13	SAND; reddish brown, fine grained, wet, trace silt	SM									
			13	End of boring at 13.0' *sample submitted for laboratory analysis										

Depar	tment of	Natu	ral Reso	urces	☐ Solid V	Vaste ency Respon		laz. Was Indergro		Tanks			For	m 4400	-122			7-91		
					☐ Wastev			Vater Re												
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			-3	Bottom 12" SA trace silt, grave		brown, fine grai	ined, moist,													
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SOIL BORING LOG INFORMATION

State of Wisconsin

Route To:

	f Wisco		al Reso	urces	Route To:	ite	Ėн	laz. Was	ste					L BOR m 4400		G IN	FORN	fation 7-91
					☐ Emergenc	y Response	□ υ	Indergro	ound		•					•		
					☐ Wastewate	er		Vater Re	sou	rces					Pag	. 1	of	2
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This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

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				☐ Emergency Response☐ Wastewater		ndergrou ater Res										
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This form is authorized by Chapters 144, 14 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

State of Wisconsin Route To: SOIL BORING LOG INFORMATION Department of Natural Resources Solid Waste Haz. Waste Form 4400-122 7-9																
Depart	ment of	Natur	au Keso	urces	☐ Solid Waste ☐ Emergency Response		laz. Wast Indergrou				For	m 4400	-122			7-91
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					of crew chief)		Date Dr	lling Star	rted	Date	Drillir	g Com	C-31	Drill	ing M	ethod
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	Cu	K	<u>~</u> .	<u> </u>	Capefhamm			Tel: (4	14)782-	7281	Fax: (414)782	2-7289			

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1200 Conrad Industrial Drive Ludington, Michigan 49431 616-843-1877 FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

Revised Report

Lab I.D.:

Report Date: Project : Client :

52199 06/27/1995 07724-012 Dames & Moore

13255 West Bluemound Road

Brookfield, WI 53005

Attention:

Mr. Jeff Danko

6 pages including cover sheet

Dames & Moore

Page 1 of 5

Sample: 52199-8527 Client Sample: AFTC-27/2-4

COLLECTED: RECEIVED:

04/19/1995 :

04/24/1995 10:30

Matrix: Soil

Location:

07724-012

Project: Sampled By: KK

			Reporting Detection			
Test Description	Result	Unit	Limit	Method	Date/Ana	lyst

TOTAL METALS ANALYSIS						
Lead (GFAA)	1.0	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995	GCP
			Note: R	esults are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS						
% Solids₄	82.5	%	0.1	Standard Mtd. 2540G	04/25/1995	PL
VOLATILE AROMATIC HYDRO.						
Xylenes (Total)	ND	ug/kg	15	SW-846 Mtd. 8020	04/27/1995	RJW
1,3,5-trimethylbenzene	ND	ug/kg	5	w	04/27/1995	RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5	м.	04/27/1995	RJW
Benzene	ND	ug/kg	5	н.	04/27/1995	RJW
Toluene	ND	ug/kg	5	н.	04/27/1995	RJW
Ethylbenzene	ND	ug/kg	5		04/27/1995	RJW
1,2,4-trimethylbenzene	ND	ug/kg	5		04/27/1995	RJW
			Note: R	esults are reported on a dry weight basis.		
				•		
Gasoline Range Organics (Volatile Frac	tion)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995	OY
			Note: R	esults are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Reported: 05/04/1995 Revised: 06/27/1995

a Division of

Services Inc.

CT&E Environmental

1200 Conrad Industrial Drive Ludington, Michigan 49431 616-843-1877

FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

Page 2 of 5

Dames & Moore

Sample: Client Sample: 52199-8528 AFTC-28/2-4

04/19/1995 :

Matrix: Location: Soil

Project:

07724-012

COLLECTED: RECEIVED: 04/24/1995 10:30

Sampled By: KK

			Reporting Detection				
Test Description	Result	Unit	Limit	Method		Date/Ana	lyst

TOTAL METALS ANALYSIS							
Lead (GFAA)	2.8	mg/kg	0.1	SW-846 Mtd. 7421		05/02/1995	GCP
			Note: Resu	ults are reported on a dry weight	t basis.		
PHYSICAL PROPERTY ANALYSI	-						
% Solids	91.4	%	0.1	Standard Mtd. 2540G		04/25/1995	PL
VOLATILE AROMATIC HYDRO.							
	13 000		300	SW-846 Mtd. 8020		04/26/1995	DIW
Xylenes (Total)	13,000	ug/kg		5 W-846 Mtd. 8020			
1,3,5-trimethylbenzene	26,000	ug/kg	100			04/26/1995	
Methyl Tertiary Butyl Ether	ND	ug/kg	100			04/26/1995	
Benzene	ND	ug/kg	100			04/26/1995	
Toluene	1200	ug/kg	100			04/26/1995	RJW
Ethylbenzene	1600	ug/kg	100	,		04/26/1995	RJW
1,2,4-trimethylbenzene	7600	ug/kg	100	н		04/26/1995	RJW
			Note: Resu	ults are reported on a dry weight	t basis.		
Gasoline Range Organics (Volatile F	raction)						
Gasoline Range Organics	490	mg/kg	200	Wisconsin GRO		04/28/1995	OY
			Note: Resu	ults are reported on a dry weight	t basis.		

ND = Non Detectable

Project Manager

Reported: 05/04/1995 Revised: 06/27/1995

1200 Conrad Industrial Drive Ludington, Michigan 49431 616-843-1877

FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

Page 3 of 5

Dames & Moore

Sample: Client Sample: 52199-8529 AFTC-29/2-4

COLLECTED: RECEIVED: 04/19/1995 :

04/24/1995 10:30

Matrix:

Location:

Project:

07724-012

Soil

Sampled By: KK

			Reporting			
Test Description	Result	Unit	Detection Limit	Method	Date/Ana	lyst
TOTAL METALS ANALYSIS						
Lead (GFAA)	0.7	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995	GCP
,			Note: Resul	its are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS						
% Solids,	84.3	%	0.1	Standard Mtd. 2540G	04/25/1995	PL
VOLATILE AROMATIC HYDRO.						
Xylenes (Total)	ND	ug/kg	15	SW-846 Mtd. 8020	04/26/1995	RJW
1,3,5-trimethylbenzene	ND	ug/kg	5		04/26/1995	RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5	"	04/26/1995	RJW
Benzene	ND	ug/kg	5	м	04/26/1995	RJW
Toluene	ND	ug/kg	5	*	04/26/1995	RJW
Ethylbenzene	ND	ug/kg	5		04/26/1995	RJW
1,2,4-trimethylbenzene	ND	ug/kg	5	*	04/26/1995	RJW
			Note: Resul	its are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Frac	tion)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995	OY
			Note: Resul	its are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Bissell Survell

Reported: 05/04/1995 Revised: 06/27/1995

1200 Conrad Industrial Drive Ludington, Michigan 49431. 616-843-1877

FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

Page 4 of 5

Dames & Moore

Sample: Client Sample: 52199-8530 AFTC-30/2-4

COLLECTED: C

04/19/1995 : 04/24/1995 10:30 Matrix:

Location: Project:

07724-012

Soil

Sampled By: KK

			Reporting Detection			
Test Description	Result	Unit	Limit	Method	Date/Ana	lyst
TOTAL METALS ANALYSIS				*		
Lead (GFAA)	0.8	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995	GCP
Lead (GITIII)	0.0	6,6		esults are reported on a dry weight basis.	03/02/17/3	GCI
			Note. Re	saids are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS						
% Solids,	91.7	%	0.1	Standard Mtd. 2540G	04/25/1995	PL
VOLATILE AROMATIC HYDRO.						
Xylenes (Total)	ND	ug/kg	15	SW-846 Mtd. 8020	04/26/1995	RJW
1,3,5-trimethylbenzene	ND	ug/kg	5		04/26/1995	RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5	n .	04/26/1995	RJW
Benzene	ND	ug/kg	5	*	04/26/1995	RJW
Toluene	ND	ug/kg	5		04/26/1995	RJW
Ethylbenzene	ND	ug/kg	5		04/26/1995	RJW
1,2,4-trimethylbenzene	ND	ug/kg	5		04/26/1995	RJW
			Note: Re	esults are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Frac	tion)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995	OY
			Note: Re	esults are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Reported: 05/04/1995 Revised: 06/27/1995

FAX: 616-845-9942



a Division of CT&E-Environmental Services Inc.

Page 5 of 5

Dames & Moore

Sample: Client Sample: COLLECTED:

RECEIVED:

52199-8531

04/19/1995 : 04/24/1995 10:30

AFTC-31/2-4

Matrix: Location: Soil

Project:

07724-012

Sampled By: KK

			Reporti Detection			
Test Description	Result	Unit	Limit		Date/Ana	lyst
TOTAL METALS ANALYSIS						
Lead (GFAA)	0.9	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995	GCP
			Note:	Results are reported on a dry weight basis.		
DIVINGAL DROPERTY ANALYSIS						
PHYSICAL PROPERTY ANALYSIS						
% Solids,	81.8	%	0.1	Standard Mtd. 2540G	04/25/1995	PL
VOLATILE AROMATIC HYDRO.						
Xylenes (Total)	ND	ug/kg	15	SW-846 Mtd. 8020	04/26/1995	RJW
1,3,5-trimethylbenzene	ND	ug/kg	5	•	04/26/1995	RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5		04/26/1995	RJW
Benzene	ND	ug/kg	5	*	04/26/1995	RJW
Toluene	ND	ug/kg	5	*	04/26/1995	RJW
Ethylbenzene	ND	ug/kg	5	*	04/26/1995	RJW
1,2,4-trimethylbenzene	ND	ug/kg	5	*	04/26/1995	RJW
			Note:	Results are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Frac	ction)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995	OV
Casonic Range Organics	MD	IIIg/kg		Results are reported on a dry weight basis.	04/20/1993	O I
			Note:	results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Reported: 05/04/1995 Revised: 06/27/1995

QUALITY CONTROL DATA PACKAGE ANATECH Laboratories a div. of CT&E Services

Date Reported:

05/04/95

Project Number:

52199

Dames & Moore - 07724-012

PVOC analysis by method 8260 - GC/MS

Sample #	Date Analyzed	Instrument Batch
8527	04/27/95	H27APR95
8528	04/26/95	H26APR95
8529	04/26/95	H26APR95
8530	04/26/95	H26APR95
8531	04/26/95	H26APR95

GRO analysis by method WIS. GRO

Sample #	Date Analyzed	Instrument Batch
8527	04/28/95	K28APR95A
8528	04/28/95	K28APR95A
8529	04/28/95	K28APR95A
8530	04/28/95	K28APR95A
8531	04/28/95	K28APR95A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludingtion

Method: SW-846 Mth. 8060 / 8240

Instrument:

Spiked sample ID:

HP 5972 GC/MS - H

52228-8687

Analyst:

R. Wilson

Date Analyzed:

04/26/95

Date Reported:

05/04/95

Spike lot No.:

NA

Instrument Batch:

H26APR95

H27APR95

	SPIKE	SAMPLE	MS	MS	QC
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
Compound	(ug/L)	(ug/L)	(ug/L)	REC #	REC.
1,1-Dichloroethene	20	0	16	80%	D-234
Benzene	20	0	17	85%	37-151
Trichloroethene	20	0	17	85%	71-157
Toluene	20	1	18	85%	47-150
Chlorobenzene	20	0	17	85%	37-160

	SPIKE	MSD	MSD					
	ADDED	CONCENTRATION	%		%		QC LIMIT	s
Compound	(ug/L)	(ug/L)	REC	#	RPD	#	RPD	REC.
1,1-Dichloroethene	20	16	80%		0%		22	D-234
Benzene	20	18	90%		6%		24	37-151
Trichloroethene	20	17	85%		0%		21	71-157
Toluene	20	19	90%		6%		21	47-150 '
Chlorobenzene	20	18	90%		6%		21	37-160

QC limits taken from method.

Comments:

This MS/MSD was used for batches on 5/26/95 and 5/27/95.

[#] Values outside of QC limits

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion Method: SW-846 Mth. 8060 / 8240 Analyst:

R. Wilson

Instrument:

HP 5972 GC/MS - H

Date Analyzed:

04/26/95

Matrix:

Date Reported:

05/04/95

Water

Spike lot No.:

NA

Spike level:

50 ug/L

Instrument Batch:

H26APR95

Page 1 of 2

	METH					
	BLANK	1			MIN	MAX
Compound	(ug/L)	AvgRRF	CCRRF	%D	RRF	%D
Dichlorodifluoromethane	<1	0.411	0.380	7.5%		
Chloromethane	<1	0.592	0.693	-17.1%	0.3	
Vinyl chloride	<1	0.518	0.594	-14.7%		25
Bromomethane	<1	0.138	0.315	-128.3%		
Chloroethane	<1	0.112	0.245	-118.8%		
Trichlorofluoromethane	<1	0.841	1.037	-23.3%		
1,1-Dichloroethene	<1	0.462	0.352	23.8%		25
Methylene chloride	<1	0.501	0.390	22.2%		
t-1,2-Dichloroethene	<1	0.461	0.374	18.9%		
MTBE	<1	0.980	0.813	17.0%		
1,1-Dichloroethane	<1	0.763	0.670	12.2%	0.3	25
2,2-Dichloropropane	<1	0.669	0.568	15.1%		
c-1,2-Dichloroethene	<1	0.507	0.460	9.3%		
Bromochloromethane	<1	0.233	0.208	10.7%		
Chloroform	<1	0.879	0.776	11.7%		25
1,1,1-Trichloroethane	<1	0.774	0.647	16.4%		
2-Chioroethylvinylehter	<1	0.326	0.315	3.4%		
Carbon tetrachloride	<1	0.491	0.405	17.5%		
1,1-Dichloropropene	<1	0.532	0.466	12.4%		
Benzene	<1	1.262	1.148	9.0%		25
1,2-Dichloroethane	<1	0.442	0.361	18.3%		
Trichloroethene	<1	0.418	0.360	13.9%		
1,2-Dichloropropane	<1	0.359	0.315	12.3%		25
Dibromomethane	<1	0.295	0.260	11.9%		
Bromodichloromethane	<1	0.544	0.463	14.9%		
c-1,3-Dichloropropene	<1	0.559	0.489	12.5%		
Toluene	<1	0.846	0.827	2.2%		25
:-1,3-Dichloropropene	<1	0.514	0.447	13.0%		
1,1,2-Trichloroethane	<1	0.305	0.275	9.8%		
1,2-Dibromomethane	<1	0.407	0.366	10.1%		
Tetrachloroethene	<1	0.475	0.434	8.6%		
1,3-Dichloropropane	<1	0.627	0.587	6.4%		

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion

Analyst:

R. Wilson

Instrument:

Method: SW-846 Mth. 8060 / 8240

Date Analyzed:

04/26/95

Matrix:

HP 5972 GC/MS - H

Date Reported:

05/04/95 NA

Water

Spike lot No.:

Spike level:

50 ug/L

Instrument Batch:

H26APR95

Page 2 of 2

			,			
_					MIN	MAX
Compound		AvgRRF	CCRRF	%D	RRF	%D
Dibromochloromethane	<1	0.444	0.369	16.9%		
Chlorobenzene	<1	1.045	0.942	9.9%	0.3	
1,1,1,2-Tetrachloroethane	<1	0.391	0.332	15.1%	0.3	
Ethylbenzene	<1	1.826	1.700	6.9%		25
p&m-Xylene	<2	0.703	0.693	1.4%		
o-Xylene	<1	0.703	0.691	1.7%		
Styrene	<1	1.231	1.230	0.1%		
Bromoform	<1	0.370	0.316	14.6%	0.25	
Isopropylbenzene	<1	2.390	2.040	14.6%		
Bromobenzene	<1	0.734	0.620	15.5%		
1,1,2,2-Tetrachloroethane	<1	0.758	0.644	15.0%		
1,2,3-Trichloropropane	<1	0.670	0.550	17.9%		
n-Propylbenzene	<1	3.287	2.917	11.3%		
2-Chlorotoluene	<1	2.001	1.709	14.6%		
4-Chiorotoluene	<1	2.439	2.314	5.1%		
1,3,5-Trimethylbenzene	<1	2.115	1.986	6.1%		
tert-Butylbenzene	<1	2.332	2.170	6.9%		
1,2,4-Trimethylbenzene	<1	1.983	1.766	10.9%		
sec-Butylbenzene	<1	2.997	2.697	10.0%		
1,3-Dichlorobenzene	<1	1.294	1.147	11.4%		
4-Isopropyltoluene	<1	2.330	2.166	7.0%		
1,4-Dichlorobenzene	<1	1.414	1.281	9.4%		
1,2-Dichlorobenzene	<1	1.299	1.217	6.3%		
n-Butylbenzene	<1	2.339	2.493	-6.6%		
1,2-Dibromo-3-chloropropane	<1	0.135	0.106	21.5%		
1,2,4-Trichlorobenzene	<1	0.541	0.535	1.1%		
Hexachlorobutadiene	<1	0.530	0.467	11.9%		
Naphthalene	<1	0.741	0.750	-1.2%		
1,2,3-Trichlorobenzene	<1	0.443	0.447	-0.9%		
Dibromofluoromethane		0.636	0.614	3.5%	- -	
Toluene-d8		1.208	1.288	-6.6%		
4-Bromofluorobenzene		0.683	0.703	-2.9%		

Comments:

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: CT & E, Ludingtion

Analyst:

Rob Wilson

Method: SW-846 Mth. 8060 / 8240

Date Analyzed:

04/26/95

Instrument:

HP 5972 GC/MS - H

Date Reported:

05/04/95

Instrument Batch:

H26APR95

~ = .		% RELATIVE
m/e	ION ABUNDANCE CRITERIA	ABUNDANCE
50	15.0-40.0% of mass 95	20.8
75	30.0-60.0% of mass 95	46.4
95	Base peak, 100% relative abundance	100
96	5.0-9.0% of mass 95	7
173	Less than 2.0% of mass 174	0
174	Greater than 50.0% of mass 95	80.2
175	5.0-9.0% of mass 174	7
176	Greater than 95.0%, but less than 101.0% of mass 174	97.5
177	5.0-9.0% of mass 176	6.4

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion Method: SW-846 Mth. 8060 / 8240 Analyst:

R. Wilson

Instrument:

Date Analyzed:

04/27/95 05/04/95

Matrix:

HP 5972 GC/MS - H

Date Reported:

NA

Spike level:

Water 50 ug/L Spike lot No.: Instrument Batch:

H27APR95

Page 1 of 2

	METH	1				
	BLANK				MIN	MAX
Compound	(ug/L)	AvgRRF	CCRRF	%D	RRF	%D
Dichlorodifluoromethane	<1	0.566	0.615	-8.7%		
Chloromethane	<1	0.732	0.676	7.7%	0.3	
Vinyl chloride	<1	0.640	0.580	9.4%		25
Bromomethane	<1	0.087	0.203	-133.3%		
Chloroethane	<1	0.140	0.206	-47.1%		
Trichlorofluoromethane	<1	0.946	0.945	0.1%		
1,1-Dichloroethene	<1	0.392	0.371	5.4%		25
Methylene chloride	<1	0.456	0.423	7.2%		
t-1,2-Dichloroethene	<1	0.414	0.405	2.2%		
MTBE	<1	0.782	0.914	-16.9%		
1,1-Dichloroethane	<1	0.763	0.754	1.2%	0.3	25
2,2-Dichloropropane	<1	0.669	0.660	1.3%		
c-1,2-Dichloroethene	<1	0.507	0.483	4.7%		
Bromochloromethane	<1	0.233	0.222	4.7%		
Chloroform	<1	0.879	0.845	3.9%		25
1,1,1-Trichloroethane	<1	0.774	0.744	3.9%		
2-Chloroethylvinylehter	<1	0.326	0.165	49.4%		
Carbon tetrachloride	<1	0.491	0.493	-0.4%		
1,1-Dichloropropene	<1	0.532	0.534	-0.4%		
Benzene	<1	1.262	1.249	1.0%		25
1,2-Dichloroethane	<1	0.442	0.421	4.8%	-	
Trichloroethene	<1	0.418	0.411	1.7%		
1,2-Dichloropropane	<1	0.359	0.354	1.4%		25
Dibromomethane	<1	0.295	0.287	2.7%		
Bromodichloromethane	<1	0.544	0.536	1.5%		
c-1,3-Dichloropropene	<1	0.559	0.561	-0.4%		
Toluene	<1	0.846	0.828	2.1%		25
t-1,3-Dichloropropene	<1	0.514	0.504	1.9%		
1,1,2-Trichloroethane	<1	0.305	0.289	5.2%		
1,2-Dibromomethane	<1	0.407	0.390	4.2%		
Tetrachloroethene	<1	0.475	0.489	-2.9%		
1,3-Dichloropropane	<1	0.627	0.632	-0.8%		

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion

Method: SW-846 Mth. 8060 / 8240

Analyst:

R. Wilson

Instrument:

HP 5972 GC/MS - H

Date Analyzed:

04/27/95

Matrix:

Water

Date Reported: Spike lot No.: 05/04/95 NA

Spike level:

50 ug/L

Instrument Batch:

H27APR95

Page 2 of 2

					T	
J					MIN	MAX
Compound		AvgRRF	CCRRF	%D	RRF	%D
Dibromochloromethane	<1	0.444	0.436	1.8%		
Chlorobenzene	<1	1.045	1.036	0.9%	0.3	
1,1,1,2-Tetrachloroethane	<1	0.391	0.387	1.0%	0.3	
Ethylbenzene	<1	1.826	1.859	-1.8%		25
p&m-Xylene	<2	0.703	0.743	-5.7%		
o-Xylene	<1	0.703	0.728	-3.6%		
Styrene	<1	1.231	1.296	-5.3%		
Bromoform	<1	0.370	0.358	3.2%	0.25	
Isopropylbenzene	<1	2.390	2.377	0.5%		
Bromobenzene	<1	0.734	0.705	4.0%		
1,1,2,2-Tetrachloroethane	<1	0.758	0.709	6.5%		
1,2,3-Trichloropropane	<1	0.670	0.621	7.3%		
n-Propylbenzene	<1	3.287	3.290	-0.1%		
2-Chlorotoluene	<1	2.001	1.965	1.8%		
4-Chlorotoluene	<1	2.439	2.587	-6.1%		1
1,3,5-Trimethylbenzene	<1	2.115	2.242	-6.0%		
tert-Butylbenzene	<1	2.332	2.437	-4.5%		
1,2,4-Trimethylbenzene	<1	1.983	2.019	-1.8%		
sec-Butylbenzene	<1	2.997	3.040	-1.4%		
1,3-Dichlorobenzene	<1	1.294	1.282	0.9%		
4-Isopropyltoluene	<1	2.330	2.433	-4.4%		
1,4-Dichlorobenzene	<1	1.414	1.419	-0.4%		
1,2-Dichlorobenzene	<1	1.299	1.349	-3.8%		
n-Butylbenzene	<1	2.339	2.732	-16.8%		
1,2-Dibromo-3-chloropropane	<1	0.135	0.127	5.9%		
1,2,4-Trichlorobenzene	<1	0.541	0.658	-21.6%		
Hexachlorobutadiene	<1	0.530	0.568	-7.2%		
Naphthalene	<1	0.741	0.913	-23.2%		
1,2,3-Trichlorobenzene	<1	0.443	0.546	-23.3%		
Dibromofluoromethane		0.636	0.600	5.7%		<u> </u>
Toluene-d8		1.208	1.209	-0.1%		
4-Bromofluorobenzene		0.683	0.702	-2.8%		

Comments:

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: CT & E, Ludingtion Method: SW-846 Mth. 8060 / 8240

Instrument:

6 Mtn. 8060 / 8240 HP 5972 GC/MS - H Analyst:

Rob Wilson

Date Analyzed:

04/27/95

Date Reported:

05/04/95

Instrument Batch:

H27APR95

		% RELATIVE
m/e	ION ABUNDANCE CRITERIA	ABUNDANCE
50	15.0-40.0% of mass 95	20.1
75	30.0-60.0% of mass 95	46
95	Base peak, 100% relative abundance	100
96	5.0-9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0
174	Greater than 50.0% of mass 95	75.2
175	5.0-9.0% of mass 174	7
176	Greater than 95.0%, but less than 101.0% of mass 174	97.6
. 177	5.0-9.0% of mass 176	6.5

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludingtion

Analyst: Date Analyzed: Omer Young

Method: SW-846 Mth. 8020 / WIS. GRO Inst.: Varian 3400 -

K

04/28/95

Date Reported:

05/04/95 V1,124,6

Spiked sample ID:

52198-8519

QC Check lot No.: Instrument Batch:

K28ARP95A

	SPIKE	SAMPLE	MS	MS	QC
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
Compound	(ug/L)	(ug/L)	(ug/L)	REC	REC.
MTBE	20	0	21.2	106%	49-130
Benzene	20	0	22.3	111%	39-150
Toluene	20	0	22.8	114%	46-148
Ethylbenzene	20	0	23.2	116%	32-160
p&m-Xylene	40	0	49.4	124%	68-134
o-Xylene	20	0	24.2	121%	63-130
1,2,4-Trimethylbenzene	20	0	23.6	118%	42-144
1,3,5-Trimethylbenzene	20	0	23.2	116%	42-145
GBO *	0.2	0	0.20	99%	80-120

	SPIKE	MSD	MSD				
•	ADDED	CONCENTRATION	%		%	QC LIMITS	6
Compound	(ug/L)	(ug/L)	REC	#	RPD	RPD	REC.
MTBE	20	20.9	104%		2%	22	49-130
Benzene	20	22.3	112%		0%	21	39-150
Toluene	20	22.6	113%		1%	23	46-148
Ethylbenzene	20	23.8	119%		3%	21	32-160
p&m-Xylene	40	48.3	121%		2%	17	68-134
o-Xylene	20	23.8	119%		2%	22	63-130
1,2,4-Trimethylbenzene	20	22.9	114%		3%	24	42-144
1,3,5-Trimethylbenzene	20	22.6	113%		3%	22	42-145
GRO * .	0.2	0.19	97%		2%	20	80-120

[#] Values outside of QC limits

QC limits taken from control chart data - Oct 94 - Jan 95. GRO QC limits taken from method.

Comme	enus:	

зн 4/1/95

^{*} GRO units are in mg/L

METHOD BLANK AND CALIBRATION CHECK

Lab Name: CT & E, Ludingtion

Method: SW-846 Mth. 8020 / WIS. GRO

Inst.: Varian 3400 -

. 8020 / WIS. GF K Analyst:

Omer Young

Date Analyzed:

04/28/95

Date Reported:

04/28/95

QC Check lot No.:

v1,124,6

Instrument Batch:

K28APR95A

	METH.	QC CHECK	QC CHECK 1	QC CHECK 2	QC CHECK 3	
	BLANK	CONC.	CONC.	CONC.	CONC.	QC RANGE
COMPOUND	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MTBE	<1	20	20.2	20.2	20.5	17.0-23.0
Benzene	<1	20	19.5	19.8	19.6	15.4-24.6
Toluene	<1	20	20.3	20.2	20.2	15.5-24.5
Ethylbenzene	<1	20	21.0	21.5	21.8	16.1-23.9
p&m-Xylene	<2	40	43.2	42.9	43.6	34.0-46.0
o-Xylene	<1	20	22.2	21.6	21.7	17.0-23.0
1,2,4-Trimethylbenzene	<1	20	22.0	21.5	22.2	17.0-23.0
1,3,5-Trimethylbenzene	<1	20	22.0	20.7	21.3	17.0-23.0
GRO *	<.1	0.2	0.18	0.18	0.18	0.16-0.24
TFT (surr.)	98%	100%	111%	105%	98%	60%-140%
BFB (surr.)	99%	100%	105%	101%	95%	61%-136%

QC Range taken from method, 17-23 ug/L used for compounds not in method.

Comments.				

NA - Not analyzed.

^{* -} GRO units are mg/L

THURKET U-111 DAMES & MOORE Turnaround-Time 13255 West Bluemound Road, Suite 202 Rush (preapproved by Lab) Chain of Custody Seal #_____ Brookfield, Wisconsin 53005 Normal (414) 782-7281 FAX: (414) 347-0288 SHIPPING DETAILS: 782-7289 PROJECT NAME: Method of Shipment PROJECT #:__ Contents Temperature Send Results To: Comments ____ PROJECT MANAGER: Toff LAB USE DATE SAMPLE SAMPLE **ANALYSIS REQUESTED** SAMPLE ID No. TIME CONTAINERS REMARKS/PRESERVATIVES ONLY **TYPE** 8527 202 MeOH 252s AFTC-28 12-4 <u>`</u>خ 8529 8530 807 S 531 207 807 SUBTOTAL TOTAL **CHAIN OF CUSTODY RECORD** COMMENTS SAMPLER: ISIGNATURE) DATE RELINQUISHED BY: (SIGNATURE) DATE/TIME | RECEIVED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE) DATE/TIME | RECEIVED BY: (SIGNATURE)

RELINQUISHED BY: (SIGNATURE) DATE/TIME RECEIVED FOR LABORATORY:

BY: (SIGNATURE)

DATE/TIME

I Harry

DATE/TIME

RECEIVED BY: (SIGNATURE)

RELINQUISHED BY: SKNATURE

TABLE 1

RESULTS OF THE BTEX ANALYSIS PERFORMED AT ANSUL FIRE PROTECTION MARINETTE, WI

BORING	SAMPLE	В	T	EB	MPX	OX
	ID	(PPB)	(PPB)	(PPB)	(PPB)	(PPB)
1	GW	4	11	ND	ND	15
2	GW	118	90	18	53	14
3	GW	132	28	81	135	139
4	GW	23	118	6	22	15
4	2 (SOIL)	175	138	135	439	164
5	GW	26	9	6	15	7
5	2(SOIL)	233	152	173	537	251
6	GW	2513	3658	2370	3717	2607
7	GW	21027	16037	2781	8216	5199
8	GW	1480	4270	1093	3344	1562
9	GW	9760	9358	738	3144	1238
10	GW	20108	4153	4797	10916	5418
11	GW	127210	89933	19046	81849	31928
12	GW	21	15	6	18	15
13	GW	14548	20475	7045	22982	9061
14	GW	35082	16810	4375	2572	1977
15	GW	44	15	7	14	7
16	GW	8	16	10	3	4
17	GW	472578	164373	27647	75277	3813
18	GW	10138	2866	648	2153	799
19	GW	6	5	3	11	4
20	GW	374	498	89	102	64
21	GW	24	7	11	6	5
22	GW	5	3	ND	ND	ND
23	GW	8	9	ND	22	11

B - BENZENE

T - TOLUENE

EB - ETHYLBENZENE

MPX - META, PARAXYLENE

OX - ORTHOXYLENE

GW - GROUNWATER SAMPLE

ND - NOT DETECTED

15168459942

1200 Conrod Industrial Drive Ludington, Michigan 49431 616-843-1877 FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

	Analytical Report
Lab I.D. : Report Date : Project : Client :	51782 04/18/1995 Dames & Moore - #07724-009 Dames & Moore
	13255 West Bluemound Road
	Brookfield, WI 53005
Attention :	Mr, Jeff Danko
	10 pages including cover sheet

ANATECH LAB

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Page 1 of 9

Dames & Moore

Sample: Client Sample: COLLECTED: RECEIVED:	51782-6855: AFTC-4-2: 03/30/1995 : 04/03/1995 10:58		Matri Locat Projec Samp	lon:	Soil		
Test Description		Resuji	Unit	Reporti Detectio Limit	on as a contract of the new contract of the ne	Date/Anal	yst
TOTAL METAL Lead (GFAA)	S ANALYSIS	1.4	mg/kg	0.1 Note:	SW-846 Mtd. 7421 Results are reported on a dry weight basis.	04/12/1995	GCP
PHYSICAL PRO % Solids	PERTY ANALYSIS	86.3	%	0.1	Standard Mtd. 2540G	04/04/1995	PL
	MATIC HYDRO.						
Xylenes (Total)		ND	ug/kg	15	SW-846 Mtd. 8020	04/10/1995	
1,3,5-trimethylbe		ND	ug/kg	5	· •	04/10/1995	
Methyl Tertiary I	Butyl Etner	ND ND	ug/kg	5	•	04/10/1995	
Benzene Toluene		ND ND	ug/kg ug/kg	5 5	•	04/10/1995 04/10/1995	
Ethylbenzene		ND	ug/kg ug/kg	5	•	04/10/1995	
1,2,4-trimethylbe	enzene	ND	ug/kg	5	•	04/10/1995	
				Note:	Results are reported on a dry weight basis.		****
Gasoline Range C	Organics (Volatile Frac	tion)					
Gasoline Range (ND	mg/kg	10	Wisconsin GRO	04/07/1995	LS
				Note:	Results are reported on a dry weight basis.		

ND - Non Detectable

Project Manager

Reported: 04/18/1995

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Page 2 of 9

Dames & Moore

16168459942

Service Course Plant Company C	782-6856 FTC-10-2		Mairi Locat	to the book of the top contract of a finite decision.				
 A Section of the Control of Control of the Control of	/30/1995 :	entitions and an	Projec	Printed the Committee of the Committee o	es & Moore - #07724-009	ing a series and a series are a firm that the self and addition to		
	/03/1995 10:58			ed By:				
				Reporting				
			. t	Detection				
Test Description		Result	Unit	Limit .	Method	Date/Analys		
W								
TOTAL METALS A	NALYSIS							
Lead (GFAA)		2.5	mg/kg	0.1	SW-846 Mtd. 7421	04/12/1995 G		
				Note: Results are reported on a dry weight basis.				
PHYSICAL PROPER	TY ANALYSIS							
% Solids		92.8	%	0.1	Standard Mtd. 2540G	04/04/1995 P		
VOLATILE AROMA	TIC HYDRO.							
Xylenes (Total)	75	5,000	ug/kg	300	SW-846 Mtd. 8020	04/10/1995 Ja		
1,3,5-trimethylbenzer	ne 53	3,300	ug/kg	100	•	04/10/1995 Ja		
Methyl Tertiary Buty	Ether	ND	ug/kg	100		04/10/1995 JA		
Benzene		600	ug/kg	100	**	04/10/1995 1/		
Toluene		1600	ug/kg	100		04/10/1995 1/		
Ethylbenzene		2200	ug/kg	100	•	04/10/1995 J		
1,2,4-trimethylbenzer	ne 32	2,800	ug/kg	100	•	04/10/1995 J		
				Note: Resul	its are reported on a dry weight basis.			
Gasoline Range Orga	nics (Volatile Fract	ion)						
Gasoline Range Orga	nics	4200	mg/kg	1000	Wisconsin GRO	04/10/1995 L		
				Note: Resul	its are reported on a dry weight basis.			

ND - Non Detectable

Project Manager

Reported : 04/18/1995

16168459942

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Page 3 of 9

Dames & Moore

Sample: Client Sample: COLLECTED: RECEIVED:	51782-6857 ARTC-22-2 03/31/1995 : 04/03/1995 10:58		Matri Locat Projec Samp	ion:	es & Moore - #07724-009	, <u>, , , , , , , , , , , , , , , , , , </u>	
				Reporting Detection			
Test Description		Result	Unit	Limit	Method	Date/Analy	/St
TOTAL METAL	S ANALYSIS						
Lead (GFAA)		2.8	mg/kg	0.1 Note: Resul	SW-846 Mtd. 7421 ts are reported on a dry weight basis.	04/12/1995 (JCF
	PERTY ANALYSIS					0.1.0.1.10.0.4	
% Solids		93.6	%	0.1	Standard Mtd. 2540G	04/04/1995 F	PL
VOLATILE ARG	DMATIC HYDRO.						
Xylenes (Total)		MD	ug/kg	15	SW-846 Mtl. 8020	04/10/1995 F	RIN
1,3,5-trimethylbe	enzene	ND	ug/kg	5		04/10/1995 F	RJ W
Methyl Tertiary	Butyl Ether	ND	ug/kg	5	•	04/10/1995 F	NW
Benzene		ND	ug/kg	5	•	04/10/1995 F	NI
Toluene		ND	ug/kg	5	•	04/10/1995 F	RJW
Ethylbenzene		ND	ug/kg	5		04/10/1995 F	RIN
1,2,4-trimethylbe	enzene	ND	ug/kg	5	•	04/10/1995 F	RJW
				Note: Resul	ts are reported on a dry weight basis.		
Gosalina Paras /	Organics (Volatile Frac	rtion)			x 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Gasoline Range (ND	mg/kg	10	Wisconsin GRO	04/10/1995 I	7.5
Canoline Maige	0.0	110	11.9. =0		te are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Reported: 04/18/1995

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Page 4 of 9

Dames & Moore

Gasoline Range Organics (Volatile Fraction)

Gasoline Range Organics

n

mg/kg

10

Wisconsin GRO

04/07/1995 LS

Note: Results are reported on a dry weight basis.

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported: 04/18/1995

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Page 5 of 9

Dames & Moore

Sample: 51782-5859	Matrix: Location.	Water.
COLLECTED: 03/24/1995 :	Project:	Dames & Moore - #07724-009

04/03/1995 10:58

RECEIVED: Sampled By: Lab prepped

Test Description	Result	Unit	Reporting Detection Limit	r Method	Datê/Analyst
VOLATILE AROMATIC HYDRO.			_		
Xylenes (Total)	ND	ug/L	3	SW-846 Md. 8020	04/12/1595 JA
1,3,5-trimethylbenzene	ND	ug/L	1	•	04/12/1995 JA
Methyl Tertiary Butyl Ether	ND	ug/L	1	•	04/12/1995 JA
Benzene	ND	ug/L	1	•	04/12/1995 JA
Toluene	ND	ug/L	1	•	04/12/1995 JA
Ethylbenzene	ממ	ug/L	i	4	04/12/1995 JA
1,2,4-trimethylbenzene	ND	ug/L	1	•	04/12/1995 JA

ND = Non Detectable

Project Manager

Reported: 04/18/1995

L 8-44 51/82	
DAMES & MOORE Lab ANATECH	Tumaround Time
13255 West Bluemound Road, Suite 202	N D38 □ Rush (preapproved by Lab)
DIOMIGIC WINCHISM 15007	U Romai v Se. Cm x 1 22 201
(414) 782-7281 FAX: (414) 782-7289	Proc hold tree
PROJECT NAME: 3/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4	
PROJECT #: 07724-009 Contents Tomperature.	
PROJECT MANAGER: Teff Danko Comments	
BILL TO: D&M	
LAB USE DATE SAMPLE	ÁNALYSIS REQUESTED BEMARKS/PRESERVATIVES
ONLY THE CONTAINERS NO. SAMPLE ID TYPE 6855 3/30 World AFE-4-2/MAR95 SOUL	The same of the sa
402 8	X X un preservad Ma OH
6856 40 neg 1) AFTC-10-2/MARCES	
705 22 22	X X unpliesored
6857 3/31 60M of 2) AFTC 22 2/MARCH	X MaOH
6858 60 nd co 1 AFTC Field Blade MoOH	X x inpreserved
	K Meold
6859 3-14 40-1 of 2 AFTC TIP Bluk 1420	K HCI
6860 AFTC-9/MAR95	X un presided
6867 AFTC-24/MAR95	K
6862 KTC-25 MARGS	K
6863 V PAFTC-26 MARC 15 V	X V
CHAIN OF CUSTODY RECORD SAMPLED: COMMENTS PLX (ATT TREE PRINTS)	TOTAL
SAMPLEH: PSIGNITUPE DATE PAIL HOO SAMPLES UN PRESERVED;	PLS DO PVOC ANALYSES < 7 DAYS 1
2 CALL PM BEFORE GCMS	CONFIRMATION SAMPLING
RELINQUISHED BY: SECURICAD DATE/TIME RECEIVED BY: SECURITARES RELINQUISHED BY:	(SIGNATURE) DATE/TIME RECEIVED BY: (SIGNATURE)
PELINOVOLVED DV.	SECULIAR DATE/TIME RECEIVED FOR LABORATORY DATE/TIME
RELINQUISHED BY: SOMETHED BY: SCHATLED BY:	SIGNATURE DATE/TIME RECEIVED FOR LABORATORY: DATE/TIME
2 UNI	used GRO's enclosed (u MeOH)
	•

PAGE 01

1200 Conrad Industrial Drive Ludington, Michigan 49431 616-843-1877 FAX: 616-845-9942

04/18/1995 14:36



ANATECH LAB

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	inalytical Report
Lab I.D.: Report Date: Project: Client:	51782 04/18/1995 Dames & Moore - #07724-009 Dames & Moore
	13255 West Bluemound Road
	Brookfield, WI 53005
Attention :	Mr. Jeff Danko
	10 pages (whidhe cover sheet

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Page 6 of 9

Dames & Moore

Sample:	51782-6860 AFTC-9	Matrix: Water Location
COLLECTED:	03/31/1995 :	Project; Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:

16168459942

			Reporting		
Test Description			Detection	Method	
Test Description	Result	Unit	Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDR	2				
Xylenes (Total)	<u>9.</u> 35,000	ug/L	600	SW-846 Mtd. 8020	04/12/1995 JA
1,3,5-trimethylbenzene	19,000	ug/L	200	#	04/12/1995 JA
Methyl Tertiary Butyl Ether	1900	ug/L	200	•	04/12/1995 JA
Benzene	4500	ug/L	200	*	04/12/1995 J.A
Toluene	28,000	ug/L	200	•	04/12/1995 JA
Ethylbenzene	2800	ug/L	200	•	04/12/1995 JA
1,2,4-trimethylbenzene	5400	ug/L	200	*	04/12/1995 JA

ND = Non Detectable

Project Manager

Reported: 04/18/1995

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Page 7 of 9

Dames & Moore

Sample: 51782-6861 Client Sample: AFTC-24	Matrix: Location:	Water
COLLECTED: 03/31/1995 :	Project:	Dames & Moore - #07724-009

RECEIVED: 04/03/1995 10:58 Sampled By:

Test Description	Result		Reporting Detection		
Test Description	Result	Unit :	; Limit;	: Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/L	3	SW-846 Mtd. 8020	04/12/1995 JA
1,3,5-trimethylbenzene	ND	ug/L	1	w	04/12/1995 JA
Methyl Tertiary Butyl Ether	ND	ug/L	1	•	04/12/1995 JA
Benzene	ND	ug/L	1	×	04/12/1995 JA
Toluene	ND	ug/L	1	•	04/12/1995 JA
Ethylbenzene	ND	ug/L	1	n	04/12/1995 JA
1,2,4-trimethylbenzene	ND	uz/L	1	•	04/12/1995 JA
•		-	Analyzed	by GC/MS.	

ND - Non Detectable

Project Manager

Reported : 04/18/1995

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Page 8 of 9

Dames & Moore

, sees, even essent	EIROS EBES	
Sample: Client Sample:	31/82-9882 AFTC-25	Marrix: ! Water Location:
COLLECTED:	03/31/1995 ;	Project: Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:

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			Reporting		
Test Description			Detection	Method	
Fest Description	Result	Unit	Limit	Method	Date/Analys
VOLATILE AROMATIC HYDRO					
Xylenes (Total)	ND	ug/L	3	SW-846 Mtd. 8020	04/12/1995 JA
1,3,5-trimethylbenzene	ND	ug/L	1	•	04/12/1995 JA
Methyl Tertiary Butyl Ether	ND	ug/L	1	•	04/12/1995 JA
Benzene	ND	ug/L	1		04/12/1995 JA
Toluene	ND	ug/L	1		04/12/1995 JA
Ethylbenzene	ND	ug/L	1	•	04/12/1995 JA
.2.4-trimethylbenzene	ND	ug/L	1	•	04/12/1995 JA
31-32 Aug 11-32		-	Analyzed	by GC/MS.	

ND = Non Detectable

Project Manager

Reported: 04/18/1995

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Page 9 of 9

Dames & Moore

Sample: Client Sample:	51782-6863 AFTC-26	Matrix Lotation:	Water
COLLECTED:	03/31/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

			Reporting		
Test Description	Result	Unit	Detection Limit	Method	Date/Analyst
egenflightet grand the family beautiful to the control of the cont				erre en en en en en en en en en en en en en	The state of the s
VOLATILE AROMATIC HYDRO	<u>).</u>				
Xylenes (Total)	490	ug/L	3	SW-846 Mtd. 8020	04/12/1995 JA
1,3,5-trimethylbenzene	5 5	ug/L	1	•	04/12/1995 JA
Methyl Tertiary Butyl Ether	ND	ug/L	1		04/12/1995 JA
Benzene	27	ug/L	1	•	04/12/1995 JA
Toluene	84	ug/L	i	•	04/12/1995 JA
Ethylbenzene	11	ug/L	1	•	04/12/1995 JA
1,2,4-trimethylbenzene	290	ug/L	1		04/12/1995 JA
			Analyzed	and confirmed by GC/MS.	

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported: 04/18/1995

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				MOO			Lab A	NA	TECH					Tu	maround Tim	a ,
1	$\cdot \mathbf{B}_1$	rookfie	ld. Wis	and Road, Sconsin 530	05		Chain of C	ustoc	iy Seal ≢ Ó	001039	გ		L57	Rush	(preapproved al ♥ Sec cm	A about
n 1 1	(414)	782-72	81 FA	X: (414) 7	82.	-7289		4				·	<u></u>		PIÓC +	rold time
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	PROJECT						Contents To	mperak	и • С		3					
	Sond Results PROJECT BILL TO:	MANAG	er: J & M	eff Da	nka	<u> </u>	Comments			$\bigg \bigg \bigg _{\tilde{\zeta}}$		27 F	040			۳.
	LAB USE	DATE	SAUPLE TWE	CONTAINERS	No.	SAME	LEID		SAMPLE TYPE		ÁNALY:		_/ QUESTE	D	DEMARKS/PRE	SENVATIVE8
ù	6855	3/30		World	1/	AFTE-4	2/MAR99		DIL		X				MeOH	
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<u>}</u>	6856			60 med	1) AFTC	-10-2/mps	5		<u> </u>	X			· ·	MiOH	
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7	6859	3-24		40 mg			r.p Black	 	H20	K) 				HCI .	
,)	6860			68	}		MARGS			X		ļ			UN PICSUV	20 4
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	6862						S/marg	1		K		<u></u>				
}	6863	V	_	<u> </u>	* }	MFTC-2	16 mars	5	<u> </u>	<u>K</u>					Y	
	CHAIN OF C			ORD	OMM	ENTS	nex	લ્લી	TRI PUBLICIAL	s hiiminii	**************************************	<u>Partial and I</u>	Littery (L)	V. T. Ledynorff	TOTAL	
}	SAMPLER:	SKUITUG	I	DATE KALL	H,1	O SAM! CALL	PLES'L PM BE	FOR	E GCMS	; PLS	DO	PVC ATTO	N-51	NACY:	SE < 71	·AYS!
•	RELINQUISH	ED BY:	SIGNATURE			CEIVED BY:		HEL	INQUISHED B	Y: BONA	URD DA	TE/TIME	RECEN	VED BY:	ASIGNATURE)	
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TABLE 1

RESULTS OF THE BTEX ANALYSIS PERFORMED AT ANSUL FIRE PROTECTION MARINETTE, WI

BORING	SAMPLE	В	Т	EB	MPX	OX
	ID	(PPB)	(PPB)	(PPB)	(PPB)	(PPB)
1	GW	4	11	ND	ND	15
2	GW	118	90	18	53	14
3	GW	132	28	81	135	139
4	GW	23	118	6	22	15
4	2 (SOIL)	175	138	135	439	164
5	GW	26	9	6	15	7
5	2(SOIL)	233	152	173	537	251
6	GW	2513	3658	2370	3717	2607
7	GW	21027	16037	2781	8216	5199
8	GW	1480	4270	1093	3344	1562
9	GW	9760	9358	738	3144	1238
10	GW	20108	4153	4797	10916	5418
11	GW	127210	89933	19046	81849	31928
12	GW	21	15	6	18	15
13	GW	14548	20475	7045	22982	9061
14	GW	35082	16810	4375	2572	1977
15	GW	44	15	7	14	7
16	GW	8	16	10	3	4
17	GW	472578	164373	27647	75277	3813
18	GW	10138	2866	648	2153	799
19	GW	6	5	3	11	4
20	GW	374	498	89	102	64
· 21	GW	24	7	11	6	5
22	GW	5	3	ND	ND	ND
23	GW .	8	9	ND	22	11

B - BENZENE

T - TOLUENE

EB - ETHYLBENZENE

MPX - META, PARAXYLENE

OX - ORTHOXYLENE

GW - GROUNWATER SAMPLE

ND - NOT DETECTED

1200 Conrad Industrial Drive Ludington, Michigan 49431. 616-843-1877 FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

RECEIVED MAY 0 8 1995

Analytical Report

Lab I.D.: Report Date:

Project : Client :

52198 05/03/1995 07724-012 Dames & Moore

13255 West Bluemound Road

Brookfield, WI 53005

Attention:

Mr. Jeff Danko

9 pages including cover sheet

FAX: 616-845-9942



a Division of CT&E Environmental Services Inc.

Page 1 of 8

Dames & Moore

Sample: Client Sample: 52198-8519

AFTC-1

04/20/1995 :

Matrix:

Water

Location: Project:

07724-012

COLLECTED: RECEIVED:

04/24/1995 10:24

Sampled By: KK

Reporting

			Detection		
Test Description	Result	Unit	Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS Lead (GFAA)	ND	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GCP
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/L	3	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	ND	ug/L	1		04/28/1995 OY
Methyl Tertiary Butyl Ether	ND	ug/L	1		04/28/1995 OY
Benzene	ND	ug/L	1		04/28/1995 OY
Toluene	ND	ug/L	1	"	04/28/1995 OY
Ethylbenzene	ND	ug/L	1	Ti.	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	1		04/28/1995 OY
Gasoline Range Organics (Volatile Fra	ction)				
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Reported: 05/03/1995



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Page 2 of 8

Dames & Moore

Sample: Client Sample: COLLECTED:

RECEIVED:

52198-8520

AFTC-2a

04/20/1995 : 04/24/1995 10:24 Matrix: Location:

Water

Project:

07724-012

Sampled By: KK

			Reporting Detection		
Test Description	Result	Unit	Limit	Method	Date/Analyst
			•	X	
DISSOLVED METALS ANALYSIS					
Lead (GFAA)	0.020	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GCP
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	2500	ug/L	300	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	700	ug/L	100	"	04/28/1995 OY
Methyl Tertiary Butyl Ether	2600	ug/L	100		04/28/1995 OY
Benzene	9000	ug/L	100	n	04/28/1995 OY
Toluene	9300	ug/L	100	"	04/28/1995 OY
Ethylbenzene	870	ug/L	100	"	04/28/1995 OY
1,2,4-trimethylbenzene	200	ug/L	100	"	04/28/1995 OY
Gasoline Range Organics (Volatile Fra	action)				
Gasoline Range Organics	24	mg/L	10	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Reported: 05/03/1995



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Page 3 of 8

Dames & Moore

Sample: Client Sample:

COLLECTED:

RECEIVED:

52198-8521

AFTC-2b

04/20/1995 : 04/24/1995 10:24 Matrix:

Water

Location: Project:

07724-012

Sampled By: KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Lead (GFAA)	ND	mg/L	0.002	SW-846 Mtd. 7421	05/01/1995 GCP
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/L	3	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	ND	ug/L	1	а	04/28/1995 OY
Methyl Tertiary Butyl Ether	4	ug/L	1	и	04/28/1995 OY
Benzene	3	ug/L	1	n	04/28/1995 OY
Toluene	1	ug/L	1	u	04/28/1995 OY
Ethylbenzene	ND	ug/L	1	m .	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/28/1995 OY
			NOTE: Res	ults were confirmed by GC/MS.	
Gasoline Range Organics (Volatile F	raction)				
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Reported: 05/03/1995



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Page 4 of 8

Sample:

RECEIVED:

Dames & Moore

52198-8522

Client Sample: AFTC-27 COLLECTED: 04/20/1995 :

04/20/1995 : 04/24/1995 10:24

Matrix: Water

Location:

Project: 07724-012

Sampled By: KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analys	st
DISSOLVED METALS ANALYSIS						
Lead (GFAA)	0.009	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GO	CP
VOLATILE AROMATIC HYDRO.						
Xylenes (Total)	1700	ug/L	300	SW-846 Mtd. 8020	04/28/1995 OY	Y
1,3,5-trimethylbenzene	490	ug/L	100	н	04/28/1995 OY	Y
Methyl Tertiary Butyl Ether	2100	ug/L	100	"	04/28/1995 OY	Y
Benzene	6800	ug/L	100	n	04/28/1995 03	Y
Toluene	2000	ug/L	100		04/28/1995 03	Y
Ethylbenzene	920	ug/L	100		()4/28/1995 OY	Y
1,2,4-trimethylbenzene	160	ug/L	100	и	04/28/1995 O	Y
Gasoline Range Organics (Volatile Fra	action)					
Gasoline Range Organics	15	mg/L	10	Wisconsin GRO	04/28/1995 ON	Y

ND = Non Detectable

Project Manager

Reported: 05/03/1995

FAX: 616-845-9942



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Page 5 of 8

Dames & Moore

Sample: Client Sample: COLLECTED:

RECEIVED:

52198-8523 AFTC-28

04/20/1995 :

04/20/1995 : 04/24/1995 10:24 Matrix:

Water

Location: Project:

07724-012

Sampled By: KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Lead (GFAA)	0.005	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GCP
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	1600	ug/L	300	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	3000	ug/L	100	"	04/28/1995 OY
Methyl Tertiary Butyl Ether	ND	ug/L	100	"	04/28/1995 OY
Benzene	810	ug/L	100		04/28/1995 OY
Toluene	1300	ug/L	100		04/28/1995 OY
Ethylbenzene	410	ug/L	100	н	04/28/1995 OY
1,2,4-trimethylbenzene	870	ug/L	100		04/28/1995 OY
Gasoline Range Organics (Volatile Fra					
Gasoline Range Organics	62	mg/L	10	Wisconsin GRO	05/01/1995 OY

ND = Non Detectable

Project Manager

Certification Numbers: NJ #62002, WI #999959180; Lab IDs: MI #MI078, WI #0564

Reported: 05/03/1995

FAX: 616-845-9942



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Page 6 of 8

Dames & Moore

Sample: Client Sample: COLLECTED:

RECEIVED:

52198-8524

AFTC-29

04/20/1995 :

04/24/1995 10:24

Matrix: Water

Location:

Project:

.07724-012

Sampled By: KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS				×	
Lead (GFAA)	0.002	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GCP
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/L	3	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	ND	ug/L	1	"	04/28/1995 OY
Methyl Tertiary Butyl Ether	ND	ug/L	1	"	04/28/1995 OY
Benzene	ND	ug/L	1	,	04/28/1995 OY
Toluene	ND	ug/L	1	n.	04/28/1995 OY
Ethylbenzene	ND	ug/L	1		04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	1		04/28/1995 OY
G Li B Q Q Li G Walatla Fa					
Gasoline Range Organics (Volatile Fra					
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Reported: 05/03/1995

FAX: 616-845-9942



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Page 7 of 8

Dames & Moore

Sample: Client Sample: 52198-8525

COLLECTED: RECEIVED: AFTC-30 04/20/1995 :

04/24/1995 10:24

Matrix: Location: Water

Project:

07724-012

Sampled By: KK

	1		Reporting Detection		
Test Description	Result	Unit	Limit	Method	Date/Analyst
	1 1/0/0				
DISSOLVED METALS ANA	LYSIS				
Lead (GFAA)	0.002	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GCP
VOLATILE AROMATIC HY					
Xylenes (Total)	ND	ug/L	300	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	140	ug/L	100	u	04/28/1995 OY
Methyl Tertiary Butyl Ether	15,000	ug/L	100		04/28/1995 OY
Benzene	180	ug/L	100	*	04/28/1995 OY
Toluene	1400	ug/L	100	u u	04/28/1995 OY
Ethylbenzene	ND	ug/L	100	ii .	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	100	n	04/28/1995 OY
a 40					
Gasoline Range Organics (Vo	latile Fraction)				
Gasoline Range Organics	13	mg/L	10	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissett

Reported: 05/03/1995



a Division of CT&E Environmental Services Inc.

Page 8 of 8

Dames & Moore

Sample: Client Sample: COLLECTED:

RECEIVED:

52198-8526 AFTC-31

04/20/1995 : 04/24/1995 10:24 Matrix:

Location:

Project:

Sampled By: KK

07724-012

Water

			Reporting Detection		
Test Description	Result	Unit	Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Lead (GFAA)	ND	mg/L	0.002	SW-846 Mtd. 7421	05/02/1995 GCP
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/L	3	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	ND	ug/L	1	15	04/28/1995 OY
Methyl Tertiary Butyl Ether	ND	ug/L	1	н	04/28/1995 OY
Benzene	ND	ug/L	1	н	04/28/1995 OY
Toluene	ND	ug/L	1		04/28/1995 OY
Ethylbenzene	ND	ug/L	1	н	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/28/1995 OY
Gasoline Range Organics (Volatile Fra	action)				
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Reported: 05/03/1995

QUALITY CONTROL DATA PACKAGE ANATECH Laboratories a div. of CT&E Services

Date Reported:

05/03/95

Project Number:

52198

Dames & Moore - 07724-012

WIS. PVOC by method 8020

Sample #	Date Analyzed	Instrument Batch	
8519	04/28/95	K28APR95A	
8520	04/28/95	K28APR95A	
8521	04/28/95	K28APR95A	Confirmed by GC/MS on 5/2/95
8522	04/28/95	K28APR95A	
8523	04/28/95	K28APR95A	Dilution analyzed on 5/1/95
8524	04/28/95	K28APR95A	
8525	04/28/95	K28APR95A	

WIS. GRO

Sample #	Date Analyzed	Instrument Batch
8519	04/28/95	K28APR95A
8520	04/28/95	K28APR95A
8521	04/28/95	K28APR95A
8522	04/28/95	K28APR95A
8523	04/28/95	K28APR95A
8524	04/28/95	K28APR95A
8525	04/28/95	K28APR95A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludingtion

Analyst:

Omer Young

Method: SW-846 Mth. 8020 / WIS. GRO

Date Analyzed:

04/28/95

Inst.: Varian 3400 -

Date Reported:

05/03/95

Spiked sample ID:

52198-8519

QC Check lot No.:

V1,124,6

Instrument Batch:

K28ARP95A

	SPIKE	SAMPLE	MS	MS	QC
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
Compound	(ug/L)	(ug/L)	(ug/L)	REC	REC.
MTBE	20	0	21.2	106%	49-130
Benzene	20	0	22.3	111%	39-150
Toluene	20	0	22.8	114%	46-148
Ethylbenzene	20	0	23.2	116%	32-160
p&m-Xylene	40	0	49.4	124%	68-134
o-Xylene	20	0	24.2	121%	63-130
1,2,4-Trimethylbenzene	20	0	23.6	118%	42-144
1,3,5-Trimethylbenzene	20	0	23.2	116%	42-145
GRO *	0.2	0	0.20	99%	80-120

	SPIKE	MSD	MSD				
	ADDED	CONCENTRATION	%		%	QC LIMITS	;
Compound	(ug/L)	(ug/L)	REC	#	RPD	RPD	REC.
MTBE	20	20.9	104%		2%	22	49-130
Benzene	20	22.3	112%		0%	21	39-150
Toluene	20	22.6	113%		1%	23	46-148
Ethylbenzene	20	23.8	119%		3%	21	32-160
p&m-Xylene	40	48.3	121%		2%	17	68-134
o-Xylene	20	23.8	119%		2%	22	63-130
1,2,4-Trimethylbenzene	20	22.9	114%		3%	24	42-144
1,3,5-Trimethylbenzene	20	22.6	113%		3%	22	42-145
GRO * .	0.2	0.19	97%		2%	20	80-120

[#] Values outside of QC limits

QC limits taken from control chart data - Oct 94 - Jan 95. GRO QC limits taken from method.

Comments.		
	-	

^{*} GRO units are in mg/L

METHOD BLANK AND CALIBRATION CHECK

Lab Name: CT & E, Ludingtion

Method: SW-846 Mth. 8020 / WIS. GRO

Inst.: Varian 3400 -

Κ

Analyst:

Omer Young

Date Analyzed:

04/28/95

Date Reported:

QC Check lot No.:

05/03/95 v1,124,6

Instrument Batch:

K28APR95A

	METH.	QC CHECK	QC CHECK 1	QC CHECK 2	QC CHECK 3	
	BLANK	CONC.	CONC.	CONC.	CONC.	QC RANGE
COMPOUND	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MTBE	<1	20	20.2	20.2	20.5	17.0-23.0
Benzene	<1	20	19.5	19.8	19.6	15.4-24.6
Toluene	<1	20	20.3	20.2	20.2	15.5-24.5
Ethylbenzene	<1	20	21.0	21.5	21.8	16.1-23.9
p&m-Xylene	<2	40	43.2	42.9	43.6	34.0-46.0
o-Xylene	<1	20	22.2	21.6	21.7	17.0-23.0
1,2,4-Trimethylbenzene	<1	20	22.0	21.5	22.2	17.0-23.0
1,3,5-Trimethylbenzene	<1	20	22.0	20.7	21.3	17.0-23.0
GRO *	<.1	0.2	0.18	0.18	0.18	0.16-0.24
TFT (surr.)	98%	100%	111%	105%	98%	60%-140%
BFB (surr.)	99%	100%	105%	101%	95%	61%-136%

QC Range taken from method, 17-23 ug/L used for compounds not in method.

Comments.	

NA - Not analyzed.

^{* -} GRO units are mg/L

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludingtion

Analyst:

Omer Young

Method: SW-846 Mth. 8020 / EPA Mth. 602

Date Analyzed:

05/02/95

Inst.: Varian 3400 -

K

Date Reported:

05/03/95

Spiked sample ID:

52268-8869

QC Check lot No.:

V1,124,6

Instrument Batch:

K01MAY95A

	SPIKE	SAMPLE	MS	MS	QC
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
Compound	(ug/L)	(ug/L)	(ug/L)	REC	REC.
MTBE	20	0	21	105%	49-130
Benzene	20	0	20	100%	39-150
Toluene	20	0	20	100%	46-148
Ethylbenzene	20	0	21	105%	32-160
p&m-Xylene	40	0	43	108%	68-134
o-Xylene	20	0	21	105%	63-130
1,2,4-Trimethylbenzene	20	0	21	105%	42-144
1,3,5-Trimethylbenzene	20	0	20	100%	42-145

	SPIKE	MSD ·	MSD				
	ADDED	CONCENTRATION	%		%	QC LIMITS	
Compound	(ug/L)	(ug/L)	REC	#	RPD	RPD	REC.
MTBE	20	23	115%	*	9%	22	49-130
Benzene	20	23	115%		14%	21	39-150
Toluene	20	22	110%		10%	23	46-148
Ethylbenzene	20	23	115%		9%	21	32-160
p&m-Xylene	40	47	118%		9%	17	68-134
o-Xylene	20	24	120%		13%	22	63-130
1,2,4-Trimethylbenzene	20	22	110%		5%	24	42-144
1,3,5-Trimethylbenzene	20	22	110%		10%	22	42-145

QC limits taken from control chart data - Oct 94 - Jan 95.

# '	V٤	alues	outside	of	QC I	imits

C.	^	m	m	۵	n	te	
v	v			Ç		w	٠

METHOD BLANK AND CALIBRATION CHECK

Lab Name: CT & E, Ludingtion

Method: SW-846 Mth. 8020 / EPA Mth. 602

Inst.: Varian 3400 -

K

Analyst:

Omer Young

Date Analyzed:

05/01/95

Date Reported:

05/03/95

QC Check lot No.:

v1,124,6

Instrument Batch:

K01MAY95A

	METH.	QC CHECK	QC CHECK 1	QC CHECK 2	QC CHECK 3	
	BLANK	CONC.	CONC.	CONC.	CONC.	QC RANGE
COMPOUND	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MTBE	<1	20	20.5	20.6	20.1	17.0-23.0
Benzene	<1	20	19.4	19.2	18.8	15.4-24.6
Toluene	<1	20	20.7	19.6	19.1	15.5-24.5
Ethylbenzene	<1	20	22.1	21.0	20.4	16.1-23.9
p&m-Xylene	<2	40	45.7	43.3	42.1	34.0-46.0
o-Xylene	<1	20	22.1	21.2	20.6	17.0-23.0
1,2,4-Trimethylbenzene	<1	20	22.6	21.0	20.3	17.0-23.0
1,3,5-Trimethylbenzene	<1	20	22.4	20.5	19.9	17.0-23.0
Naphthalene	<1	20	21.6	18.9	17.8	17.0-23.0
TFT (surr.)	98%	100%	94%	101%	98%	60%-140%
BFB (surr.)	99%	100%	99%	99%	96%	61%-136%

QC Range taken from method, 17-23 ug/L used for compounds not in method.

NA - Not analyzed.

Comments:		
	 	•

4/1/95 4B

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludingtion

Method: SW-846 Mth. 8060 / 8240

Instrument:

HP 5972 GC/MS - H

Spiked sample ID:

52277-8897

Analyst:

R. Wilson

Date Analyzed:

05/02/95

Date Reported:

05/03/95

Spike lot No.:

NA

Instrument Batch:

H02MAY95

	SPIKE	SAMPLE	MS	MS	QC
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
Compound	(ug/L)	(ug/L)	(ug/L)	REC #	REC.
1,1-Dichloroethene	20	0	21	105%	D-234
Benzene	20	0	21	105%	37-151
Trichloroethene	20	0	20	100%	71-157
Toluene	20	1	21	100%	47-150
Chlorobenzene	20	0	21	105%	37-160

	SPIKE	MSD	MSD					
	ADDED	CONCENTRATION	%		%		QC LIMIT	s
Compound	(ug/L)	(ug/L)	REC	#	RPD	#	RPD	REC.
1,1-Dichloroethene	20	22	110%		5%		22	D-234
Benzene	20	21	105%		0%		24	37-151
Trichloroethene	20	19	95%		5%		21	71-157
Toluene	20	21	100%		0%		21	47-150
Chlorobenzene	20	21	105%		0%		21	37-160

QC limits taken from method.

Values outside of QC limits

Comments:	C	o	m	m	eı	nts	:
-----------	---	---	---	---	----	-----	---

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion Method: SW-846 Mth. 8060 / 8240

Analyst: Date Analyzed: Rob Wilson

Instrument:

HP 5972 GC/MS - H

Date Reported:

05/02/95 05/03/95

Matrix:

Water

Spike lot No.:

V1,119,5

Spike level:

50 ug/L

Instrument Batch:

H02MAY95

Page 1 of 2

	METH					
	BLANK				MIN	MAX
Compound	(ug/L)	AvgRRF	CCRRF	%D	RRF	%D
Dichlorodifluoromethane	<1	0.566	0.544	3.9%		
Chloromethane	<1	0.732	0.605	17.3%	0.3	
Vinyl chloride	<1	0.640	0.516	19.4%		25
Bromomethane	<1	0.087	0.124	-42.5%		
Chloroethane	<1	0.140	0.156	-11.4%		
Trichlorofluoromethane	<1	0.946	0.800	15.4%		
1,1-Dichloroethene	<1	0.392	0.382	2.6%		25
Methylene chloride	<1	0.456	0.410	10.1%		
t-1,2-Dichloroethene	<1	0.414	0.411	0.7%		
MTBE	<1	0.782	0.891	-13.9%		
1,1-Dichloroethane	<1	0.763	0.764	-0.1%	0.3	25
2,2-Dichloropropane	<1	0.669	0.674	-0.7%		
c-1,2-Dichloroethene	<1	0.507	0.490	3.4%		
Bromochloromethane	<1	0.233	0.218	6.4%		
Chloroform	<1	0.879	0.860	2.2%		25
1,1,1-Trichloroethane	<1	0.774	0.756	2.3%		
2-Chloroethylvinylehter	<1	0.326	0.155	52.5%		
Carbon tetrachloride	<1	0.491	0.484	1.4%		
1,1-Dichloropropene	<1	0.532	0.523	1.7%		
Benzene	<1	1.262	1.208	4.3%		25
1,2-Dichloroethane	<1	0.442	0.419	5.2%		
Trichloroethene	<1	0.418	0.399	4.5%		
1,2-Dichloropropane	<1	0.359	0.347	3.3%		25
Dibromomethane	<1	0.295	0.273	7.5%		
Bromodichloromethane	<1	0.544	0.522	4.0%		
c-1,3-Dichloropropene	<1	0.559	0.535	4.3%		†
Toluene	<1	0.846	0.798	5.7%		25
t-1,3-Dichloropropene	<1	0.514	0.475	7.6%		
1,1,2-Trichloroethane	<1	0.305	0.270	11.5%		
1,2-Dibromomethane	<1	0.407	0.365	10.3%		<u> </u>
Tetrachloroethene	<1	0.457	0.479	-4.8%		
1,3-Dichloropropane	<1	0.627	0.604	3.7%		-

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion Method: SW-846 Mth. 8060 / 8240

50 / 8240

Analyst: Date Analyzed: Rob Wilson

Instrument:

HP 5972 GC/MS - H

Date Reported:

05/02/95 05/03/95

Matrix:

Water

Spike lot No.:

V1,119,5

Spike level:

50 ug/L

Instrument Batch:

H02MAY95

Page 2 of 2

					MIN	MAX
Compound		AvgRRF	CCRRF	%D	BRF	%D
Dibromochloromethane	<1	0.444	0.419	5.6%		
Chlorobenzene	<1	1.045	1.020	2.4%	0.3	
1,1,1,2-Tetrachioroethane	<1	0.391	0.383	2.0%	0.3	1
Ethylbenzene	<1	1.826	1.842	-0.9%		25
p&m-Xylene	<2	0.703	0.740	-5.3%		
o-Xylene	<1	0.703	0.730	-3.8%		Ì
Styrene	<1	1.231	1.277	-3.7%		1
Bromoform	<1	0.370	0.339	8.4%	0.25	
Isopropylbenzene	<1	2.390	0.710	70.3%		
Bromobenzene	<1	0.734	0.696	5.2%		
1,1,2,2-Tetrachloroethane	<1	0.758	0.672	11.3%		
1,2,3-Trichloropropane	<1	0.670	0.588	12.2%		
n-Propylbenzene	<1	3.287	3.288	-0.0%		
2-Chlorotoluene	<1	2.001	1.993	0.4%		
4-Chlorotoluene	<1	2.439	2.587	-6.1%		
1,3,5-Trimethylbenzene	<1	2.115	2.339	-10.6%		
tert-Butylbenzene	<1	2.332	2.476	-6.2%		
1,2,4-Trimethylbenzene	<1	1.193	2.129	-78.5%		
sec-Butylbenzene	<1	2.997	3.023	-0.9%		
1,3-Dichlorobenzene	<1	1.294	1.270	1.9%		
4-isopropyitoluene	<1	2.330	2.472	-6.1%		
1,4-Dichlorobenzene	<1	1.414	1.399	1.1%		
1,2-Dichlorobenzene	<1	1.299	1.320	-1.6%		
n-Butylbenzene	<1	2.339	2.860	-22.3%		
1,2-Dibromo-3-chloropropane	<1	0.135	0.119	11.9%		
1,2,4-Trichlorobenzene	<1	0.541	0.823	-52.1%		
Hexachlorobutadiene	<1	0.530	0.576	-8.7%		
Naphthalene	<1	0.741	1.073	-44.8%		
1,2,3-Trichlorobenzene	<1	0.443	0.716	-61.6%		
Dibromofluoromethane		0.636	0.613	3.6%		
Toluene-d8		1.208	1.174	2.8%		
4-Bromofluorobenzene		0.683	0.710	-4.0%	+	

Comments:

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: CT & E, Ludingtion Method: SW-846 Mth. 8060 / 8240 Instrument:

HP 5972 GC/MS - H

Analyst:

Rob Wilson

Date Analyzed:

05/02/95

Date Reported:

05/03/95

Instrument Batch:

H02MAY95

		% RELATIVE
m/e	ION ABUNDANCE CRITERIA	ABUNDANCE
50	15.0-40.0% of mass 95	19.9
75	30.0-60.0% of mass 95	45.9
95	Base peak, 100% relative abundance	100
96	5.0-9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0
174	Greater than 50.0% of mass 95	74.9
175	5.0-9.0% of mass 174	7
176	Greater than 95.0%, but less than 101.0% of mass 174	97.9
177	5.0-9.0% of mass 176	6.5

DAMES & MOORE
13255 West Bluemound Road, Suite 202 Brookfield, Wisconsin 53005

Lab Anatroh	
Chain of Custody Seal ##	

	\ /	
Tumarou	ınd Time	

	Rush (preapproved by Lab)	
∇	Normal	

(414)7	782-72	81 FA	X: (414) 34	17-0	288		; 				<i>(</i>		·	
PROJECT NAME: PROJECT #: 07724-0/2 Sond Rosults To: PROJECT MANAGER: Joff Danko BILL TO: D&M				SHIPPI Method Content	SHIPPING DETAILS: Method of Shipment Contents Temperature C Comments			2000 Sept 1 2000 S						
LAB USE ONLY	DATE	SAMPLE TIME	CONTAINERS	No.	SAMPLE ID		SAMPLE TYPE		ANALY	SIS REC	/ QUESTE	_/ ED /	REMARKS	/PRESERVATIVES
\$519 8520	4/20/93		40m/250ml	4/1	AFTC-1/April	95 195	wtr	ر د	メン	X X			HCI J.	420,
8521 8522				3/1	AFTC-25/Auch	193 93		7	X X	X X				*
8523 8524				3/1 4 1	AFTC-28/April	95 193		× ×	メン	X				***************************************
8525 8526	1		V	3 ₁	AFT - 30/April	95 5		×	メン	X				<u> </u>
SAMPLER:	USTOD ISKRATUR		DATE Solgs	СОМІ	Confined	2c	subtotal said-typiall Wals for NOX resuffs	and	gc vzc	resul; For	ls f	ist.	Follow.	Ilney_
RELINQUISH	ED BY:	SGNATURE	DATE/TIM		ECEIVED BY: (SIGNATUR	REJ	RELINQUISHED BY	VVOC 1: ISIGNAT	TURE) DA	TE/TIME	RECE	VED BY:	SIGNATURE)	-4/24/42
RELINQUISH	ED BY: 4	I ISIGNATURE	DATE/TIM	1E R	ECEIVED BY: SAGNATUR	7 <i>E</i>)	RELINQUISHED BY	SKGNAT	<i>URE)</i> DA	TE/TIME	RECEIVEI BY: (SIG)	D FOR LABO VATURE) M		DATE/TIME

	id Waste 🛘 Haz. Waste 🗀		MONITORING WELL CONSTRUCTION
	& Repair Undergrou		Form 4400-113A Rev. 4-90 Well Name
Facility/Project Name	Local Grid Location of Wo		AFTC-27
Ansul Fire Technology Center Facility License, Permit or Monitoring Number	Grid Origin Location	t. 🗆 W.	Wis: Unique Well Number DNR Well Number
	Lat. 0 ' "	Long. O ' " or	7
Type of Well Water Table Observation Well 211			Date Well Installed
Piezometer □12	St. Plane Section Location of Waste	/Source	04/19/95
Distance Well Is From Waste/Source Boundary	NW NF	13 = 31 ·· - 27 □E:	Well Installed By: (Person's Name and Firm)
ft.	Location of Well Relative	13, T. 31 N, R. 27 ⊠ W.	Gary Wellner
Is Well A Point of Enforcement Std. Application?	u Upgradient	s Sidegradient	
⊠ Yes ☐ No	d 🛛 Downgradient	n 🛘 Not Known	Midwest Engineering Ser
A. Protective pipe, top elevation 613.23	ît. MSL	1. Cap and lock	
B. Well casing, top elevation 612.95	ft. MSL	2. Protective co	= =
C. Land surface elevation 613.2	}]	b. Length:	ft.
D. Surface seal, bottom 611.2 ft. MSL or	2.0 n.	c. Material:	Steel ⊠ 0 4Other □
12. USC classification of soil near screen:		d. Additional	protection? ⊠ Yes □ No
GP GM GC GW SW	SP 🗆	If yes, des	cribe: Geocap & Keyed lock
SM SC ML MH CL C	Сн 🗆		Bentonite □ 30
Bedrock □		3. Surface seal:	Concrete ⊠ 01
13. Sieve analysis attached?	√ 0		Other 🗆 🔤
14. Drilling method used: Rotary \(\sigma \)	io 🛞	4. Material betw	een well casing and protective pipe:
Hollow Stem Auger			Bentonite 🛛 30
Other 🗆	22 		Annular space seal 🔲 📖
	🕷		Other 🗆 🚟
15. Drilling fluid used: Water 02 Air 0	1 100	5. Annular spac	
Drilling Mud 03 None 09	′°		al mud weight Bentonite-sand slurry 35
16. Drilling additives used? Yes	No		al mud weight Bentonite slurry 3 1
		d% Be	ntonite Bentonite-cement grout \Box 50 Ft ³ volume added for any of the above
Describe	I	f. How insta	
17. Source of water (attach analysis):	I ⊗		Tremie pumped 0 2
			Gravity ⊠ 08
	==	6. Bentonite sea	l: a. Bentonite granules ⊠ 33
E. Bentonite seal, top 612.2 ft. MSL or	_1.0 ft.	b. □1/4 in.	□3/8 in. □1/2 in. Bentonite pellets □ 3.2
•		KXI /	Other 🗆 📖
F. Fine sand, top			terial: Manufacturer, product name and mesh size
(10.7	3.5		Badger Mining Sand Fine
G. Filter pack, top 610.7 ft. MSL or	2.5 ft.	b. Volume ac	
H. Screen joint, top 610.2 ft. MSL or	30 0		aterial: Manufacturer, product name and mesh size Red Flint #30
H. Screen joint, top 010.2 ft. MSL or		a b. Volume ad	£ £ 1
I. Well bottom	13.0 %	9. Well casing:	Flush threaded PVC schedule 40 🛛 23
1. Well bottom It. Wist of		7. Well cashing.	Flush threaded PVC schedule 80 \square 24
J. Filter pack, bottom 600.2 ft. MSL or	13.0 ft.	\	Other 🗆
	VIII	10. Screen mater	ial:PVC
K. Borehole, bottom 600.2 ft. MSL or	13.0 ft.	a. Screen Ty	pe: Factory cut ⊠ 11
			Continuous slot 🗆 0 1
L. Borehole, diameter 8 1/4 in.	V////	<u> </u>	Other 🗆 🔤
2.25		b. Manufact	urer <u>Diedrich</u> 0.010 in.
M. O.D. well casing 2.25 in.		c. Slot size:	10.0
2 00		d. Slotted le	
N. I.D. well casing 2.00 in.		II. Backilli mate	rial (below filter pack): None 🗵 1.4
I haraby cartify that the information the	a form in true and	reat to the heat of my la	
I hereby certify that the information on the Signature 1 / 1	Tr'		
0 1 10 1	DAMES	& MOORE	Tel: (414) 782-7281

250 East Wisconsin Ave. Suite 1500 Milwaukee, WI 53202 Fax: (414) 782-72
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.

	Route to: Solid W	aste 🗌 Haz. Waste [☐ Wastewater □]	MONITORING WE		
		epair 🗆 Undergro			Form 4400-113A	R	Rev. 4-90
Facility/Project Name		al Grid Location of V			Vell Name		
Ansul Fire Technology C	enter			ft. E. ft. W.	AFT(
Facility License, Permit or Monitoring	Number Grid	Origin Location			Vis. Unique Well Numbe	F DNR Well	Number
	Lat.	0 ' "	Longo			<u> </u>	
Type of Well Water Table Observation	on Well ⊠II St. I		_ ft. N,	ft. E.	Date Well Installed		
Piezometer	□12 Sect	ion Location of Was	te/Source		04/19	9/95	
Distance Well Is From Waste/Source E	Boundary NIX	/ _{1/4 of NE 1/4 of Se}	13 - 31 -	27 □ E. V	Vell Installed By: (Perso	n's Name and	Firm)
	ft.	1/4 of 1/1/2 1/4 of Se	c. 13, T. 31 N,	R. <u>27</u> ⊠ W.	Gary We	ellner	
Is Well A Point of Enforcement Std. A		Upgradient	s Sidegrad	-			
⊠ Yes	3	☐ Downgradient	_		Midwest Engir	neering Ser	
A. Protective pipe, top elevation	613.06 ft. M	SI		Cap and lock?		⊠ Yes	□ No
• • •		- 11	_	Protective cove	r pipe:		
B. Well casing, top elevation	612.70 ft. M	SL '	- ' >	a. Inside diame	• •	· .	in.
C. Land surface elevation	613.1 ft. M	SL \		b. Length:			ft.
			A STATE OF	c. Material:		Steel	⊠ 04
D. Surface seal, bottom 611.1	ft. MSL or	n. (%%)	*			Other	
12. USC classification of soil near sci	reen:		1000	d. Additional p	rotection?	. ⊠ Yes	□ No
GP□ GM□ GC□ GW				If yes, descr	ibe: Geocap & Ke	yed lock	
SM SC ML MH	□ CL□ CH		\bowtie \ \.	Surface seal:		Bentonite	□ 30
Bedrock □		- - ⊗		Surface sear:		Concrete	⊠ 01
13. Sieve analysis attached?	es □ No	1 🛭				Other	
14. Drilling method used:	Rotary □50	- - ⊗	\ 4.	Material between	en well casing and protec	ctive pipe:	
•	m Auger □41	- - ⊗				Bentonite	⊠ 30
	Other		▩		Аппи	lar space seal	
		- - ⊗				Other	
15. Drilling fluid used: Water 0:	2 Air □01		₿ >>5.	. Annular space	seal: a. Granı	ılar Bentonite	⊠ 33
Drilling Mud 0:	3 None □99	- ⊗			I mud weight Bentonii		
· ·		- - ⊗	PAN .	-		ntonite slurry	
16. Drilling additives used?	es □ No	- - ⊗				-cement grout	
1		- ⊗		. 1/2 bag_r	t 3 volume added for an		
Describe		 	₩ f	. How install		Tremie	10
17. Source of water (attach analysis):		- - ⊗			Tr	emie pumped	□ 02
		- - ⊗				Gravity	⊠ 08
		— ⊗	6.	. Bentonite seal:	a Bento	onite granules	
E. Bentonite seal, top 612.1 f	ft. MSL or1.0	0 . 🔘	X / "		□3/8 in. □1/2 in. Ber	_	
E. Bentonite seat, top	t. MSE of	🛚					
F. Fine sand, top 611.1 f	ft. MSL or2.	0 ". 🔪 🛭	□		rial: Manufacturer, pro-		
r. rine said, top	t. Mac or	- " \ \			adger Mining Sand I		*****
G Filtrands to 610.6	ft. MSL or2.	5 a.	X /	b. Volume add	1/2 1	ſt ³	
G. Filter pack, top 010.0	it. MSL or				terial: Manufacturer, pro	• •	d mech size
y s 610.1 A	ft. MSL or3.	0 a. 👊		. Their pack ma	Red Flint #30	Judet name and	
H. Screen joint, top 610.1	t. MSL or	<u> </u>	_	8	25 5	ft ³	
600.1	ft. MSL or13.	o . 🏻 🕍	≣/ .	b. Volume add			
I. Well bottom	it. MSL or	<u> </u>		. Well casing:	Flush threaded PV		□ 23
600.1	13	o .			Flush threaded PVO		0000000
J. Filter pack, bottom 000.1	ft. MSL or13.	<u>∨</u> n			ı. PVC	Other	
	12	n . //	~10 .	. Screen materia	•• ———		
K. Borehole, bottom 000.1	ft. MSL or13.	U ft.		a. Screen Typ		Factory cut	
0 1/4			<i>/</i> X		C	ontinuous slot	600000
L. Borehole, diameter 8 1/4	in.	*22			er Diedrich		
2.25			\	b. Manufactur	er Diedrich		.010 in.
M. O.D. well casing 2.25	in.		\	c. Slot size:		<u>U</u>	10.0 ft.
0.00			\	d. Slotted leng			
N. I.D. well casing 2.00	in.		`11.	. Backfill materi	al (below filter pack):		
						Other	
I hereby certify that the inform	nation on this fo		orrect to the be	est of my kno	wledge.		
Signature)) 10	Firm DAMES	& MOORE			Tel: (414)	782-7281

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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.

Department of Newsel Beauties	Waste 🗌 Haz. Waste 🗍 Wastew		MONITORING WELL CONSTRUCTION	
	Repair Underground Tanks cal Grid Location of Well	Other .	Form 4400-113A Rev. 4-90	_
Ansul Fire Technology Center	ft. S	t. □ E.	AFTC-29	
Facility License, Permit or Monitoring Number Gr	id Origin Location		Wis. Unique Well Number DNR Well Number	<u></u>
	t Long	<u> </u>		
Type of Well Water Table Observation Well St.	Plane ft. N.	ft. E.	Date Well Installed	
Piezometer 12 Se	ction Location of Waste/Source	ПЕ	04/19/95 Well Installed By: (Person's Name and Firm)	_
μ_{N}	W _{1/4} of NE 1/4 of Sec. 13, T.	<u> </u>	Gary Wellner	
LO	cation of Well Relative to Waste/ Upgradient s Sic	Source legradient		
	☑ Downgradient n □ No	t Known	Midwest Engineering Ser	
A. Protective pipe, top elevation ft. !	MSL	1. Cap and lock		
B. Well casing, top elevation 615.01 ft. 1	MSL TO THE	2. Protective con a. Inside dian	neter: 4.0 in	n
C. Land surface elevation 612.4 ft. 1	MSL	b. Length:	<u>5.0</u> n	it.
D. Surface seal, bottom 610.4 ft. MSL or 2.0		c. Material:	Steel ⊠ 0.4Other □	
12. USC classification of soil near screen:		d. Additional		•
)		If yes, des	cribe: Geocap & Keyed lock	
SM SC ML MH CL C		3. Surface seal:	Bentonite 🗆 30	
Bedrock ☐ 13. Sieve analysis attached? ☐ Yes ☐ No). Surface scar.	Concrete 🖾 0 1	÷
• • • • • • • • • • • • • • • • • • • •		A Material hate	veen well casing and protective pipe:	:
14. Drilling method used: Rotary ☐ 5 0 Hollow Stem Auger ☐ 4 1		4. Material betw	Bentonite 🗵 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 slurry 🔲 35	
16. Drilling additives used? ☐ Yes ☐ No		cLbs/g d% Be	al mud weight Bentonite slurry \square 3 1 ntonite Bentonite-cement grout \square 5 0	
			Ft ³ volume added for any of the above	
Describe	-	f. How insta		
17. Source of water (attach analysis):			Tremie pumped 02	
	🐰 🕷 🕷	4.5	Gravity ⊠ 08	
E. Bentonite seal, top 611.4 ft. MSL or 1	.0	6. Bentonite sea	1: a. Bentonite granules ☐ 3 3 ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2	
E. bentonite sear, top	··· \	c	Other 🗆 🔤	
F. Fine sand, top	<u>.0</u> ft. \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		terial: Manufacturer, product name and mesh siz	ze
(00.0			Badger Mining Sand Fine	
G. Filter pack, top 609.9 ft. MSL or 2	. <u>.5</u> ft.	b. Volume ad		•
H. Screen joint, top 609.4 ft. MSL or 3			aterial: Manufacturer, product name and mesh si Red Flint #30	ıze :
H. Screen joint, top It. MSL or	·····	b. Volume ad	2.5 hogo 2	•
I. Well bottom <u>599.4</u> ft. MSL or <u>13</u>	.0 n.	9. Well casing:	Flush threaded PVC schedule 40 23	
			Flush threaded PVC schedule 80	e.
J. Filter pack, bottom 599.4 ft. MSL or 13	₁ v		Other DVC	
K. Borehole, bottom 599.4 ft. MSL or 13	0 a	10. Screen mater	IQI 	į
K. Borehole, bottom ft. MSL or 13	··· / ////	a. Screen Ty	Continuous slot 01	
L. Borehole, diameter 8 1/4 in.			Other 🗆 💴	,
	\	b. Manufact	urer Diedrich	
M. O.D. well casing 2.25 in.	\	c. Slot size:	$ \begin{array}{c} 0.010 \\ \hline 10.0 \end{array} $ in the second sec	n.
N. I.D. well casing 2.00 in.		d. Slotted le	rial (below filter pack): None 14	
N. I.D. well easing 2.00 in.			Other 🗆	į
I hereby certify that the information on this f	orm is true and correct to	the best of my kr		_
Signature) /	Firm DAMES & MOC		Tel: (414) 782-728	1
(b) 1. f (c) 1 sham	250 East Wisconsin A		waukee, WI 53202 Fax: (414) 782-7289	9

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.

Description and of Measured Description	e □ Haz. Waste □ Wast		MONITORING WELL CONSTRUCTION
	ir Underground Tan	ks Other	Form 4400-113A Rev. 4-90
	Grid Location of Well	ΠE	Well Name
Ansul Fire Technology Center	t. □ N. t. □ S	n. 🗆 E.	AFTC-30
Lat	rigin Location O Long.	o ' "	Wis. Unique Well Number DNR Well Number
Type of Well Water Table Observation Well 211 St. Plan	ie ft. N.	∩. E.	Date Well Installed
Piezometer 12 Section	te ft. N, Location of Waste/Source	e <u>-</u>	04/19/95
Distance Well Is From Waste/Source Boundary	of NE 1/4 of Sec. 13, 7	. 31 N. D. 27 🖫 E.	Well Installed By: (Person's Name and Firm)
I ocatio	n of Well Relative to Was	te/Source	Gary Wellner
		Sidegradient	Midwest Engineering Ser
	Downgradient n	Not Known 1. Cap and lock?	
A. Protective pipe, top elevation 612.87 ft. MSL	11 11-	2. Protective cov	
B. Well casing, top elevation 612.41 ft. MSL		a. Inside diam	• •
C. Land surface elevation 612.9 ft. MSL		b. Length:	ft. Steel 🖾 0 4
D. Surface seal, bottom 610.9 ft. MSL or 2.0 ft		1500	Other 🗆 🚟
12. USC classification of soil near screen:		d. Additional	protection? \overline Yes \subseteq No cribe: Geocap & Keyed lock
GP GM GC GW SW SP SM SC ML MH CL CH		. \	Bentonite 30
Bedrock □		3. Surface seal:	Concrete 🛭 0 1
13. Sieve analysis attached? ☐ Yes ☐ No		\	Other 🗆 🔤
14. Drilling method used: Rotary 50	l 🛭 🗎	4. Material betw	een well casing and protective pipe:
Hollow Stem Auger □ 4 1	I 🛭 🖺		Bentonite ⊠ 30 Annular space seal □ <u></u>
Other Limit	1 🛭 🗎		Annular space seal
15. Drilling fluid used: Water □02 Air □01	I 🛮 🖹 🔊	<u> </u>	
Drilling Mud □03 None □99		5. Annular space	a. Granular Bentonite 🛭 3 3 al mud weight . Bentonite-sand slurry 🔲 3 5
-	I 🐰 🕷		al mud weight Bentonite-said storry 3 3
16. Drilling additives used? ☐ Yes ☐ No	1 🛭 🖺	d% Be	•
	1 · 🛭 🖺		Ft ³ volume added for any of the above
Describe	1 🛭 🗎	f. How insta	
17. Source of water (attach analysis):	l		Tremie pumped 🛭 02
	l 🛭 🗎		Gravity 🖾 08
		6. Bentonite seal	· ·
E. Bentonite seal, top611.9 ft. MSL or1.0	ft.	/	□ 3/8 in. □ 1/2 in. Bentonite pellets □ 3 2 Other □
F. Fine sand, top 610.9 ft. MSL or 2.0	ft.	/ [terial: Manufacturer, product name and mesh size Badger Mining Sand Fine
G. Filter pack, top 610.4 ft. MSL or 2.5	ft.	b. Volume ad	1/2 1
o. Their pack, top			aterial: Manufacturer, product name and mesh size
H. Screen joint, top 609.9 ft. MSL or 3.0	ı	a	Red Flint #30
•		b. Volume ad	ded 5 bags ft ³
I. Well bottom	n. \	9. Well casing:	Flush threaded PVC schedule 40 🛛 23
			Flush threaded PVC schedule 80 \ \ 2 4
J. Filter pack, bottom599.9 ft. MSL or13.0	ñ		al: PVC
K. Borehole, bottom 599.9 ft. MSL or 13.0	fr > /////	10. Screen materi	
it. Mar. of the interest of th	""	a. Scientry	Continuous slot
L. Borehole, diameter 8 1/4 in.			Other 🗆 📖
	\	b. Manufactu	prer Diedrich
M. O.D. well casing 2.25 in.	`	c. Slot size:	$\frac{0.010}{10.0}$ in.
2.00		d. Slotted ler	_
N. I.D. well casing 2.00 in.		11. Backfill mater	rial (below filter pack): None 🖾 1 4
T1 1 20 1	,		Other 🗆
I hereby certify that the information on this form	7.		owledge.
0)// 70)//	DAMES & MC	ORE 1 Ave. Suite 1500 Mile	Tel: (414) 782-7281 waukee. WI 53202 Fax: (414) 782-7289

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.

State of Wisconsin	Route to: Solid V	Vaste 🗌 H	az. Waste 🗆	Wastewater i		MONITORING WELL		
Department of Natural Resources	Env. Response &				Other 🗆	Form 4400-113A		Rev. 4-90
Facility/Project Name	1	cal Grid Lo	cation of We	41	n. □ E.	Well Name		
Ansul Fire Technology Facility License, Permit or Monitorin		d Origin L	ts		t. 🗆 W	AFTC-3 Wis: Unique Well Number	SI DNR WAII	Mumbaga
Tuoning Encember, Forming of Monitoria	_	0		ongo	' " 	11 is, chique ((chi i tulabe)	Divic (reil	***************************************
Type of Well Water Table Observat	ion Well [2] II			•		Date Well Installed		
Piezometer	151.	Plane	on of Waste	t. N,	ft. E.	04/19/9	15	
Distance Well Is From Waste/Source					. 22 □ E.	Well Installed By: (Person's	Name and	Firm)
	ft. [NV	V1/4 of NE	1/4 of Sec.	13, T. 31 N	I, R. <u>∠/</u> ⊠ W.	Gary Wellr		,
Is Well A Point of Enforcement Std.	LOC	cation of W Upgra		o Waste/Sources Sidegra		Oaty Well	101	
⊠ Yes				n Not Kno		Midwest Enginee	ring Ser	
A. Protective pipe, top elevation	613.59 ft. N	1SL			. Cap and lock?		⊠ Yes	□ No
B. Well casing, top elevation	613.22 ft. N		 	\bigcirc 2	2. Protective cov	* -		
	613.6 ft. N				a. Inside diam b. Length:	eter:	_	in. ft.
C. Land surface elevation		_	المسيو	· Committee	c. Material:		Steel	⊠ 04
D. Surface seal, bottom 611.6	ft. MSL or	_ ft.		1000			Other	
12. USC classification of soil near s	creen:	, S.	(***\begin{align*}	A Section	d. Additional		⊠ Yes	□ No
	V□ SW□ SP				If yes, desc	ribe: Geocap & Keye	a lock	
SM SC ML MI Bedrock M	H□ CL□ CH	<u> </u>		$\forall \setminus \setminus_3$	3. Surface seal:		Bentonite	□ 30
13. Sieve analysis attached?	Yes □ No			\ \ `			Concrete	5000000
ł -	•	1		፟ \.			Other	□ 222
14. Drilling method used:	Rotary 50			₩ 4	. Material between	een well casing and protectiv		⊠ 10
	tem Auger					Annulae	Bentonite space seal	*****
		- 1		ቖ		Amua	Other	4000000
15. Drilling fluid used: Water O	02 Air □01			*				
Drilling Mud □ 0					5. Annular space	seal: a. Granular al mud weightBentonite-s		
_		1				al mud weight Bentonne-s		
16. Drilling additives used?	Yes □ No ·			DOM.	d% Ber		-	
				₩ .	e. 1/2 bag	Ft ³ volume added for any or		
Describe				XXXI	f. How instal		Tremie	
17. Source of water (attach analysis)):	1				Trem	ie pumped	□ 02
<u> </u>							Gravity	⊠ 08
(10.6				∅ ,6	5. Bentonite seal			
E. Bentonite seal, top 612.6	ft. MSL or1.	. <u>U</u> ft.				□ 3/8 in. □ 1/2 in. Bentor	-	4000000
611.6		^ .	\	`		- 1-1- Manager - 1-1-		
F. Fine sand, top 011.0	ft. MSL or2.	·U ft.		∅	D	erial: Manufacturer, produc adger Mining Sand Fin		mesn size
611.1	ft. MSL or2	5 6	/ 13	% /		1/2 1		
G. Filter pack, top 011.1	II. MSL or	<u></u> It.			b. Volume add	aterial: Manufacturer, produ	ot nama an	d mach cize
H. Screen joint, top 610.6	ft. MSL or3.	0		ı /°	-	Red Flint #30	ct name and	ı mesn sıze
H. Screen joint, top	II. MISL OF	11.	─ ↓ -		b. Volume add	2.1		
I. Well bottom 600.6	ft. MSL or13.	.0 6.			9. Well casing:	Flush threaded PVC so	hedule 40	⊠ 23
i. Well bottom	it. MSE of		✓ 【長		. Well casing.	Flush threaded PVC so		
J. Filter pack, bottom600.6	ft. MSL or13.	.0 ft.				7.13507 1.111 0.130 0 7 7 0 50		2000000
· · · · · · · · · · · · · · · · · · ·			77777	5.34 \). Screen materi	al: PVC		
K. Borehole, bottom 626.6	ft. MSL or13.	<u>.0</u> ft. <			a. Screen Typ		actory cut	11
					•		inuous slot	
L. Borehole, diameter 8 1/4	in.		V////	28(Other	
					b. Manufactu	rer <u>Diedrich</u>	— <u> </u>	010
M. O.D. well casing 2.25	in.			\	c. Slot size:		<u>0</u>	0.010 in.
2.00				/	d. Slotted len	=		10.0 ft.
N. I.D. well casing $\underline{2.00}$	in.			`11	I. Backfill mater	ial (below filter pack):		⊠ 14
			 -				Other	
I hereby certify that the information	mation on this fo	TC:			est of my kn	owledge.		
0)11100				& MOORE	Suita 1500 NAS		Tel: (414)	

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.

				aste 🗆 Wastewater 🗆 erground Tanks 🗀 O						
Facility/Project Name	Project Name County					Name				
Ansul Fire Technology Center			•	Marinette	AFTC-27					
Facility License, Permit or Monitoring Number		Co	unty Code 38	Wis. Unique Well A	lumber	DNR Wel				
1. Can this well be purged dry?		Yes [⊠ No	11. Depth to Water	Befor	re Development	After Development			
2. Well development method: surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed, and pumped compressed air bailed only pumped only pumped slowly other 3. Time spent developing well 4. Depth of well (from top of well casing) 5. Inside diameter of well		4 1 6 1 4 2 6 2 7 0 2 0 1 0 5 1 5 0 13.0 2.00		(from top of well casing) Date Time 12. Sediment in well bottom 13. Water clarity	Clear Turb (Desc	ocolate brown, idy, stagnant	4.06 ft. 04/20/95 9:30 ☐ a.m. 9:30 ☐ p.m. inches Clear ☐ 20 Turbid ☐ 25 (Describe)			
6. Volume of water in filter pack and well casing) in.) gal.							
 7. Volume of water removed from well 8. Volume of water added (if any) 9. Source of water added 		85.0	gal.	Fill in if drilling flu 14. Total suspended solids 15. COD		used and well is at a mg/l mg/l	mg/l			
10. Analysis performed on water added? (If yes, attach results)		Yes i	□ No	I						
Well developed by: Person's Name and Firm Name: Kirk L. Kapfhammer Firm: Dames & Moore				Signature:	Jek LK	we information is true	frammer			

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

				☐ Wastewater ☐ und Tanks ☐ Oth	ner 🗆				
Facility/Project Name	 Co	unty			Well Name				
Ansul Fire Technology Center		•	Mar	inette	AFTC-28				
Facility License, Permit or Monitoring Number	Co	unty Code 38		is, Unique Well No	imber	DNR Well			
1. Can this well be purged dry?	Yes ⊠	No No		. Depth to Water	Before	Development	After Develo	pment	
2. Well development method: surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed, and pumped compressed air bailed only pumped only pumped slowly other 3. Time spent developing well 4. Depth of well (from top of well casing) 5. Inside diameter of well	4 1 6 1 4 2 6 2 7 0 2 0 1 0 5 1 5 0 120 13.0 2.00		12	(from top of well casing) Date Time Sediment in well bottom Water clarity	Silty wate black HC o	© 15 be) , oily r, brown c, strong odor and	04/20	□ a.m. ⊠ p.m. inches	
6. Volume of water in filter pack and well casing	80.0	gal.			prod	uct			
7. Volume of water removed from well 8. Volume of water added (if any) 9. Source of water added	80.0	gal.	14	Il in if drilling fluid Total suspended solids COD	is were us	ed and well is at s mg/l mg/l	solid waste facilit	mg/l mg/l	
10. Analysis performed on water added? (If yes, attach results) 16. Additional comments on development:	Yes [No						·	
Well developed by: Person's Name and Firm			l l of	hereby certify that if my knowledge.	the above	information is tru	e and correct to t	he best	
Name: Kirk L. Kapfhammer			Si	ignature:	LK	1. Deg	Shammer		
Firm: Dames & Moore	<u> </u>				1ES & 1	MOORE Milv	vaukee, WI		

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

					□ Wastewater □ und Tanks □ Oth	ner 🗆				
Facility/Project Name			ınty				Well Name			
Ansul Fire Technology Center	1			Mar	rinette	AFTC-29				
Facility License, Permit or Monitoring Number		Coi	inty Code		is, Unique Well No	ımber	IDNR Wel			
•			38							
1. Can this well be purged dry?		Yes ⊠	l No		. Depth to Water	Before	Development	After Development		
2. Well development method:				1	(from top of	_	6.27 ft.	6.22 ft.		
surged with bailer and bailed		4 1		1	well casing)	a.	0.27 10.	0.22 ft.		
surged with bailer and pumped	⊠	61								
surged with block and bailed		4 2		ı	Date	b.	04/20/95	04/20/95		
surged with block and pumped		62								
surged with block, bailed, and pumped		70		1			⊠ a.m.	□ a.m.		
compressed air		20			Time	c.	8:45 □ p.m.	9:30 ⊠ p.m.		
bailed only		10					•			
pumped only		5 1		12	. Sediment in well		inches	inches		
pumped slowly		5 0			bottom					
other				13	. Water clarity		□ 10 ⊠ 15	Clear ⊠ 20 Turbid □ 25		
3. Time spent developing well		135	min.			(Descri	be)	(Describe)		
4. Depth of well (from top of well casing)		13.0	ft.	İ						
5. Inside diameter of well		2.00	in.							
6. Volume of water in filter pack and well casing		93.0	gal.							
				Fi	ll in if drilling fluid	ds were us	ed and well is at a	solid waste facility:		
7. Volume of water removed from well		93.0	aal	1				1		
7. Volume of water removed from wen		75.0	gai.	14	. Total suspended		mg/l	mg/l		
8. Volume of water added (if any)			gal.		solids		0			
9. Source of water added				15	. COD		mg/l	mg/l		
10. Analysis performed on water added? (If yes, attach results)		Yes [l No							
16. Additional comments on development:										
Well developed by: Person's Name and Firm	_			I I	nereby certify that to my knowledge.	the above	information is tru	e and correct to the best		
				۲		2.4		10		
Name: Kirk L. Kapfhammer				Si	gnature:	ih Z	1 D.J.	thammer		
Firm: Dames & Moore				Pr	int Initials: 🗶	LK	•			
				Fi	rm: DAM	MES & N	MOORE Milv	vaukee, WI		

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

<u> </u>					☐ Wastewater ☐ und Tanks ☐ Oth	ner 🗆				
Facility/Project Name			ounty			Well Name				
Ansul Fire Technology Center		i ·			rinette					
Facility License, Permit or Monitoring Number		C	ounty Code 38		is, Unique Well No	ımber		CTC-30		
1. Can this well be purged dry?		Yes	⊠ No	11	. Depth to Water	Before	Developmen	t After Develo	pment	
2. Well development method:	_	4.1			(from top of well casing)	a.	3.56 ft.	3	.51 ft.	
surged with bailer and bailed		4 1 6 1			6 /					
surged with bailer and pumped surged with block and bailed	⊠	42		1	Date	ь.	04/20/95	04/20	/95	
surged with block and pumped		62			Date	0,	01/20/55	04/20	175	
surged with block, bailed, and pumped		70					_		_	
		20			Time	c.	8:45 □ p.m	0.30	□ a.m. ⊠ p.m.	
compressed air		10		1	Time	C.	0.45 ш р.п	7.30	⊠ p.m.	
bailed only		51		1,2	. Sediment in well		inches	. [inches	
pumped only		50		1'-	bottom		inches		Hiches	
pumped slowly other		3 0		13	. Water clarity	Clear		Clear ⊠ 20		
3. Time spent developing well		7.	5 min.			Turbid (Descri	be)	Turbid 25 (Describe)		
4. Depth of well (from top of well casing)		13.	0 ft.				greenish , sandy,			
5. Inside diameter of well		2.0	0 in.				er smell			
6. Volume of water in filter pack and well casing		90.	O'gal.							
				Fi	ll in if drilling fluid	is were us	sed and well is at	solid waste facility	':	
7. Volume of water removed from well		90.	O gal.	14	. Total suspended		mg/l		mg/l	
8. Volume of water added (if any)			gal.		solids					
9. Source of water added				15	. COD		mg/l		mg/l	
10. Analysis performed on water added? (If yes, attach results) 16. Additional comments on development:		Yes	□ No							
10. Additional comments on development.										
Wall daniela de la Barriera Name de France				- 11 1			:= c		- 1	
Well developed by: Person's Name and Firm				of	my knowledge.	ine above	information is tr	ue and correct to th	ie dest	
Name: Kirk L. Kapfhammer				Si	ignature:	L Z	1. Day	thamm_		
Dames & Masse		***		Pr	rint Initials: <u>K</u>	LK				
Firm: Dames & Moore			 	F	irm: DAM	1ES & 1	MOORE_Mil	waukee, WI		

] Wastewater □ und Tanks □ Oth	ner 🗆 .	· 		
Facility/Project Name			inty				ell Name		
Ansul Fire Technology Center			•		inette	AFTC-31			
Facility License, Permit or Monitoring Number		Cou	inty Code		is. Unique Well No	ımber		l Number	
			38						
1. Can this well be purged dry?	□ Y	′es ⊠	No		. Depth to Water	Bef	ore Development	After Develo	pment
2. Well development method: surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed, and pumped compressed air bailed only pumped only pumped slowly other 3. Time spent developing well 4. Depth of well (from top of well casing) 5. Inside diameter of well 6. Volume of water in filter pack and well casing		41 61 42 62 70 20 10 51 50 2.00 2.00 85.5	ft.	12.	(from top of well casing) Date Time Sediment in well bottom Water clarity	Cle Tu (De	4.06 ft. 04/20/95 8:45 p.m. inches ear 10 rbid 15 scribe) trangish, sandy	04/20, 9:30 Clear	□ a.m. ⊠ p.m. inches
7. Volume of water removed from well	1	100.0	gal.	1	II in if drilling fluid . Total suspended	is wer	e used and well is at mg/l	solid waste facility	: mg/l
8. Volume of water added (if any)			gal.		solids				
9. Source of water added				15	. COD		mg/l		mg/l
10. Analysis performed on water added? (If yes, attach results) 16. Additional comments on development:	□ Y	es E	l No				·····		
Well developed by: Person's Name and Firm				l h of	nereby certify that i my knowledge.	the ab	ove information is tru	e and correct to th	e best
Name: Kirk L. Kapfhammer Firm: Dames & Moore		, • ····			gnature:)./ L	! <u>L. D.</u> K	ghamm_	
Firm: Dames & Moore				1		1ES	& MOORE Mily	waukee, WI	