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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

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

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

LUST# 38-01345

AUGUST 1995

DAMES & MOORE

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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

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[1]

- Benzene ≤ 5.0 micrograms per kilogram (μg/kg)
  Toluene ≤ 1,500 μg/kg
  Ethylbenzene ≤ 2,900 μg/kg
  Total Xylene ≤ 4,100 μg/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 (μg/l) methyl-tertiary-butyl-ether to 35,000 μg/l xylenes. The ground water sample collected from boring AFTC-26 contained PVOC concentrations ranging from 11 μg/l ethylbenzene to 290 μg/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.

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.

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 μg/kg), 1,2,4-trimethylbenzene (7,600 μg/kg), 1,3,5-trimethylbenzene (26,000 μg/kg), toluene (1,200 μg/kg), and xylenes (13,000 μg/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 μg/l in the sample collected from monitoring well AFTC-2B to 9,000 μg/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 μg/l in the sample collected from monitoring well AFTC-28 to 920 μg/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 μg/l in the sample collected from AFTC-2B to 15,000 μg/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 μg/l in the sample collected from monitoring well AFTC-27 to 870 μg/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 μg/l in the ground water sample collected from AFTC-30 to 3,000 μg/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 μg/l in the ground water sample collected from AFTC-2B to 9,300 μg/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 μg/l in the sample collected from AFTC-28 to 2,500 μg/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 Discussion of Laboratory Results

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 μg/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-27, 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:

$$V = \frac{K I}{n_e}$$

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,

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

$$V = \frac{(9 \times 10^{-3} \text{ cm/sec})(0.002)}{0.33} = 5.4 \times 10^{-5} \text{ cm/sec} = 56 \text{ feet/year}$$

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).

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.

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.

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.

8.0 LIMITATIONS

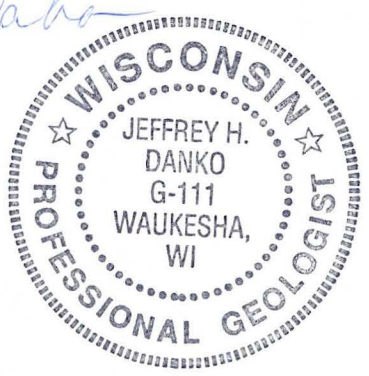
Dames & Moore certifies to the best of its knowledge and belief that the information contained herein is accurate and complete. The site investigation was conducted in accordance with accepted practices for the environmental consulting profession. Information provided by others was accepted as true and 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



Pamela S. Burnett
Managing Principal-In-Charge

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.

Jeffrey H. Danko Hydrogeologist 8/16/95

Signature and Title Date

10.0 REFERENCES CITED

Dames & Moore, 1976; Investigation of hydrology and potential ground-water contamination of bedrock aquifers at the Ansul Company Site, Marinette, Wisconsin, 34 p. and Appendices.

Dames & Moore, 1994, Site Investigation report, Ansul Fire Technology Center, Pierce Avenue, Marinette, Wisconsin, 24 p. and Appendices.

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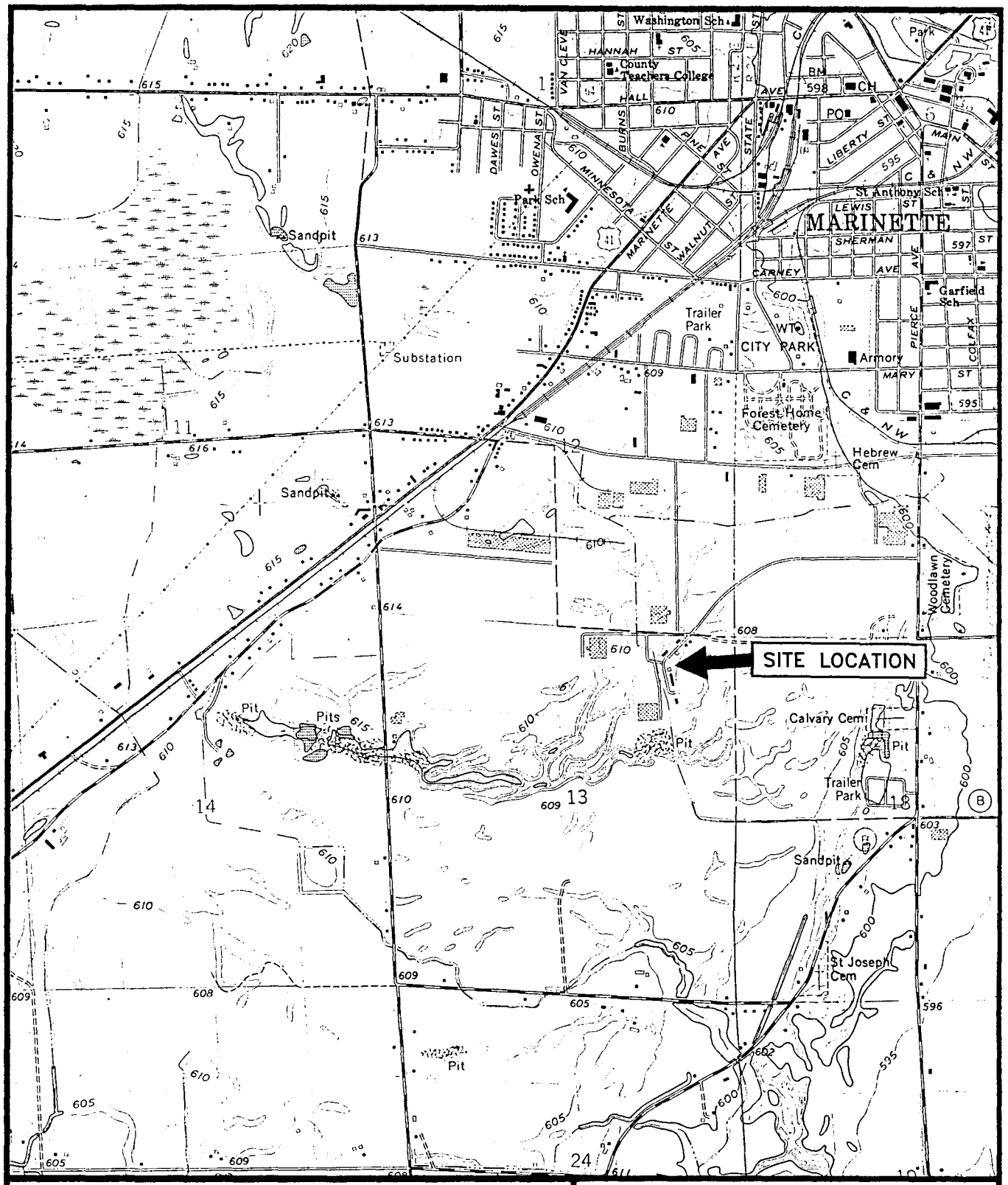
Wisconsin Administrative Code, 1994b, Chapter NR141, Groundwater Quality.

WDNR, Leaking Underground Storage Tank (LUST) and Petroleum and Analytical Quality Assurance Guidance, July 1993; PUBL-SW-130 93REV.



SOURCE: USGS 7.5 Minute Topographic Map, MARINETTE WEST, WISCONSIN Quadrangle, 1976

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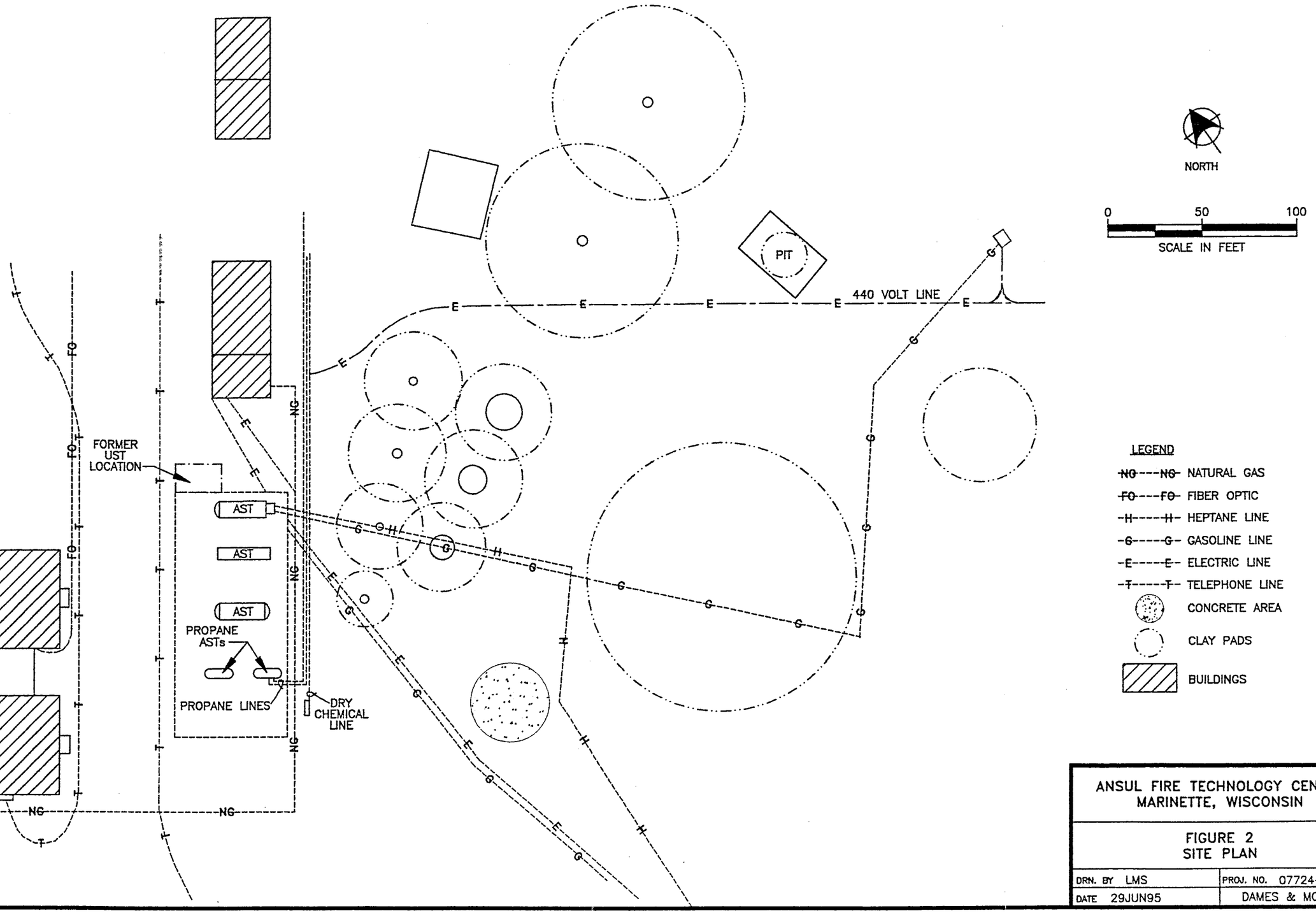
FIGURE 1
SITE LOCATION MAP

DRN. BY LMS	PROJ. NO. 07724
DATE 26JUN95	DAMES & MOORE

FILE: C:\DATA\DWGS\ANSUL\SITELOC.DWG



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MARINETTE, WISCONSIN

FIGURE 2
SITE PLAN

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE

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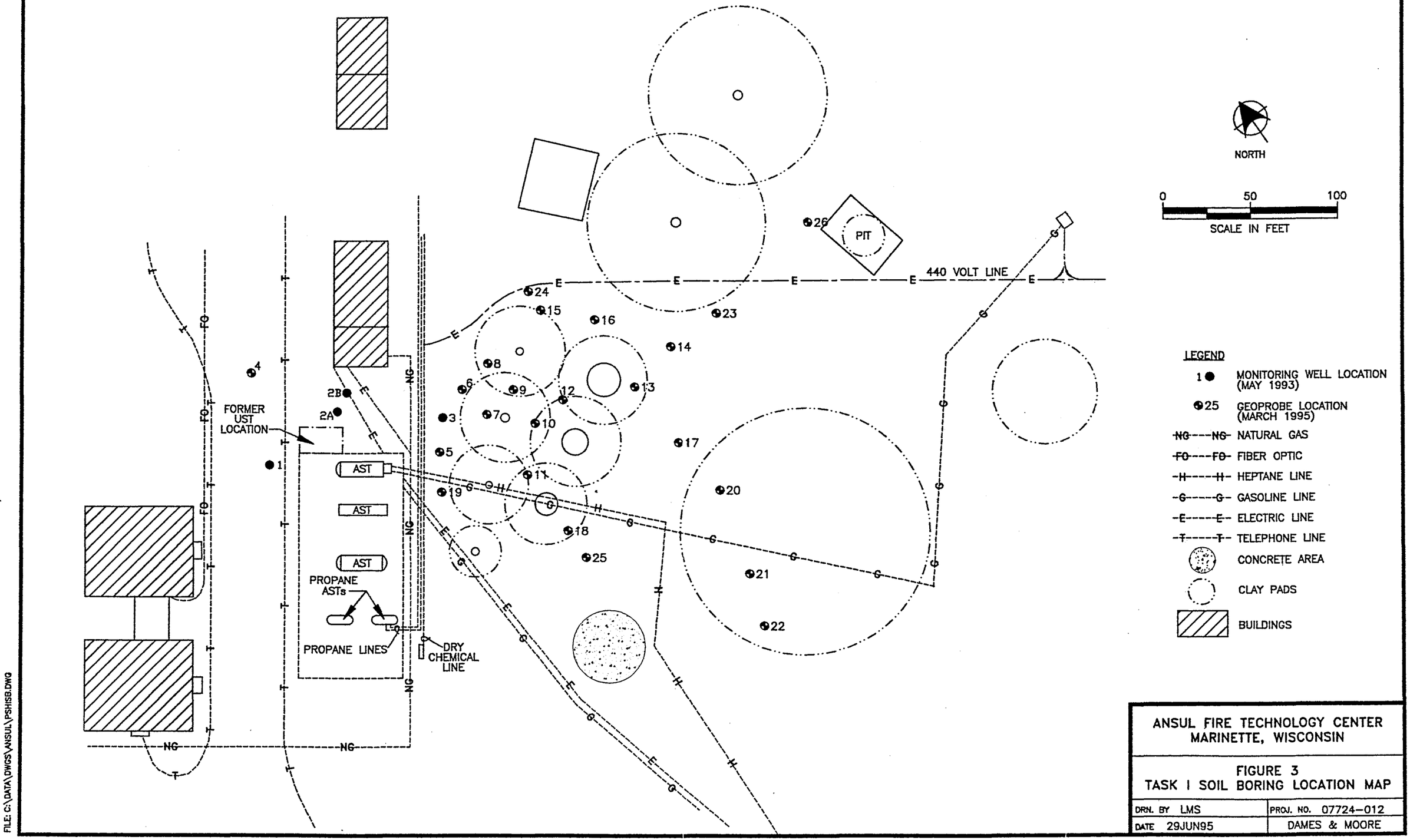

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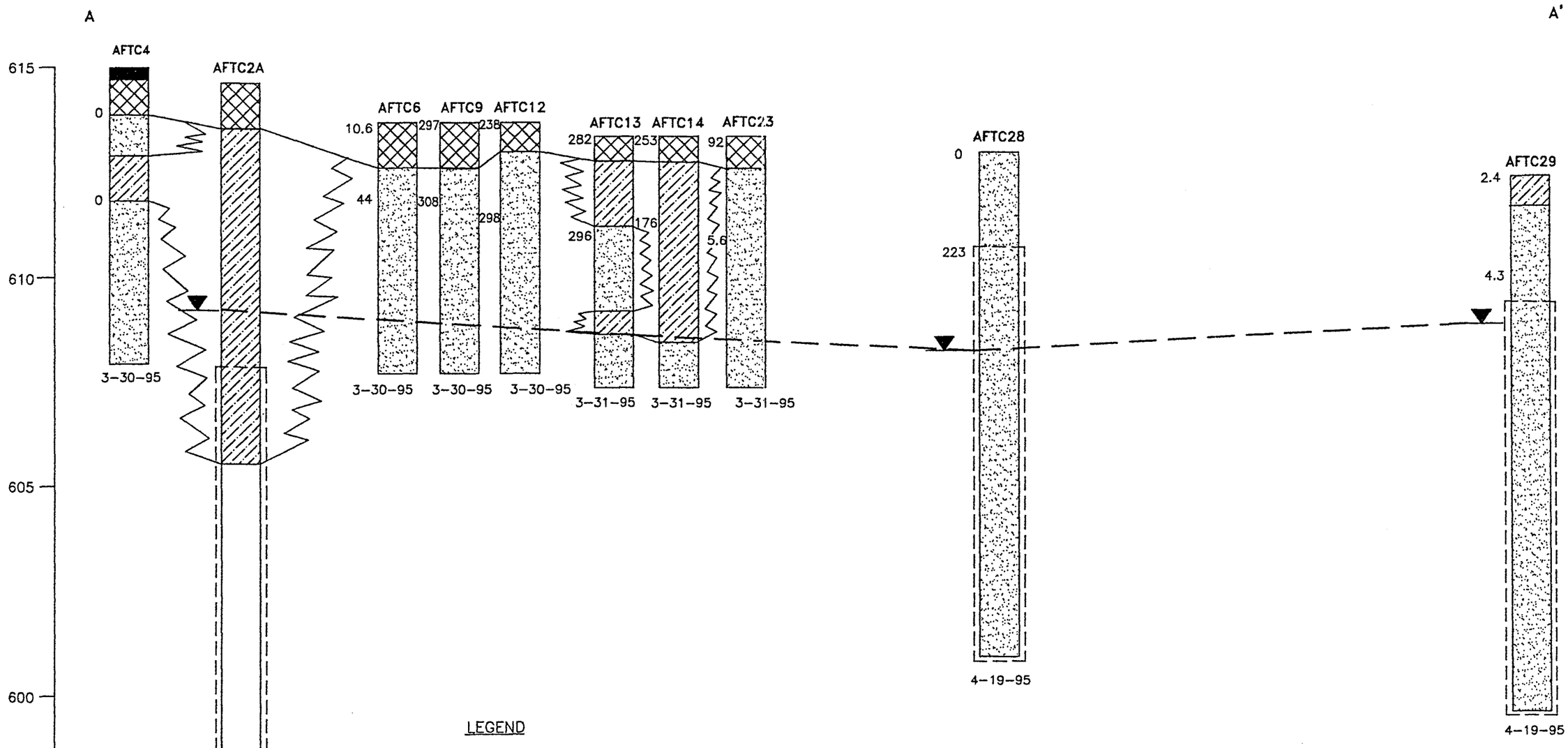
FIGURE 3
TASK I SOIL BORING LOCATION MAP

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE



APRIL 1995 SURVEY – ELEVATION OF SOIL BORING AND MONITORING WELL LOCATION
APRIL 1995 – DATE OF COLLECTION OF WATER TABLE ELEVATION DATA
CROSS-SECTION LOCATION PRESENTED ON FIGURE 7.

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FIGURE 4
GEOLOGIC CROSS-SECTION A-A'

DRN. BY LMS	PROJ. NO. 07724-012
DATE 27JUN95	DAMES & MOORE

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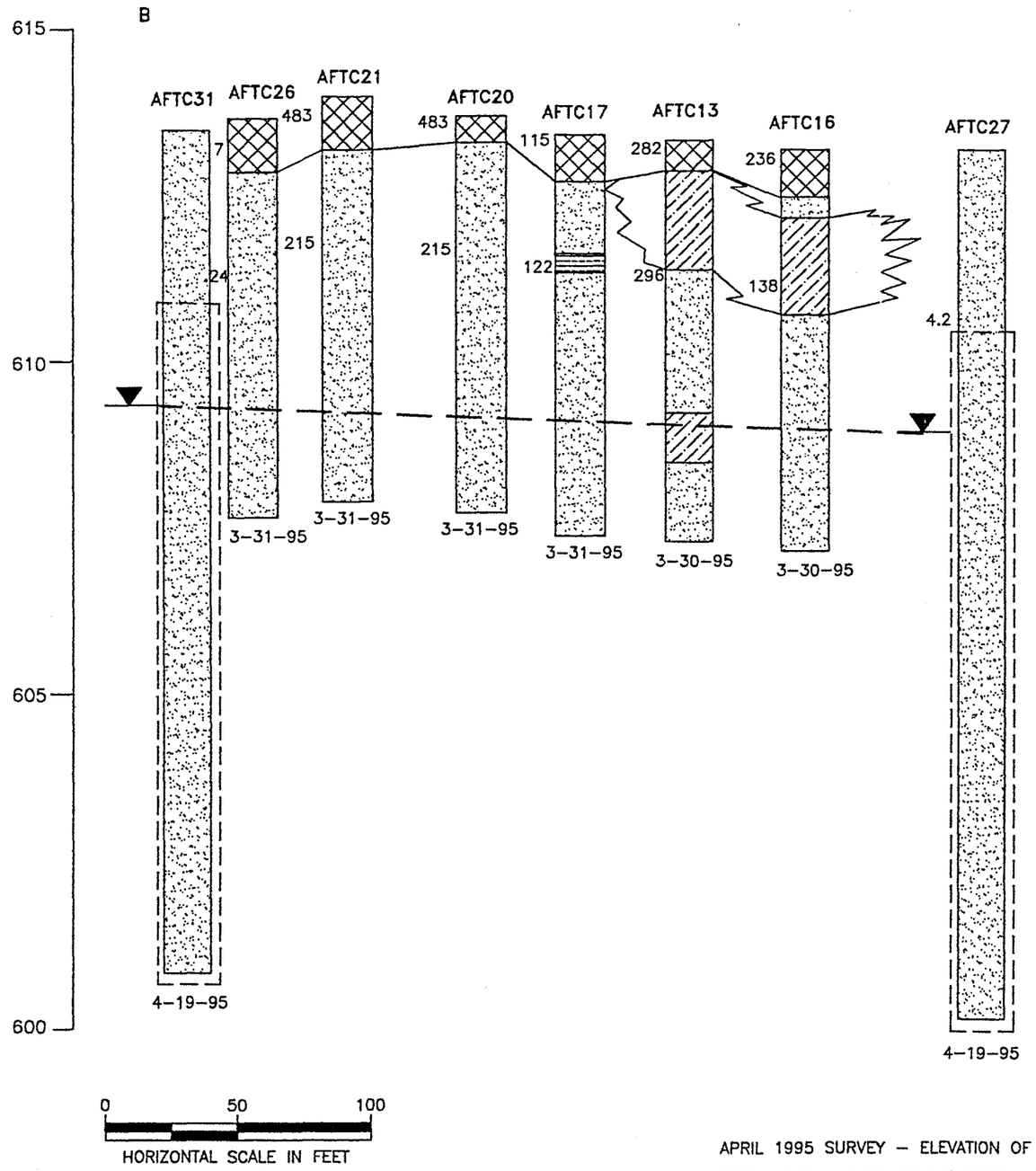

LEGEND

- FILL, CLAY AND GRAVEL
- SILT CONTAINING ORGANICS
- SAND
- SILTY SAND
- NOT DOCUMENTED
- SCREENED INTERVAL
- APPROXIMATE WATER TABLE ELEVATION

4-19-95 DATE DRILLED

4.2 PHOTOIONIZATION DETECTOR READING

APRIL 1995 SURVEY – ELEVATION OF SOIL BORING AND MONITORING WELL LOCATION

APRIL 1995 – DATE OF COLLECTION OF WATER TABLE ELEVATION DATA

CROSS-SECTION LOCATION PRESENTED IN FIGURE 7.

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FIGURE 5
GEOLOGIC CROSS-SECTION B-B'

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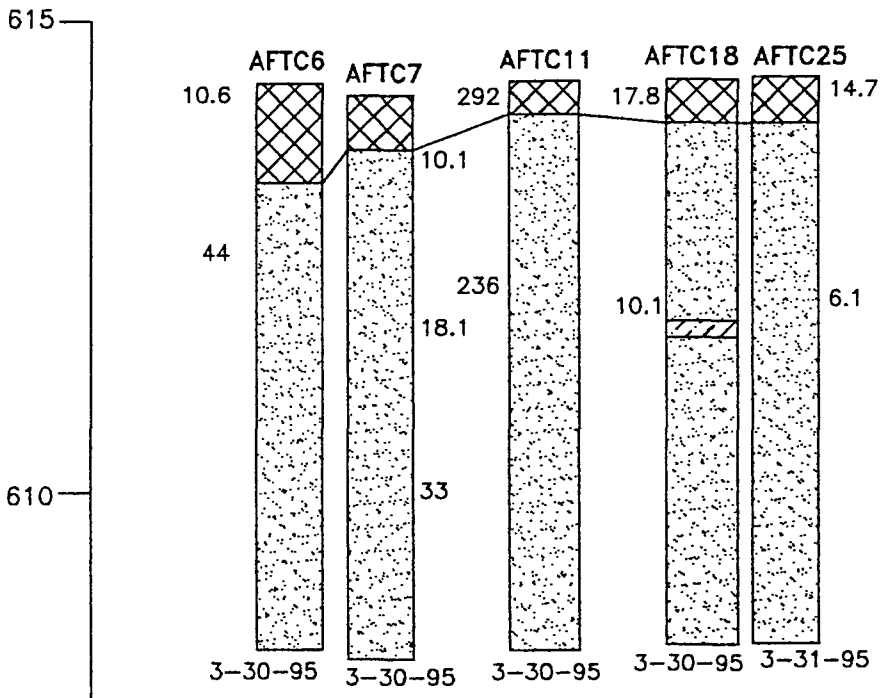
DATE 27JUN95	DAMES & MOORE

FILE: C:\DATA\DWGS\ANSUL\XSECB-B.DWG



LEGEND

- FILL, CLAY AND GRAVEL
- SAND
- SILTY SAND
- SCREENED INTERVAL

3-31-95 DATE DRILLED

6.1 PHOTOIONIZATION DETECTOR READING

APRIL 1995 SURVEY – ELEVATION OF SOIL BORING AND MONITORING WELL LOCATION

CROSS-SECTION LOCATION PRESENTED ON FIGURE 7.

0 50 100

HORIZONTAL SCALE IN FEET

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FIGURE 6
GEOLOGIC CROSS-SECTION C-C'

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE

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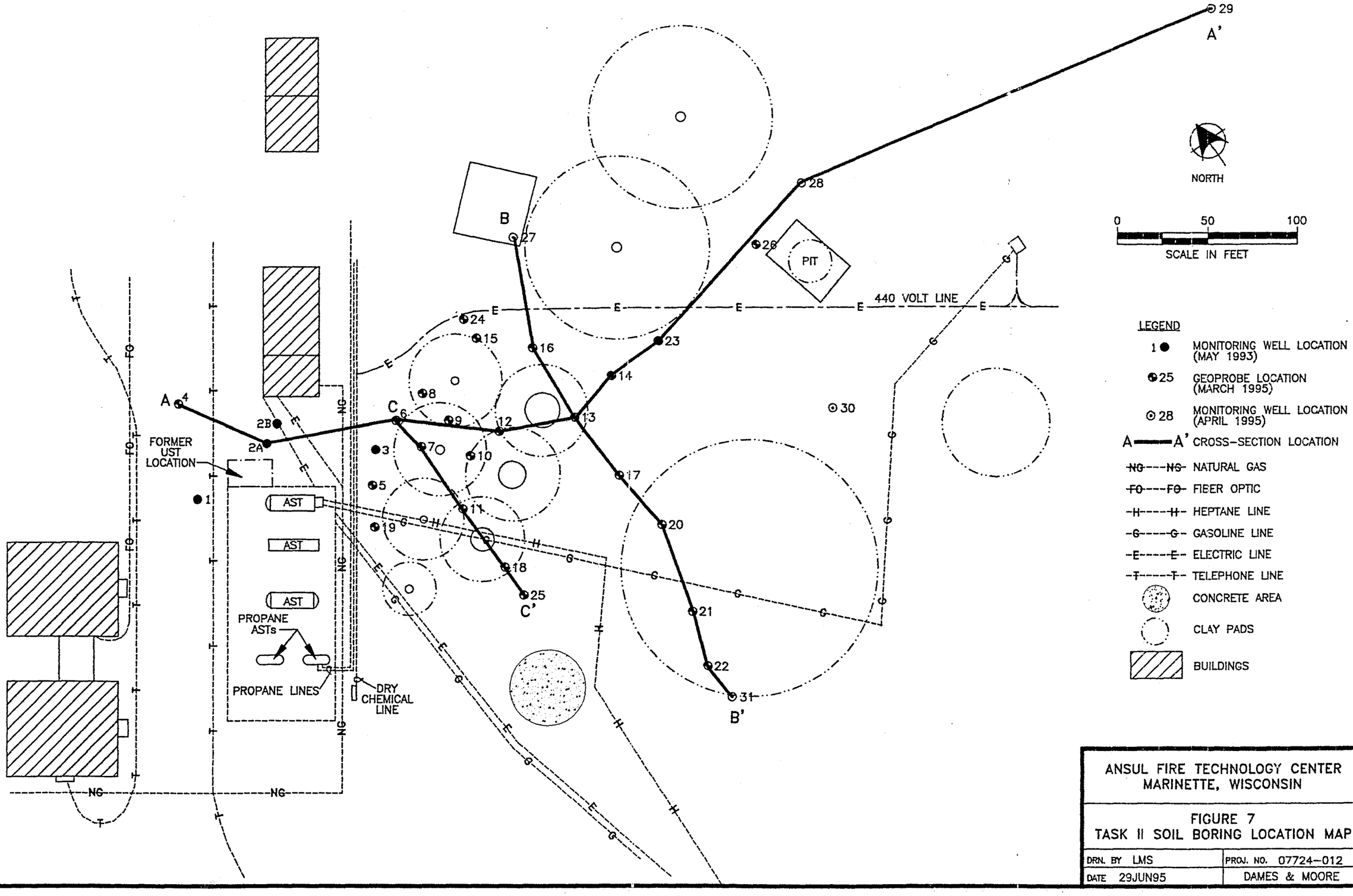

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FIGURE 7
TASK II SOIL BORING LOCATION MAP

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE

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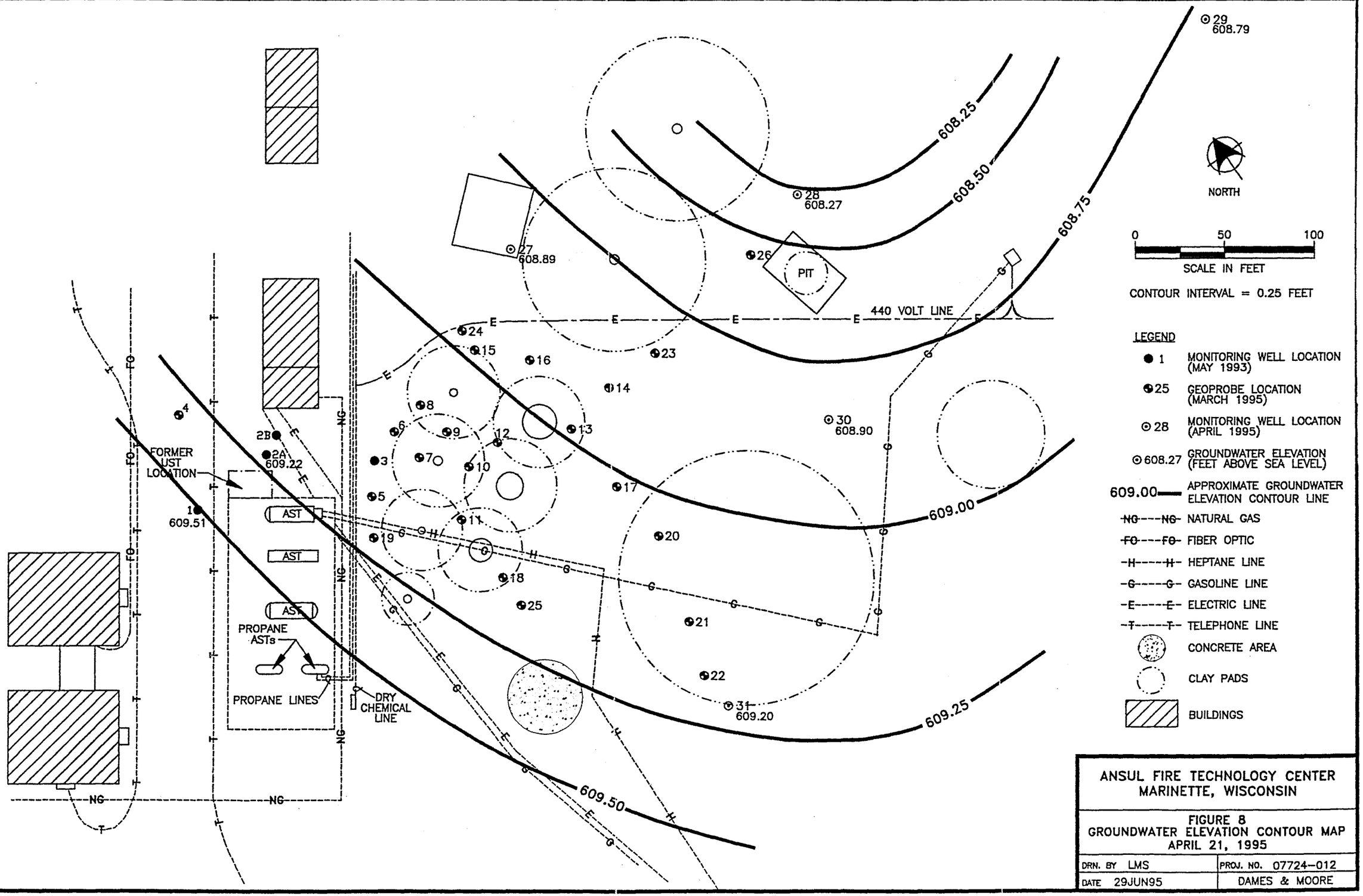

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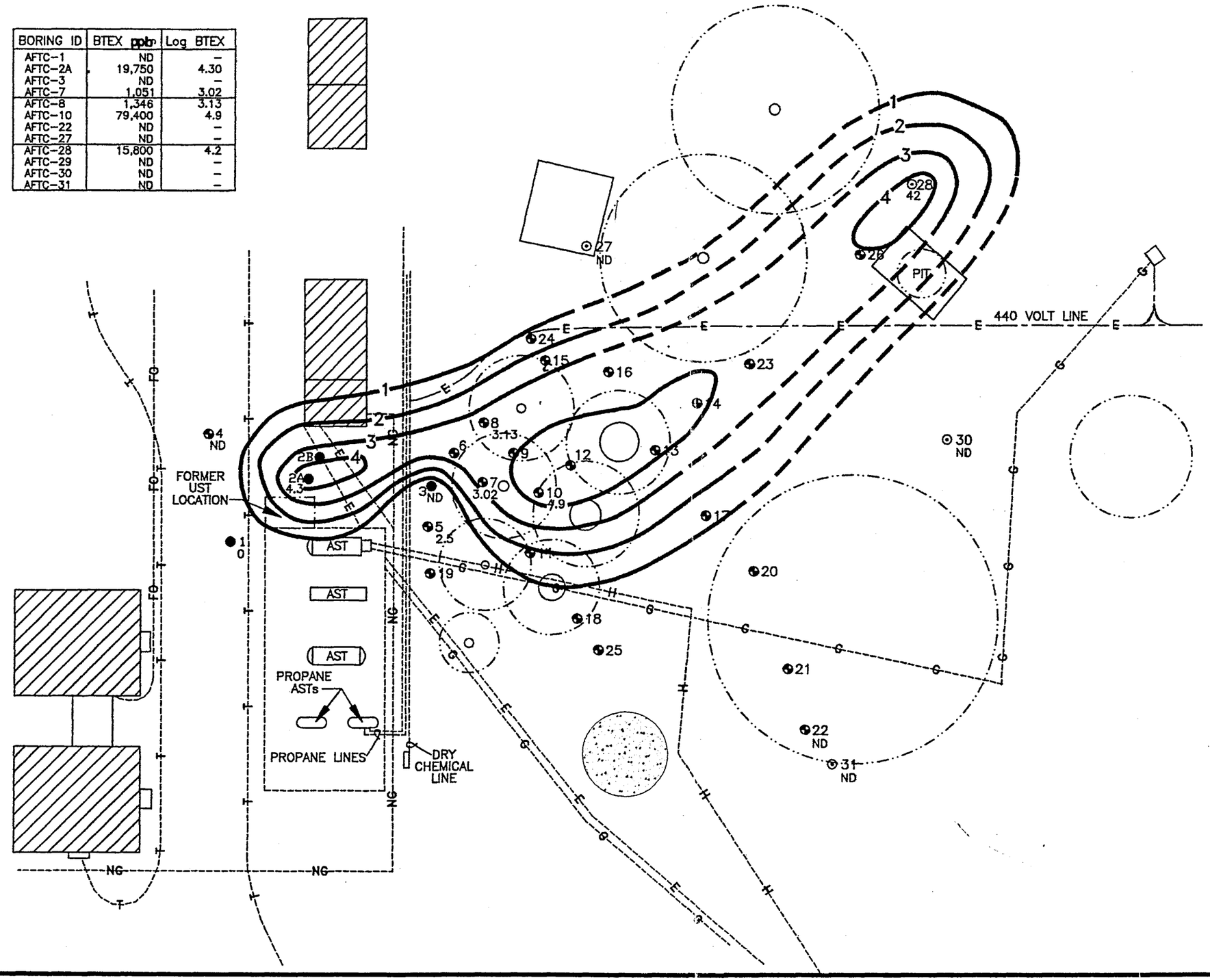
FIGURE 8
GROUNDWATER ELEVATION CONTOUR MAP
APRIL 21, 1995

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE

FILE: C:\DATA\DWGS\ANSUL\GW4-21.DWG

BORING ID	BTEX ppb	Log BTEX
AFTC-1	ND	–
AFTC-2A	19,750	4.30
AFTC-3	ND	–
AFTC-7	1,051	3.02
AFTC-8	1,346	3.13
AFTC-10	79,400	4.9
AFTC-22	ND	–
AFTC-27	ND	–
AFTC-28	15,800	4.2
AFTC-29	ND	–
AFTC-30	ND	–
AFTC-31	ND	–



FILE: C:\DATA\DWGS\ANSUL\BTEX-SOL.DWG

ANSUL FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

FIGURE 9
BTEX ISOCONCENTRATION MAP
SOIL

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE

BORING ID	BTEX ppb	Log BTEX
AFTC-1	0	0
AFTC-2A	21,670	4.34
AFTC-4	30	1.5
AFTC-5	293	2.5
AFTC-6	515	2.71
AFTC-7	184	2.26
AFTC-8	63	1.8
AFTC-9	14,865	4.17
AFTC-10	53,260	4.73
AFTC-11	11,749	4.07
AFTC-12	24,238	4.38
AFTC-13	45,392	4.66
AFTC-14	349,966	5.54
AFTC-15	75	1.89
AFTC-16	74,111	4.87
AFTC-17	60,816	4.78
AFTC-18	87	1.94
AFTC-19	41	1.61
AFTC-20	743,688	5.87
AFTC-21	16,604	4.22
AFTC-22	29	1.46
AFTC-23	1,127	3.05
AFTC-24	53	1.72
AFTC-25	8	0.9
AFTC-26	50	4.22
AFTC-27	11,420	4.06
AFTC-28	4,120	3.62
AFTC-29	0	0
AFTC-30	1,580	3.20
AFTC-31	0	0

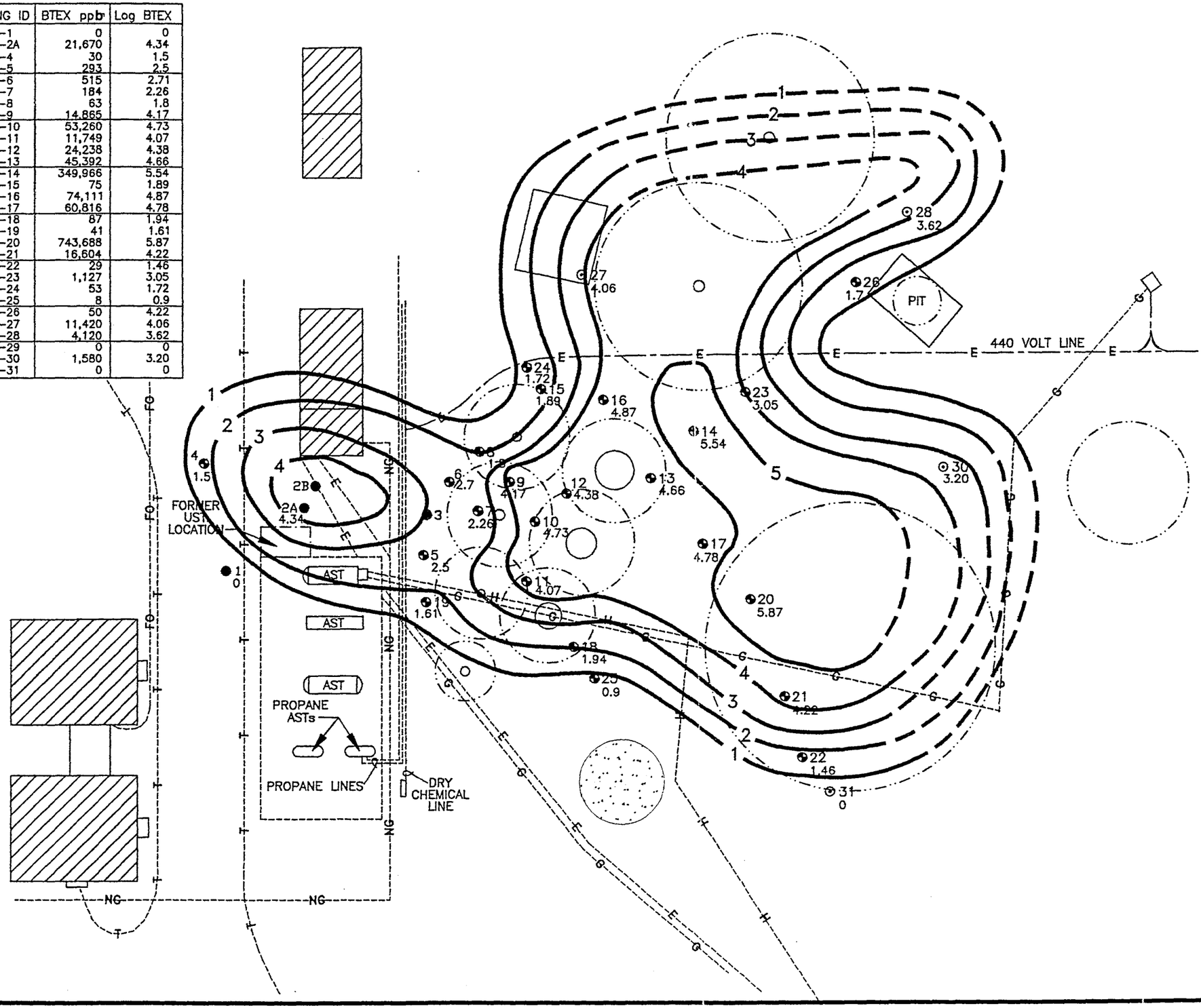


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FIGURE 10
BTEX ISOCONCENTRATION MAP
GROUNDWATER

DRN. BY LMS	PROJ. NO. 07724-012
DATE 29JUN95	DAMES & MOORE

FILE: C:\DATA\DWGS\ANSUL\BTEX-GW.DWG

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

Boring ID	Sample Interval (in feet)	PID Reading (Instrument Units)	Boring ID	Sample Interval (in feet)	PID Reading (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 Water	Depth to Product	Water Elevation	Corrected 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				
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

Analyte	Sample ID / Sample Interval	AFTC-4-2 2-4	AFTC-10-2 2-4	AFTC-22-2 2-4	AFTC-27/2-4 2-4	AFTC-28/2-4 2-4	AFTC-29/2-4 2-4	AFTC-30/2-4 2-4	AFTC-31/2-4 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

ND - not detected

mg/l - milligrams per liter

ug/l - micrograms per liter

MTBE - methyl-tertiary-butyl-ether

NT - not tested

* - sample collected during Task 1, no monitoring well was constructed

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 ID	B (PPB)	T (PPB)	EB (PPB)	MPX (PPB)	OX (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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-4** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **7.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**7.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-5**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)

Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] for

Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.**

Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-6** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

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Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-7**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Briohn Environmental Contractors

Signature of Person Doing Work: [signature] for ↑ Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location | County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-8** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface) Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-9**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work
Briohn Environmental Contractors

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-10**

WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.**

Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location | County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-11** | WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-12** | WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface) Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/30/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

DNR/COUNTY

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-13** | WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On
(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work
Briohn Environmental Contractors

Signature of Person Doing Work: [signature] | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-14**

WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

DNR/COUNTY

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

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State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-15**

WI Unique Well No: _ _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)

Casing Diameter (ins.) _____

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown

If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials

☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only

☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-16**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/30/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/30/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)

Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] for

Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.**

Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

DNR/COUNTY

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-17** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface) Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

07724-012

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable)

_____ Gov't Lot _____ Grid Number

Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-18**

WI Unique Well No: _ _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)

Casing Diameter (ins.) _____

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown

If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only

☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: Eric C. Johnson

Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.**

Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-19** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work
Briohn Environmental Contractors

Signature of Person Doing Work: [signature] | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location | County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-20** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface) Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] for [signature] | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-21**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: Eric C. Hahn for PI — Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** — Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

DNR/COUNTY

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

07724-012

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

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

Well/drillhole/Borehole Location: County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-22** | WI Unique Well No _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface) Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY **07724-012**

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-23**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)

Casing Diameter (ins.) _____

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown

If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials

For monitoring wells and monitoring well boreholes only

☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: B. C. [illegible] for

Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.**

Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location | County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-24** | WI Unique Well No

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface) Casing Diameter (ins.) ____ Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 3-94

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

Well/drillhole/Borehole Location

County: **MARINETTE**

☐ E ☒ W

NW 1/4 of **NE** 1/4 Sec. **13** ; T. **31** N; R. **27**

(If applicable)

_____ Gov't Lot _____ Grid Number

Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-25**

WI Unique Well No: _ _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)

Casing Diameter (ins.) ____

Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown

If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials

For monitoring wells and monitoring well boreholes only

☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

State of Wisconsin
Department of Natural Resources

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

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

Well/drillhole/Borehole Location | County: **MARINETTE**

NW 1/4 of NE 1/4 Sec. 13 ; T. 31 N; R. 27 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well: **Pierce Avenue**

City, Village: **City of Marinette**

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: **ANSUL FIRE TECHNOLOGY CENTER**

Street or Route: **One Stanton Street**

City, State, Zip Code: **Marinette, WI 54143**

Facility Well No. and/or Name (If Applicable): **AFTC-26** | WI Unique Well No: _ _ _ _ _

Reason For Abandonment: **Soil Boring Completion**

Date of Abandonment: **03/31/95**

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) **03/31/95**

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) **GEOPROBE**

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) **6.0** (From groundsurface)
Casing Diameter (ins.) ____
Casing Depth (ft.) ____

Lower Drillhole Diameter (in.) **1.1**

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) **4.0**

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☒ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) **GRAVITY**

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite- Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite Crumbles (Granular Bentonite)	Surface	**6.0**		

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: **Briohn Environmental Contractors**

Signature of Person Doing Work: [signature] | Date Signed: 6/27/95

Street or Route: **W233 N2800 Roundy Cir. W.** | Telephone Number: **(414)-524-2080**

City, State, Zip Code: **Suite 101, Pewaukee, WI 53072**

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

07724-012

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 water within a well. If, however the well could be pumped or bailed dry during 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 (HNO_3). 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 HNO_3. 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.

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-4**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	**03 / 30 / 95** MM DD YY	**03 / 30 / 95** MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	**1.10** inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of **NE** 1/4 of Section **13**, T **31** N, R **27** W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	**38**	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	**0.0 to 1.0 ASPHALT, 3 inches thick Traffic bond 3-9 inches Gravel 9-12 inches**	FILL									
1	24/18		1.0	**1.0 to 1.9 SAND, brownish yellow mottled with dark brown to black, medium to fine grained, dry to moist, no odor**	SP SM			0						
2	24/18		3.0	**1.9 to 3.0 SAND, silty, fine to medium grained, some silt, dark brown to black, moist, no odor**	SP			0						
3	24/18		4.0	**3.0 to 4.5 SAND, Brownish yellow, fine grained, moist, no odor**	SP									
			5.0	**4.5 to 5.0 SAND, brownish yellow, fine grained, wet, no odor**	SP									
			6.0	**5.0 to 7.0 SAND, brownish yellow, fine grained, wet, no odor**										
			7.0	**Abandoned at 7 feet with granular bentonite**										
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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.

07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-5**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___	___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	**0.0 to 0.5 CLAY, some gravel, (liner material), light brown to gray, dry, no odor**	FILL									
			1.0	**0.5 to 1.1 SAND, silty, dark brown to black, fine grained, dry to moist, slight odor**	SM			129						
2	24/16		2.0	**1.1 to 2.0 SAND, fine grained, reddish brown, moist, slight odor**	SP			1						
			3.0	**2.0 to 4.0 SAND, fine grained, reddish brown, moist, slight odor**	SP									
3	24/22		4.0	**4.0 to 4.5 SAND, fine grained, reddish brown, moist, slight odor**	SP									
			5.0	**4.5 to 6.0 SAND, fine grained, reddish brown, wet, slight odor**	SP									
			6.0	**Abandoned at 6 feet with granular bentonite**										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-6**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___	___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	**38**	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/21		0	**0.0 to 1.0 CLAY, some gravel, (liner material), light brown to gray, dry, no odor**	FILL			10.6						
			1.0	**1.0 to 2.0 SAND, fine grained, reddish brown, dry to moist, very slight odor**	SP									
2	24/18		2.0		SP			44						
			3.0	**2.0 to 4.0 SAND, fine grained, reddish brown, moist, very slight odor--origin unknown**										
3	24/20		4.0	**4.0 to 4.5 SAND, fine grained, reddish brown, moist, slight odor**	SP									
			5.0	**4.5 to 6.0 SAND, fine grained, reddish brown, wet, slight odor**	SP									
			6.0	**Abandoned at 6 feet with granular bentonite**										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-7

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		0	0.0 to 0.5 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL									
			1.0	0.5 to 1.4 SAND, brown, fine grained, dry, very slight odor	SP			10.1						
2	24/18		2.0	1.4 to 2.0 SAND, yellowish brown, fine grained, dry, loose, very slight odor	SP			18.1						
			3.0	2.0 to 4.0 SAND, yellowish brown, fine grained, dry, loose, very slight odor										
3	24/20		4.0	4.0 to 4.4 SAND, yellowish brown, fine grained, dry, loose, very slight odor	SP			33						
			5.0	4.4 to 5.0 SAND, light brown, fine grained, moist, no odor	SP									
			6.0	5.0 to 6.0 SAND, light brown, fine grained, moist, no odor	SP									
			7.0											
			8.0	Abandoned at 6 feet with granular bentonite										
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-8**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	**38**	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		0	**0.0 to 0.7 CLAY, some gravel (liner material), light brown to gray, dry, no odor**	FILL			248						
			1.0	**0.7 to 1.2 SAND, silty, reddish brown, fine grained, dry, no odor**	SM									
2	24/12		2.0	**1.2 to 2.0 SAND, silty, brownish black, fine grained, dry, no odor**	SM			238						
			3.0	**2.0 to 4.0 SAND, reddish yellow, fine grained, moist, slight odor**	SP									
3	24/22		4.0	**4.0 to 5.0 SAND, reddish yellow, fine grained, moist, slight odor**	SP									
			5.0	**5.0 to 6.0 SAND, reddish yellow, fine grained, wet, slight odor**	SP									
			6.0	**Abandoned at 6 feet with granular bentonite**										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-9

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ___° ___' ___"
Long ___° ___' ___"

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		0	0.0 to 0.7 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			287						
			1.0	0.7 to 1.4 SAND, light brown, fine grained, dry, slight odor	SP									
2	24/16		2.0	1.4 to 2.0 SAND, dark brown, fine grained, dry, petroleum odor	SP			308						
			3.0	2.0 to 4.0 SAND, yellowish red, fine grained, moist, strong petroleum odor										
3	24/20		4.0	4.0 to 4.7 SAND, yellowish red, fine grained, moist, petroleum odor	SP									
			5.0	4.7 to 6.0 Sand, brown, fine grained, wet, petroleum odor	SP									
			6.0											
			7.0											
			8.0	Abandoned at 6 feet with granular bentonite										
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Eric C. Johnson

Firm: **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-10

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		1.0	0.0 to 0.7 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			292						
				0.7 to 1.3 SAND, yellowish red, fine grained, dry to moist, no odor	SP									
2	24/18		2.0		SP			298						
			3.0	1.3 to 2.0 SAND, reddish brown, fine grained, moist, strong petroleum odor										
				2.0 to 4.0 SAND, reddish brown, fine grained, moist, strong petroleum odor										
3	24/16		4.0		SP									
			5.0	4.0 to 6.0 SAND, reddish brown, fine grained, trace dark brown silt, wet, strong petroleum odor										
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-11

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___	___ ___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	0.0 to 0.3 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			292						
			1.0	0.3 to 1.3 SAND, yellowish brown, fine grained, dry to moist, no petroleum odor	SP									
2	24/16		2.0	1.3 to 1.5 SAND, reddish brown, fine grained, dry to moist, strong petroleum odor	SP			236						
			3.0	1.5 to 2.0 SAND, gray, fine grained, dry to moist, slight petroleum odor	SP									
3	24/24		4.0	2.0 to 4.0 SAND, reddish brown, fine grained, moist, petroleum odor										
			5.0	4.0 to 6.0 SAND, reddish brown, fine grained, wet, petroleum odor										
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-12

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	0.0 to 0.5 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			238						
			1.0	0.5 to 1.3 SAND, brown, fine grained, dry, slight petroleum odor	SP									
2	24/18		2.0	1.3 to 2.0 SAND, reddish brown, fine grained, moist, petroleum odor	SP			276						
			3.0	2.0 to 4.0 SAND, reddish brown, fine grained, moist, petroleum odor										
3	24/23		4.0	4.0 to 6.0 SAND, reddish brown, fine grained, wet, petroleum odor	SP									
			5.0											
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-13

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	0.0 to 0.5 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			282						
			1.0	0.5 to 0.7 SAND, reddish brown, fine grained, some black organic silt, dry, no odor	SM									
2	24/18		2.0	0.7 to 2.0 SAND, gray, fine grained, some black organic silt, moist, slight petroleum odor	SM			296						
			3.0	2.0 to 4.0 SAND, reddish brown, fine grained, moist, petroleum odor	SP									
3	24/23		4.0	4.0 to 4.2 SAND, reddish brown, mottled with black, fine grained, moist, petroleum odor	SP SM									
			5.0	4.2 to 4.4 SAND, brown, mottled with grey, trace silt, dry, slight petroleum odor	SM SP									
			6.0	4.4 to 4.7 SAND, reddish brown, fine grained, dry to moist, petroleum odor										
			7.0	4.7 to 6.0 SAND, reddish brown, fine grained, wet, petroleum odor										
			8.0	Abandoned at 6 feet with granular bentonite										
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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.

07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-14

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		1.0	0.0 to 0.4 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			255						
				0.4 to 1.1 SAND, reddish brown, fine grained, some black organic silt, dry to moist, no odor	SM									
2	24/16		2.0	1.1 to 2.0 SAND, gray, fine grained, some organic silt, dry to moist, slight petroleum odor	SM			178						
			3.0	2.0 to 2.8 SAND, reddish brown, fine grained, some black organic silt, moist, slight petroleum odor	SM									
3	24/16		4.0	2.8 to 4.0 SAND, yellowish brown, fine grained, moist, petroleum odor	SM SP									
			5.0	4.0 to 4.3 SAND, reddish brown, fine grained, some black silt, moist, petroleum odor										
			6.0	4.3 to 4.8 SAND, yellow brown, fine, moist, petroleum odor										
			7.0	4.8 to 6.0 SAND, reddish brown, fine grained, wet, petroleum odor										
			8.0	Abandoned at 6 feet with granular bentonite										
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-15**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	**38**	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/22		0	**0.0 to 0.7 CLAY, some gravel, (liner material), light brown to gray, dry, no odor**	FILL									
			1.0	**0.7 to 1.3 SAND, brown, fine grained, dry, no odor**	SP			178						
2	24/22		2.0	**1.3 to 1.5 SAND, brown, fine grained, with angular fine gravel, dry, no odor**	SP			224						
			3.0	**1.5 to 2.0 SAND, reddish brown, fine grained, dry, no odor**	SP									
3	24/16		4.0	**2.0 to 2.4 SAND, reddish brown, fine grained, dry, no odor**	SP									
			5.0	**2.4 to 3.8 SAND, yellowish brown, fine grained, dry, no odor**	SP									
			6.0	**3.8 to 4.0 SAND, yellowish orange, fine grained, dry, no odor**										
			7.0	**4.0 to 4.4 SAND, yellowish orange, fine grained, dry, no odor**										
			8.0	**4.4 to 6.0 SAND, reddish brown, fine grained, wet, no odor**										
			9.0	**Abandoned at 6 feet with granular bentonite**										
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-16

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 30 / 95 MM DD YY	03 / 30 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	0.0 to 0.7 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			236						
			1.0	0.7 to 1.0 SAND, brown, fine grained, dry	SP SM									
2			2.0	1.0 to 2.0 SAND, greyish black, with organic silt, trace gravel, dry, slight petroleum odor	SM			138						
			3.0	2.0 to 2.5 SAND, greyish black, with organic silt, trace gravel, dry, slight petroleum odor	SP									
3			4.0	2.5 to 4.0 SAND, reddish brown, fine grained, moist, petroleum odor										
			5.0	4.0 to 4.2 SAND, reddish brown, fine grained, moist, petroleum odor										
			6.0	4.2 to 6.0 SAND, reddish brown, fine grained, wet, strong petroleum odor										
			7.0	Abandoned at 6 feet with granular bentonite										
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-17

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 15 MM DD YY	03 / 31 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		0	0.0 to 0.7 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			115						
			1.0	0.7 to 1.7 SAND, yellowish brown, dry, no odor	SP									
2			2.0	1.7 to 2.0 SILT, black, organic, some wood fibers, trace sand, moist, organic odor	OL			122						
			3.0	2.0 to 2.5 SILT, black, organic, some wood fibers, trace sand, moist, organic odor	OL									
3			4.0	2.5 to 4.0 SAND, reddish brown, fine grained, dry to moist, strong petroleum odor	SP									
			5.0	4.0 to 4.8 SAND, reddish brown, fine grained, dry to moist, strong petroleum odor	SP									
			6.0	4.8 to 6.0 SAND, reddish brown, fine grained, wet, strong petroleum odor	SP									
			7.0	Abandoned at 6 feet with granular bentonite										
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-18

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 15 MM DD YY	03 / 31 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___	___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/21		0	0.0 to 0.4 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			17.8						
			1.0	0.4 to 2.0 SAND, yellowish brown, fine grained, dry to moist, no odor	SP									
2	24/18		2.0	2.0 to 2.2 SAND, yellowish brown, fine grained, dry to moist, no odor	SP			10.1						
			3.0	2.2 to 2.4 SILT, organic, black, with sand, fine grained, moist, no odor	SM									
3			4.0	2.4 to 4.0 SAND, yellowish brown, fine grained, dry, no odor	SP									
			5.0	4.0 to 4.5 SAND, yellowish brown, fine grained, dry to moist, no odor	SP									
			6.0	4.5 to 6.0 SAND, yellowish brown, fine grained, wet, no odor										
			7.0	Abandoned at 6 feet with granular bentonite										
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-19

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 95 MM DD YY	03 / 31 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___	___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	0.0 to 0.5 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			11.7						
			1.0	0.5 to 0.7 SILT, black, organic, moist, organic odor	OL SP									
2	24/18		2.0	0.7 to 2.0 SAND, reddish brown, fine grained, moist, no odor	SP			67						
			3.0	2.0 to 4.0 SAND, reddish brown, fine grained, moist, no odor										
3	24/20		4.0	4.0 to 4.3 SAND, reddish brown, fine grained, moist, no odor	SP SP									
			5.0	4.3 to 6.0 SAND, reddish brown, fine grained, wet, no odor										
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-20

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 95 MM DD YY	03 / 31 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		0	0.0 to 0.4 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			287						
			1.0	0.4 to 2.0 SAND, yellowish brown, fine grained, dry, strong petroleum odor	SP									
2	24/21		2.0		SP			213						
			3.0	2.0 to 4.0 SAND, yellowish brown, fine grained, dry, strong petroleum odor										
3	24/23		4.0	4.0 to 4.5 SAND, yellowish brown, fine grained, dry to moist, strong petroleum odor	SP									
			5.0		SP									
				4.5 to 6.0 SAND, yellowish brown, fine grained, wet, strong petroleum odor										
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-21**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	03 / 31 / 95 MM DD YY	03 / 31 / 95 MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/22		1.0	0.0 to 0.8 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			48.3						
				0.8 to 2.0 SAND, reddish brown, fine grained, dry, no petroleum odor	SP									
2	24/23		2.0 3.0	2.0 to 4.0 SAND, reddish brown, fine grained, dry to moist, slight petroleum odor	SP			21.9						
3	24/23		4.0	4.0 to 5.0 SAND, reddish brown, fine grained, dry to moist, slight petroleum odor	SP									
			5.0	5.0 to 6.0 SAND, reddish brown, fine grained, wet, slight petroleum odor	SP									
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0 8.0 9.0 10.0 11.0 12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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.

07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-22

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 95 MM DD YY	03 / 31 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/20		0	0.0 to 0.4 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			2.5						
			1.0	0.4 to 1.4 SAND, yellowish brown, fine grained, dry, no odor	SP									
2	24/'6		2.0	1.4 to 2.0 SAND, orange brown, fine grained, dry to moist, no petroleum odor	SP			2.0						
			3.0	2.0 to 4.0 SAND, orange brown, fine grained, dry to moist, no petroleum odor										
3			4.0	4.0 to 4.5 SAND, orange brown, fine grained, dry to moist, no petroleum odor	SP									
			5.0	4.5 to 6.0 SAND, orange brown, fine grained, wet, no petroleum odor	SP									
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature]

Firm: **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-23**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL **PEWAUKEE, WISCONSIN**	03 / 31 / 95 MM DD YY	03 / 31 / 95 MM DD YY	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	**38**	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/19		0	0.0 to 0.4 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			92						
			1.0	0.4 to 0.9 SAND, yellowish brown, fine grained, medium dense, dry, no odor	SP									
2	24/16		2.0	0.9 to 2.0 SAND, reddish brown, dry to moist, no odor	SP			5.6						
			3.0	2.0 to 4.0 SAND, reddish brown, dry to moist, no odor										
3	24/22		4.0	4.0 to 4.5 SAND, reddish brown, fine grained, dry to moist, no odor	SP									
			5.0	4.5 to 6.0 SAND, reddish brown, fine grained, wet, no odor	SP									
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-24

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 95 MM DD YY	03 / 31 / 95 MM DD YY	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _ _		_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ___° ___' ___"
Long ___° ___' ___"

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/22		1.0	0.0 to 0.7 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			9.1						
				0.7 to 2.0 SAND, reddish brown, fine grained, dry, no odor	SP									
2	24/16		2.0 3.0	2.0 to 4.0 SAND, reddish brown, fine grained, dry, no odor	SP			10.1						
3	24/18		4.0	4.0 to 4.5 SAND, reddish brown, fine grained, dry to moist, no odor	SP									
			5.0	4.5 to 6.0 SAND, reddish brown, fine grained, wet, no odor	SP									
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0 8.0 9.0 10.0 11.0 12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____

Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
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Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		AFTC-25

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started (MM / DD / YY)	Date Drilling Completed (MM / DD / YY)	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 95	03 / 31 / 95	GEOPROBE

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	1.10 inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	38	CITY OF MARINETTE

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/18		0	0.0 to 0.4 CLAY, some gravel, (liner material), light brown to gray, dry, no odor	FILL			14.7						
			1.0	0.4 to 2.0 SAND, brown, fine grained, dry, no odor	SP									
2	24/20		2.0	2.0 to 4.0 SAND, reddish brown, fine grained, some organic black silt, dry to moist, no petroleum odor	SP			6.1						
			3.0											
3	24/22		4.0	4.0 to 5.0 SAND, reddish brown, fine grained, dry to moist, no odor	SP									
			5.0	5.0 to 6.0 SAND, reddish brown, fine grained, wet, no odor	SP									
			6.0	Abandoned at 6 feet with granular bentonite										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
ANSUL FIRE TECHNOLOGY CENTER		**AFTC-26**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started (MM / DD / YY)	Date Drilling Completed (MM / DD / YY)	Drilling Method
BRIOHN ENVIRONMENTAL PEWAUKEE, WISCONSIN	03 / 31 / 95	03 / 31 / 95	**GEOPROBE**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	**1.10** inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of NE 1/4 of Section 13, T 31 N, R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
MARINETTE	**38**	**CITY OF MARINETTE**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	24/22		0	**0.0 to 0.8 CLAY, some gravel, (liner material), light brown to gray, dry, no odor**	FILL			7.0						
			1.0	**0.8 to 2.0 SAND, orange brown, fine grained, dry, no odor**	SP									
2	24/14		2.0	**2.0 to 4.0 SAND, orange brown, fine grained, dry, no odor**	SP			24						
			3.0											
3	24/18		4.0	**4.0 to 6.0 SAND, orange brown, fine grained, wet, no odor**	SP									
			5.0											
			6.0	**Abandoned at 6 feet with granular bentonite**										
			7.0											
			8.0											
			9.0											
			10.0											
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Dames & Moore, Inc.**
13255 West Blue Mound Road, Suite 202, Brookfield, WI 53005-6245

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07724-012

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION
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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ansul Fire Technology Center		AFTC-27

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Midwest Engineering Services, Gary Wellner	4/19/95	4/19/95	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —	AFTC-27	608.9 Feet msl	613.2 Feet msl	8 1/4 Inches

Boring Location
State Plane N, E S/C/N
NW 1/4 of NE 1/4 of Section 13 T 31 N,R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Marinette	38	City of Marinette

Sample Number	Sample 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	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			1	Hand dig										
*2-4	24	20	2	SAND; reddish brown, fine grained, moist, trace silt	SM			4.2	20					
			3											
4-6	20	16	4	Top 8" SAND; reddish brown, fine grained, moist, trace silt	SM			3.1	16					
			5	Bottom 12" SAND; reddish brown, fine grained, wet, trace silt										
6-8	18	6	6	SAND; reddish brown, fine grained, wet, trace silt	SM			291	6					
			7											
8-10	2	2	8	SAND; reddish brown, fine grained, wet, trace silt	SM			189	2					
			9											
10-12	4	4	10	SAND; reddish brown, fine grained, wet, trace silt	SM			85.0	4					
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Hoffmann

Firm: DAMES & MOORE
13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005
Tel: (414)782-7281 Fax: (414)782-7289

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number AFTC-27 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample Number	Sample 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	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			13	SAND; reddish brown, fine grained, wet, trace silt	SM									
				End of boring at 13.0' *sample submitted for laboratory analysis										

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ansul Fire Technology Center		AFTC-28

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Midwest Engineering Services, Gary Wellner	4/19/95	4/19/95	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —	AFTC-28	607.6 Feet msl	613.1 Feet msl	8 1/4 Inches

Boring Location
State Plane N, E S/C/N
NW 1/4 of NE 1/4 of Section 13 T 31 N,R 27 W
Lat o ' "
Long o ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Marinette	38	City of Marinette

Sample Number	Sample 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	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
0-2	16	15	1	SAND; brown, coarse, little gravel, moist, HC odor, trace silt	SP				15					
*2-4	20	4	2	Top 8" SAND; brown, coarse, little gravel, moist, HC odor, trace silt Bottom 12" SAND; reddish brown, fine grained, moist, trace silt, gravel	SP			223	4					
4-6	24	5	4	SAND; reddish brown, fine grained, moist, trace silt, gravel, wet - product?	SP			187	5					
6-8	18	5	6	SAND; reddish brown, fine grained, moist, trace silt, gravel	SM			190	5					
8-10	24	4	8	SAND; reddish brown, fine grained, moist, trace silt, gravel	SM			210	4					
10-12	24	3	10	SAND; reddish brown, fine grained, moist, trace silt, gravel	SM			116	3					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Kirk L. Kaufmann

Firm: DAMES & MOORE
13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005
Tel: (414)782-7281 Fax: (414)782-7289

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ansul Fire Technology Center		AFTC-29

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Midwest Engineering Services, Gary Wellner	4/19/95	4/19/95	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —	AFTC-29	608.8 Feet msl	612.4 Feet msl	8 1/4 Inches

Boring Location
State Plane N, E S/C/N
NW 1/4 of NE 1/4 of Section 13 T 31 N,R 27 W
Lat o ' "
Long o ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Marinette	38	City of Marinette

Sample Number	Sample 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	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
0-2	18	4	1	Top 6" SAND & GRAVEL; gray, silty, trace organics, moist Bottom 12" SAND; red/brown, fine grained, trace silt, moist	SP			2.4	4					
*2-4	18	10	2-3	SAND; red/brown, fine grained, trace silt, moist	SP			4.3	10					
4-6	24	7	4-5	SAND; red/brown, fine grained, trace silt, wet	SP			2.6	7					
6-8	22	9	6-7	SAND; red/brown, fine grained, trace silt, wet	SP			12.6	9					
8-10	20	4	8-9	SAND; red/brown, fine grained, trace silt, wet Sheen in spoon	SP			10.8	4					
10-12	20	8	10-11	SAND; red/brown, fine grained, trace silt, wet	SP			8.6	8					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Kirk L Hoffhammer

Firm: DAMES & MOORE
13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005
Tel: (414)782-7281 Fax: (414)782-7289

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ansul Fire Technology Center		AFTC-30

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Midwest Engineering Services, Gary Wellner	4/19/95	4/19/95	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —	AFTC-29	608.9 Feet msl	612.9 Feet msl	8 1/4 Inches

Boring Location
State Plane N, E S/C/N
NW 1/4 of NE 1/4 of Section 13 T 31 N,R 27 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Marinette	38	City of Marinette

Sample Number	Sample 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	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
0-2	12	13	1	Top 4" SAND & GRAVEL; gray, little silt, moist Bottom 8" SAND; orange/brown, fine, trace silt, moist	SP			14.3	13					
*2-4	20	9	2	SAND; brown, trace silt, moist Odor - not like gas, more like a sewer odor	SP			698	9					
4-6	24	6	4	Top 4" SAND; brown, trace silt, moist Bottom 20" SAND; brown, trace silt, wet, strong odor - not HC, sewer?	SP			1562	6					
6-8	18	4	6	SAND; brown, trace silt, wet	SP			400	4					
8-10	6	2	8	SAND; brown, trace silt, wet	SP			680	2					
10-12	2	2	10	SAND; brown, trace silt, wet	SP			432	2					
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Dagenhamm

Firm: DAMES & MOORE
13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005
Tel: (414)782-7281 Fax: (414)782-7289

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.

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Ansul Fire Technology Center		AFTC-31

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Midwest Engineering Services, Gary Wellner	4/19/95	4/19/95	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	— — — — — —	AFTC-29	618.0 Feet msl	613.6 Feet msl	8 1/4 Inches

Boring Location
State Plane N, E S/C/N
NW 1/4 of NE 1/4 of Section 13 T 31 N,R 27 W
Lat o ' "
Long o ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Marinette	38	City of Marinette

Sample Number	Sample 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	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			1	Hand dug SAND & GRAVEL; gray, top 8" brown, fine grained sand, moist, trace silt	SP									
*2-4	24	13	2	SAND; orange, brown, fine grained, trace silt, moist	SP			0.2	13					
4-6	24	14	4	SAND; orange, brown, fine grained, trace silt, moist	SP			0.6	14					
6-8	18	9	6	SAND; orange, brown, fine grained, trace silt, wet	SP			1.7	9					
8-10	10	2	8	SAND; orange, brown, fine grained, trace silt, wet	SP			0.8	2					
10-12	10	7	10	SAND; orange, brown, fine grained, trace silt, wet	SP			0.6	7					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Hoffmann

Firm: DAMES & MOORE
13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005
Tel: (414)782-7281 Fax: (414)782-7289

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.

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

ANATECH
Laboratories

a Division of
CT&E Environmental
Services Inc.

Revised Report

Lab I.D. :	52199
Report Date :	06/27/1995
Project :	07724-012
Client :	Dames & Moore
	13255 West Bluemound Road
	Brookfield, WI 53005
Attention :	Mr. Jeff Danko

6 pages including cover sheet

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

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Dames & Moore

Sample:	52199-8527	Matrix:	Soil
Client Sample:	AFTC-27/2-4	Location:	
COLLECTED:	04/19/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:30	Sampled By:	KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	1.0	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	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	"	04/27/1995 RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5	"	04/27/1995 RJW
Benzene	ND	ug/kg	5	"	04/27/1995 RJW
Toluene	ND	ug/kg	5	"	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: Results are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995 OY
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Maria G. Bissell

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

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

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

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52199-8528	Matrix:	Soil
Client Sample:	AFTC-28/2-4	Location:	
COLLECTED:	04/19/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:30	Sampled By:	KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	2.8	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	91.4	%	0.1	Standard Mtd. 2540G	04/25/1995 PL
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	13,000	ug/kg	300	SW-846 Mtd. 8020	04/26/1995 RJW
1,3,5-trimethylbenzene	26,000	ug/kg	100	"	04/26/1995 RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	100	"	04/26/1995 RJW
Benzene	ND	ug/kg	100	"	04/26/1995 RJW
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	"	04/26/1995 RJW
			Note: Results are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	490	mg/kg	200	Wisconsin GRO	04/28/1995 OY
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Maria G. Bissell

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

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

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FAX: 616-845-9942

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52199-8529	Matrix:	Soil
Client Sample:	AFTC-29/2-4	Location:	
COLLECTED:	04/19/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:30	Sampled By:	KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	0.7	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995 GCP
			Note: Results 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	"	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 Fraction)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995 OY
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Maria G. Bissell

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

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ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52199-8530	Matrix:	Soil
Client Sample:	AFTC-30/2-4	Location:	
COLLECTED:	04/19/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:30	Sampled By:	KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	0.8	mg/kg	0.1	SW-846 Mtd. 7421	05/02/1995 GCP
			Note: Results 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	"	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 Fraction)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995 OY
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

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

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

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Dames & Moore

Sample:	52199-8531	Matrix:	Soil
Client Sample:	AFTC-31/2-4	Location:	
COLLECTED:	04/19/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:30	Sampled By:	KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
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.		
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 Fraction)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/28/1995 OY
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Maria G. Bissell

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

ANATECH Laboratories a div. of CT & E Envrionmental Services

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H
Spiked sample ID: 52228-8687

Analyst: R. Wilson
Date Analyzed: 04/26/95
Date Reported: 05/04/95
Spike lot No.: NA
Instrument Batch: H26APR95
H27APR95

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS 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

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC LIMITS 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.

Values outside of QC limits

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

ANATECH Laboratories a div. of CT & E Envrionmental Services

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludington		Analyst:	R. Wilson
Method: SW-846 Mth. 8060 / 8240		Date Analyzed:	04/26/95
Instrument:	HP 5972 GC/MS - H	Date Reported:	05/04/95
Matrix:	Water	Spike lot No.:	NA
Spike level:	50 ug/L	Instrument Batch:	H26APR95
		Page 1 of 2	

Compound	METH BLANK (ug/L)	AvgRRF	CCRRF	%D	MIN RRF	MAX %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-Chloroethylvinylehter	<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
t-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%		

ANATECH Laboratories a div. of CT & E Envrionmental Services

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludingtion
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H
Matrix: Water
Spike level: 50 ug/L

Analyst: R. Wilson
Date Analyzed: 04/26/95
Date Reported: 05/04/95
Spike lot No.: NA
Instrument Batch: H26APR95

Compound		AvgRRF	CCRRF	%D	MIN RRF	MAX %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-Chlorotoluene	<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, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H

Analyst: Rob Wilson
Date Analyzed: 04/26/95
Date Reported: 05/04/95
Instrument Batch: H26APR95

m/e	ION ABUNDANCE CRITERIA	% RELATIVE 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

ANATECH Laboratories a div. of CT & E Envrionmental Services

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H
Matrix: Water
Spike level: 50 ug/L

Analyst: R. Wilson
Date Analyzed: 04/27/95
Date Reported: 05/04/95
Spike lot No.: NA
Instrument Batch: H27APR95

Compound	METH BLANK (ug/L)	AvgRRF	CCRRF	%D	MIN RRF	MAX %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%		

ANATECH Laboratories a div. of CT & E Envrionmental Services

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H
Matrix: Water
Spike level: 50 ug/L

Analyst: R. Wilson
Date Analyzed: 04/27/95
Date Reported: 05/04/95
Spike lot No.: NA
Instrument Batch: H27APR95

Compound		AvgRRF	CCRRF	%D	MIN RRF	MAX %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%		
1,3,5-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%		
Toluene-d8		1.208	1.209	-0.1%		
4-Bromofluorobenzene		0.683	0.702	-2.8%		

Comments:

ANATECH Laboratories a div. of CT & E Envrionmental Services

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

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H

Analyst: Rob Wilson
Date Analyzed: 04/27/95
Date Reported: 05/04/95
Instrument Batch: H27APR95

m/e	ION ABUNDANCE CRITERIA	% RELATIVE 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

ANATECH Laboratories a div. of CT & E Envrionmental Services

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8020 / WIS. GRO
Inst.: Varian 3400 - K
Spiked sample ID: 52198-8519

Analyst: Omer Young
Date Analyzed: 04/28/95
Date Reported: 05/04/95
QC Check lot No.: V1,124,6
Instrument Batch: K28ARP95A

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS 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

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	QC LIMITS 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
* GRO units are in mg/L

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

Comments:

ANATECH Laboratories a div. of CT & E Envrionmental Services

METHOD BLANK AND CALIBRATION CHECK

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8020 / WIS. GRO
Inst.: Varian 3400 - K

Analyst: Omer Young
Date Analyzed: 04/28/95
Date Reported: 05/04/95
QC Check lot No.: v1,124,6
Instrument Batch: K28APR95A

COMPOUND	METH. BLANK (ug/L)	QC CHECK CONC. (ug/L)	QC CHECK 1 CONC. (ug/L)	QC CHECK 2 CONC. (ug/L)	QC CHECK 3 CONC. (ug/L)	QC RANGE (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.

NA - Not analyzed.
* - GRO units are mg/L

Comments:

DAMES & MOORE

13255 West Bluemound Road, Suite 202
Brookfield, Wisconsin 53005
(414) 782-7281 FAX: (414) ~~347-0388~~ 782-7289

Lab AnaTech

Chain of Custody Seal #_____ #_____

Turnaround Time

☐ Rush (preapproved by Lab)
☒ Normal

PROJECT NAME:

PROJECT #: 07724-012

Send Results To:
PROJECT MANAGER: Jeff Danko
BILL TO: D+M

SHIPPING DETAILS:
Method of Shipment
Contents Temperature ____ C
Comments

LAB USE ONLY	DATE	SAMPLE TIME	CONTAINERS	No.	SAMPLE ID	SAMPLE TYPE	ANALYSIS REQUESTED: PVOC/Lead	ANALYSIS REQUESTED: GRO	REMARKS/PRESERVATIVES
8527	4/19/95		2oz	2	AFTC-27/2-4	Soil		X	MeOH
—			~~8oz~~	1	AFTC-27/2-4		X		
8528			2oz	2	AFTC-28/2-4			X	MeOH
—			8oz	1	AFTC-28/2-4		X		
8529			2oz	2	AFTC-29/2-4			X	MeOH
—			8oz	1	AFTC-29/2-4		X		
8530			2oz	2	AFTC-30/2-4			X	MeOH
—			8oz	1	AFTC-30/2-4		X		
8531			2oz	2	AFTC-31/2-4			X	MeOH
—			8oz	1	AFTC-31/2-4		X		
					SUBTOTAL				TOTAL

CHAIN OF CUSTODY RECORD

SAMPLER: (SIGNATURE)	DATE
[signature]	4/19/95

COMMENTS

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	4/19/95				
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY: BY: (SIGNATURE) M. R. / DATE/TIME 4/24 11:35

TABLE 1

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

BORING	SAMPLE ID	B (PPB)	T (PPB)	EB (PPB)	MPX (PPB)	OX (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

ANATECH
Laboratories

a Division of
CT&E Environmental
Services Inc.

Analytical Report

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

10 pages including cover sheet

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

ANATECH Laboratories

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CT&E Environmental
Services Inc.

Dames & Moore

Sample:	51782-6855	Matrix:	Soil
Client Sample:	AFTC-4-2	Location:	
COLLECTED:	03/30/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	1.4	mg/kg	0.1	SW-846 Mtd. 7421	04/12/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	86.3	%	0.1	Standard Mtd. 2540G	04/04/1995 PL
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/kg	15	SW-846 Mtd. 8020	04/10/1995 RJW
1,3,5-trimethylbenzene	ND	ug/kg	5	"	04/10/1995 RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5	"	04/10/1995 RJW
Benzene	ND	ug/kg	5	"	04/10/1995 RJW
Toluene	ND	ug/kg	5	"	04/10/1995 RJW
Ethylbenzene	ND	ug/kg	5	"	04/10/1995 RJW
1,2,4-trimethylbenzene	ND	ug/kg	5	"	04/10/1995 RJW
			Note: Results are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	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

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

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	51782-6856	Matrix:	Soil
Client Sample:	AFTC-10-2	Location:	
COLLECTED:	03/30/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	2.5	mg/kg	0.1	SW-846 Mtd. 7421	04/12/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	92.8	%	0.1	Standard Mtd. 2540G	04/04/1995 PL
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	75,000	ug/kg	300	SW-846 Mtd. 8020	04/10/1995 JA
1,3,5-trimethylbenzene	53,300	ug/kg	100	"	04/10/1995 JA
Methyl Tertiary Butyl Ether	ND	ug/kg	100	"	04/10/1995 JA
Benzene	600	ug/kg	100	"	04/10/1995 JA
Toluene	1600	ug/kg	100	"	04/10/1995 JA
Ethylbenzene	2200	ug/kg	100	"	04/10/1995 JA
1,2,4-trimethylbenzene	32,800	ug/kg	100	"	04/10/1995 JA
			Note: Results are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	4200	mg/kg	1000	Wisconsin GRO	04/10/1995 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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Ludington, Michigan 49431
616-843-1877
FAX: 616-845-9942

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	51782-6857	Matrix:	Soil
Client Sample:	AFTC-22-2	Location:	
COLLECTED:	03/31/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Lead (GFAA)	2.8	mg/kg	0.1	SW-846 Mtd. 7421	04/12/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	93.6	%	0.1	Standard Mtd. 2540G	04/04/1995 PL
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	ND	ug/kg	15	SW-846 Mtd. 8020	04/10/1995 RJW
1,3,5-trimethylbenzene	ND	ug/kg	5	"	04/10/1995 RJW
Methyl Tertiary Butyl Ether	ND	ug/kg	5	"	04/10/1995 RJW
Benzene	ND	ug/kg	5	"	04/10/1995 RJW
Toluene	ND	ug/kg	5	"	04/10/1995 RJW
Ethylbenzene	ND	ug/kg	5	"	04/10/1995 RJW
1,2,4-trimethylbenzene	ND	ug/kg	5	"	04/10/1995 RJW
			Note: Results are reported on a dry weight basis.		
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	mg/kg	10	Wisconsin GRO	04/10/1995 LS
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 04/18/1995

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

ANATECH laboratories

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Services Inc.

Dames & Moore

Sample:	51782-6858	Matrix:	Water
Client Sample:	AFTC Field Blank	Location:	
COLLECTED:	03/31/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	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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Ludington, Michigan 49431
616-843-1877
FAX: 616-845-9942

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	51782-5859	Matrix:	Water
Client Sample:	Trip Blank	Location:	
COLLECTED:	03/24/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	Lab prepped

Test Description	Result	Unit	Reporting Detection 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	"	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
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/12/1995 JA

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 04/18/1995

DAMES & MOORE

13255 West Bluemound Road, Suite 202
Brookfield, Wisconsin 53005
(414) 782-7281 FAX: (414) 782-7289

Lab ANATECH

Chain of Custody Seal # 0001038

Turnaround Time
☐ Rush (preapproved by Lab)
☑ Normal * see cmnt about PVOC hold time

PROJECT NAME: AFTC
PROJECT #: 07724-009
Send Results To:
PROJECT MANAGER: Jeff Danko
BILL TO: D&M

SHIPPING DETAILS:
Method of Shipment: UPS
Contents Temperature: ____ C
Comments: ____

LAB USE ONLY	DATE	SAMPLE TIME	CONTAINERS	No.	SAMPLE ID	SAMPLE TYPE	PVOC	GRO	Total Pb	REMARKS/PRESERVATIVES
6855	3/30		60ml gl	1	AFTC-4-2/MAR95	SOIL	X			MeOH
			4oz gl	1			X	X		unpreserved
6856			60ml gl	1	AFTC-10-2/MAR95		X			MeOH
			4 oz gl	1			X	X		unpreserved
6857	3/31		60ml gl	2	AFTC-22-2/MAR95		X			MeOH
			4oz gl	1			X	X		unpreserved
6858			60ml gl	1	AFTC Field Blank	MeOH	X			MeOH
6859	3-24		40ml gl	2	AFTC Trip Blank	H_2O	X			HCl
6860			↓	↓	AFTC-9/MAR95	↓	X			unpreserved *
6861					AFTC-24/MAR95		X			↓
6862					AFTC-25/MAR95		X			
6863	↓	↓	↓	↓	AFTC-26/MAR95	↓	X			
						SUBTOTAL (EXCEPT TRIP BLANKS)				TOTAL

ANALYSIS REQUESTED

CHAIN OF CUSTODY RECORD

SAMPLER: (SIGNATURE)	DATE
	3/3/95

COMMENTS
* ALL H_2O SAMPLES UNPRESERVED; PLS DO PVOC ANALYSES < 7 DAYS!
→ CALL PM BEFORE GCMS CONFIRMATION SAMPLING

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
	7/3/95 1730	
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

2 unused GRO's enclosed (w MeOH)

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

ANATECH
Laboratories

a Division of
CT&E Environmental
Services Inc.

Analytical Report

Lab I.D. : 51782
Report Date : 04/18/1995
Project : Dames & Moore - #07724-009
Client : Dames & Moore

13255 West Bluemound Road

Brookfield, WI 53005

Attention : Mr. Jeff Danko

10 pages including cover sheet

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

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Dames & Moore

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

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	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 JA
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

Maria G. Bissell

Reported : 04/18/1995

1200 Conrad Industrial Drive
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FAX: 616-845-9942

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Dames & Moore

Sample:	51782-6861	Matrix:	Water
Client Sample:	AFTC-24	Location:	
COLLECTED:	03/31/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

Test Description	Result	Unit	Reporting Detection 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	"	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
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/12/1995 JA

Analyzed by GC/MS.

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 04/18/1995

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FAX: 616-845-9942

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Sample:	51782-6862	Matrix:	Water
Client Sample:	AFTC-25	Location:	
COLLECTED:	03/31/1995 :	Project:	Dames & Moore - #07724-009
RECEIVED:	04/03/1995 10:58	Sampled By:	

Test Description	Result	Unit	Reporting Detection 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	"	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
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/12/1995 JA

Analyzed by GC/MS.

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 04/18/1995

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Dames & Moore

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

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Xylenes (Total)	490	ug/L	3	SW-846 Mtd. 8020	04/12/1995 JA
1,3,5-trimethylbenzene	55	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	1	"	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

L Rec# 21182

DAMES & MOORE

13255 West Bluemound Road, Suite 202
Brookfield, Wisconsin 53005
(414) 782-7281 FAX: (414) 782-7289

Lab ANATECH

Chain of Custody Seal # 0001038

Turnaround Time
☐ Rush (preapproved by Lab)
☑ Normal * see cmt about PVOC hold time

PROJECT NAME: [redacted] AFTC

PROJECT #: 07724-009

Send Results To:
PROJECT MANAGER: Jeff Danko
BILL TO: D&M

SHIPPING DETAILS:
Method of Shipment: UPS
Contents Temperature: ____ C
Comments:

LAB USE ONLY	DATE	SAMPLE TIME	CONTAINERS	No.	SAMPLE ID	SAMPLE TYPE	PVOC	GRO	Total Pb			REMARKS/PRESERVATIVES
							ANALYSIS REQUESTED					
6855	3/30		60ml gl	1	AFTC-4-2/MAR95	SOIL		X				MeOH
			4oz gl	1			X		X			unpreserved
6856			60ml gl	1	AFTC-10-2/MAR95			X				MeOH
			4oz gl	1			X		X			unpreserved
6857	3/31		60ml gl	2	AFTC-22-2/MAR95			X				MeOH
			4oz gl	1			X		X			unpreserved
6858			60ml gl	1	AFTC Field Blank	MeOH		X				MeOH
6859	3-24		40ml gl	2	AFTC Trip Blank	H_2O	X					HCl
6860					AFTC-9/MAR95		X					unpreserved *
6861					AFTC-24/MAR95		X					
6862					AFTC-25/MAR95		X					
6863					AFTC-26/MAR95		X					
												TOTAL

CHAIN OF CUSTODY RECORD

SAMPLER: (SIGNATURE)	DATE
[signature]	3/31/95

COMMENTS
* ALL H_2O SAMPLES UNPRESERVED; PLS DO PVOC ANALYSES < 7 DAYS!
→ CALL PM BEFORE GCMS CONFIRMATION SAMPLING

(EXCEPT TRIP BLANKS) SUBTOTAL

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	7/31/1730	
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

2 unused GRO's enclosed (w MeOH)

TABLE 1

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

BORING	SAMPLE ID	B (PPB)	T (PPB)	EB (PPB)	MPX (PPB)	OX (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

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FAX: 616-845-9942

ANATECH
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Services Inc.

RECEIVED MAY 0 8 1995

Analytical Report

Lab I.D. :	52198
Report Date :	05/03/1995
Project :	07724-012
Client :	Dames & Moore
	13255 West Bluemound Road
	Brookfield, WI 53005
Attention :	Mr. Jeff Danko

9 pages including cover sheet

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

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52198-8519	Matrix:	Water
Client Sample:	AFTC-1	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	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	05/02/1995 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	"	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/28/1995 OY
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 05/03/1995

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FAX: 616-845-9942

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52198-8520	Matrix:	Water
Client Sample:	AFTC-2a	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	Sampled By:	KK

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
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	"	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 Fraction)					
Gasoline Range Organics	24	mg/L	10	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissett

Reported : 05/03/1995

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FAX: 616-845-9942

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Dames & Moore

Sample:	52198-8521	Matrix:	Water
Client Sample:	AFTC-2b	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	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	"	04/28/1995 OY
Methyl Tertiary Butyl Ether	4	ug/L	1	"	04/28/1995 OY
Benzene	3	ug/L	1	"	04/28/1995 OY
Toluene	1	ug/L	1	"	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
			NOTE: Results were confirmed by GC/MS.		
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 05/03/1995

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FAX: 616-845-9942

ANATECH Laboratories

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Dames & Moore

Sample:	52198-8522	Matrix:	Water
Client Sample:	AFTC-27	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	Sampled By:	KK

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

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 05/03/1995

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616-843-1877
FAX: 616-845-9942

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52198-8523	Matrix:	Water
Client Sample:	AFTC-28	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	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	"	04/28/1995 OY
1,2,4-trimethylbenzene	870	ug/L	100	"	04/28/1995 OY
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	62	mg/L	10	Wisconsin GRO	05/01/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 05/03/1995

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ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52198-8524	Matrix:	Water
Client Sample:	AFTC-29	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	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	"	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
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 05/03/1995

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ANATECH Laboratories

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Dames & Moore

Sample:	52198-8525	Matrix:	Water
Client Sample:	AFTC-30	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	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	300	SW-846 Mtd. 8020	04/28/1995 OY
1,3,5-trimethylbenzene	140	ug/L	100	"	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	"	04/28/1995 OY
Ethylbenzene	ND	ug/L	100	"	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	100	"	04/28/1995 OY
Gasoline Range Organics (Volatile 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

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Ludington, Michigan 49431
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FAX: 616-845-9942

ANATECH Laboratories

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Services Inc.

Dames & Moore

Sample:	52198-8526	Matrix:	Water
Client Sample:	AFTC-31	Location:	
COLLECTED:	04/20/1995 :	Project:	07724-012
RECEIVED:	04/24/1995 10:24	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	05/02/1995 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	"	04/28/1995 OY
1,2,4-trimethylbenzene	ND	ug/L	1	"	04/28/1995 OY
Gasoline Range Organics (Volatile Fraction)					
Gasoline Range Organics	ND	mg/L	0.1	Wisconsin GRO	04/28/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissett

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

ANATECH Laboratories a div. of CT & E Envrionmental Services

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8020 / WIS. GRO
Inst.: Varian 3400 - K
Spiked sample ID: 52198-8519

Analyst: Omer Young
Date Analyzed: 04/28/95
Date Reported: 05/03/95
QC Check lot No.: V1,124,6
Instrument Batch: K28ARP95A

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS 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

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	QC LIMITS RPD	QC LIMITS 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
* GRO units are in mg/L

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

Comments:

ANATECH Laboratories a div. of CT & E Envrionmental Services

METHOD BLANK AND CALIBRATION CHECK

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8020 / WIS. GRO
Inst.: Varian 3400 - K

Analyst: Omer Young
Date Analyzed: 04/28/95
Date Reported: 05/03/95
QC Check lot No.: v1,124,6
Instrument Batch: K28APR95A

COMPOUND	METH. BLANK (ug/L)	QC CHECK CONC. (ug/L)	QC CHECK 1 CONC. (ug/L)	QC CHECK 2 CONC. (ug/L)	QC CHECK 3 CONC. (ug/L)	QC RANGE (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.

NA - Not analyzed.
* - GRO units are mg/L

Comments:

ANATECH Laboratories a div. of CT & E Envrionmental Services

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8020 / EPA Mth. 602
Inst.: Varian 3400 - K
Spiked sample ID: 52268-8869

Analyst: Omer Young
Date Analyzed: 05/02/95
Date Reported: 05/03/95
QC Check lot No.: V1,124,6
Instrument Batch: K01MAY95A

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS 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

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	QC LIMITS 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.

Values outside of QC limits

Comments:

ANATECH Laboratories a div. of CT & E Envrionmental Services

METHOD BLANK AND CALIBRATION CHECK

Lab Name: CT & E, Ludington
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

COMPOUND	METH. BLANK (ug/L)	QC CHECK CONC. (ug/L)	QC CHECK 1 CONC. (ug/L)	QC CHECK 2 CONC. (ug/L)	QC CHECK 3 CONC. (ug/L)	QC RANGE (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:

ANATECH Laboratories a div. of CT & E Envrionmental Services

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT & E, Ludington
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

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS 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

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC LIMITS 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:

ANATECH Laboratories a div. of CT & E Envrionmental Services

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H
Matrix: Water
Spike level: 50 ug/L

Analyst: Rob Wilson
Date Analyzed: 05/02/95
Date Reported: 05/03/95
Spike lot No.: V1,119,5
Instrument Batch: H02MAY95

Compound	METH BLANK (ug/L)	AvgRRF	CCRRF	%D	MIN RRF	MAX %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%		
Tetrachloroethene	<1	0.457	0.479	-4.8%		
1,3-Dichloropropane	<1	0.627	0.604	3.7%		

ANATECH Laboratories a div. of CT & E Envrionmental Services

VOLATILE METHOD BLANK AND CONTINUING CALIBRATION CHECK

Lab Name: CT & E, Ludington
Method: SW-846 Mth. 8060 / 8240
Instrument: HP 5972 GC/MS - H
Matrix: Water
Spike level: 50 ug/L

Analyst: Rob Wilson
Date Analyzed: 05/02/95
Date Reported: 05/03/95
Spike lot No.: V1,119,5
Instrument Batch: H02MAY95

Compound		AvgRRF	CCRRF	%D	MIN RRF	MAX %D
Dibromochloromethane	<1	0.444	0.419	5.6%		
Chlorobenzene	<1	1.045	1.020	2.4%	0.3	
1,1,1,2-Tetrachloroethane	<1	0.391	0.383	2.0%	0.3	
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%		
Styrene	<1	1.231	1.277	-3.7%		
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-Isopropyltoluene	<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

m/e	ION ABUNDANCE CRITERIA	% RELATIVE 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

CDAM04 (Jab Kit 52140

DAMES & MOORE

13255 West Bluemound Road, Suite 202
Brookfield, Wisconsin 53005
(414) 782-7281 FAX: (414) 347-0288

Lab Anatech

Chain of Custody Seal # _____ # _____

Turnaround Time
☐ Rush (preapproved by Lab)
☒ Normal

SHIPPING DETAILS:
Method of Shipment _____
Contents Temperature _____ C
Comments _____

PROJECT NAME: _____
PROJECT #: 07724-012
Send Results To:
PROJECT MANAGER: Jeff Danko
BILL TO: DuM

LAB USE ONLY	DATE	SAMPLE TIME	CONTAINERS	No.	SAMPLE ID	SAMPLE TYPE	ANALYSIS REQUESTED: PVOC	GRO	Diss Lead			REMARKS/PRESERVATIVES
8519	4/20/95		40ml/250ml	4/1	AFTC-1/Apr.95	wtr	X	X	X			HCl / HNO3
8520				3/1	AFTC-2a/Apr.95		X	X	X			
8521				3/1	AFTC-2b/Apr.95		X	X	X			
8522				3/1	AFTC-27/Apr.95		X	X	X			
8523				3/1	AFTC-28/Apr.95		X	X	X			
8524				4/1	AFTC-29/Apr.95		X	X	X			
8525				3/1	AFTC-30/Apr.95		X	X	X			
8526				3/1	AFTC-31/Apr.95		X	X	X			
						SUBTOTAL						TOTAL

CHAIN OF CUSTODY RECORD

SAMPLER: (SIGNATURE)	DATE
Dick Dayhoff	4/20/95

COMMENTS (Disregard - turn all) MR
Analyze vials for PVOC results first. Following confirmed PVOC results, analyze for GRO.
CONFIRM LOW LEVEL PVOC - hits per Jeff Danko - 4/24/95 MR

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
Dick Dayhoff	4/21/95	
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
		M. R / 4/24 10:30

M.R

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: Ansul Fire Technology Center	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: AFTC-27
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ___ ___ ___ Long. ___ ___ ___ or	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒11; Piezometer ☐12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 04/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 13 T. 31 N, R. 27 ☐E. ☒W.	Well Installed By: (Person's Name and Firm): Gary Wellner / Midwest Engineering Ser
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☒ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 613.23 ft. MSL
B. Well casing, top elevation 612.95 ft. MSL
C. Land surface elevation 613.2 ft. MSL
D. Surface seal, bottom 611.2 ft. MSL or 2.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

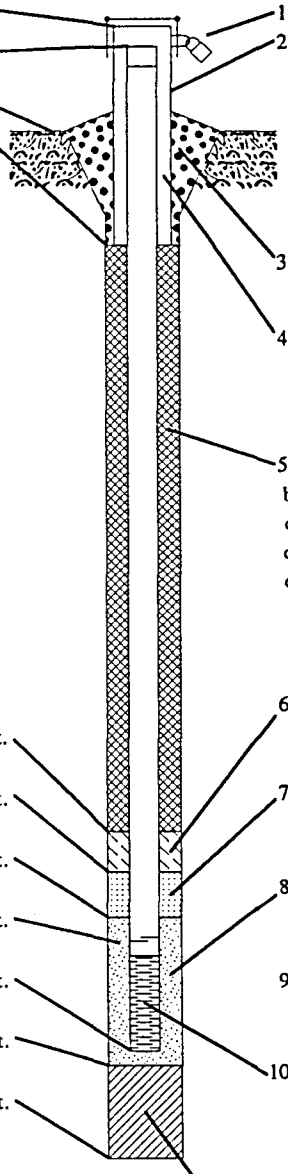
14. Drilling method used: Rotary ☐50; Hollow Stem Auger ☐41; _____ Other ☐

15. Drilling fluid used: Water ☐02 Air ☐01 Drilling Mud ☐03 None ☐99

16. Drilling additives used? ☐ Yes ☐ No
Describe _____

17. Source of water (attach analysis):

E. Bentonite seal, top 612.2 ft. MSL or 1.0 ft.
F. Fine sand, top 611.2 ft. MSL or 2.0 ft.
G. Filter pack, top 610.7 ft. MSL or 2.5 ft.
H. Screen joint, top 610.2 ft. MSL or 3.0 ft.
I. Well bottom 600.2 ft. MSL or 13.0 ft.
J. Filter pack, bottom 600.2 ft. MSL or 13.0 ft.
K. Borehole, bottom 600.2 ft. MSL or 13.0 ft.
L. Borehole, diameter 8 1/4 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.00 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒04; _____ Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Geocap & Keyed lock
3. Surface seal: Bentonite ☐30; Concrete ☒01; _____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☒30; Annular space seal ☐; _____ Other ☐
5. Annular space seal: a. Granular Bentonite ☒33
b. _____ Lbs/gal mud weight . . Bentonite-sand slurry ☐35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐31
d. _____ % Bentonite . . . Bentonite-cement grout ☐50
e. 1/2 bag Ft³ volume added for any of the above
f. How installed: Tremie ☐01; Tremie pumped ☐02; Gravity ☒08
6. Bentonite seal: a. Bentonite granules ☒33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. Badger Mining Sand Fine
b. Volume added 1/2 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5.5 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☒23; Flush threaded PVC schedule 80 ☐24; _____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒11; Continuous slot ☐01; _____ Other ☐
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒14; _____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Hoffmann
Firm: DAMES & MOORE
250 East Wisconsin Ave. Suite 1500 Milwaukee, WI 53202
Tel: (414) 782-7281
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
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: Ansul Fire Technology Center	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: AFTC-28
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒11; Piezometer ☐12	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 13, T. 31 N, R. 27 ☐E. ☒W.	Date Well Installed: 04/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Gary Wellner / Midwest Engineering Ser
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation 613.06 ft. MSL
B. Well casing, top elevation 612.70 ft. MSL
C. Land surface elevation 613.1 ft. MSL
D. Surface seal, bottom 611.1 ft. MSL or 2.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

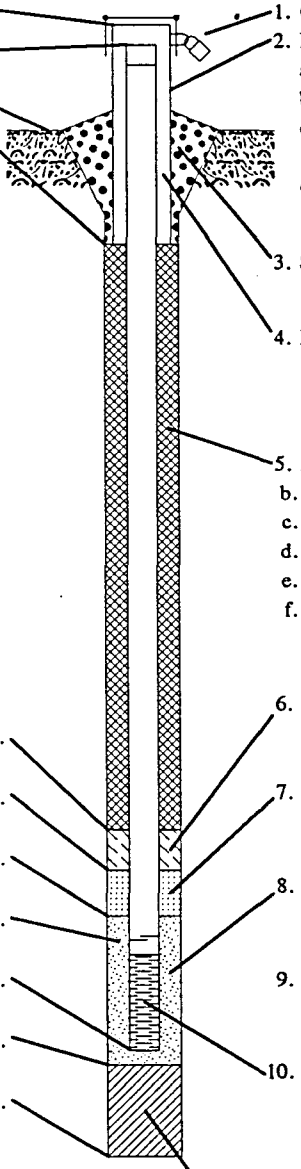
14. Drilling method used: Rotary ☐50; Hollow Stem Auger ☐41; _____ Other ☐

15. Drilling fluid used: Water ☐02 Air ☐01 Drilling Mud ☐03 None ☐99

16. Drilling additives used? ☐ Yes ☐ No
Describe _____

17. Source of water (attach analysis):

E. Bentonite seal, top 612.1 ft. MSL or 1.0 ft.
F. Fine sand, top 611.1 ft. MSL or 2.0 ft.
G. Filter pack, top 610.6 ft. MSL or 2.5 ft.
H. Screen joint, top 610.1 ft. MSL or 3.0 ft.
I. Well bottom 600.1 ft. MSL or 13.0 ft.
J. Filter pack, bottom 600.1 ft. MSL or 13.0 ft.
K. Borehole, bottom 600.1 ft. MSL or 13.0 ft.
L. Borehole, diameter 8 1/4 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.00 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒ 04; _____ Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Geocap & Keyed lock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; _____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; _____ Other ☐
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 1/2 bag Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. Badger Mining Sand Fine
b. Volume added 1/2 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 3.5 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14; _____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Dahlhamer
Firm: DAMES & MOORE
250 East Wisconsin Ave. Suite 1500 Milwaukee, WI 53202
Tel: (414) 782-7281
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
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: Ansul Fire Technology Center	Local Grid Location of Well: ☐N. _____ ft. ☐S. ☐E. _____ ft. ☐W.	Well Name: AFTC-29
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒11; Piezometer ☐12	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 13, T. 31 N, R. 27 ☐E. ☒W.	Date Well Installed: 04/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☒ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm): Gary Wellner; Midwest Engineering Ser
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 615.01 ft. MSL
C. Land surface elevation 612.4 ft. MSL
D. Surface seal, bottom 610.4 ft. MSL or 2.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

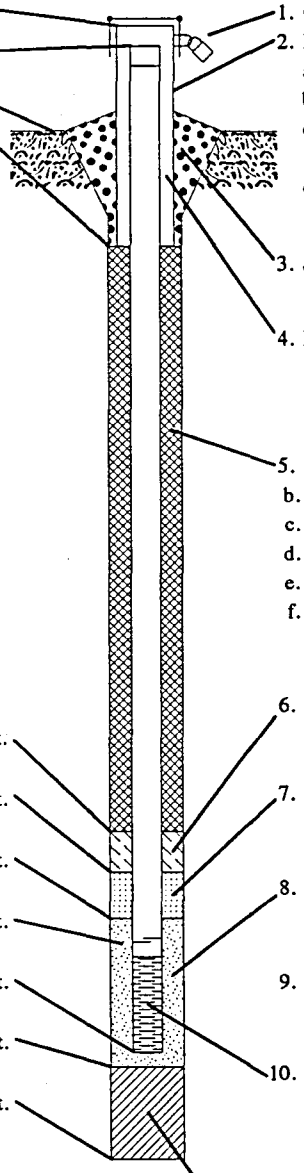
14. Drilling method used: Rotary ☐50; Hollow Stem Auger ☐41; _____ Other ☐

15. Drilling fluid used: Water ☐02 Air ☐01 Drilling Mud ☐03 None ☐99

16. Drilling additives used? ☐ Yes ☐ No
Describe _____

17. Source of water (attach analysis):

E. Bentonite seal, top 611.4 ft. MSL or 1.0 ft.
F. Fine sand, top 610.4 ft. MSL or 2.0 ft.
G. Filter pack, top 609.9 ft. MSL or 2.5 ft.
H. Screen joint, top 609.4 ft. MSL or 3.0 ft.
I. Well bottom 599.4 ft. MSL or 13.0 ft.
J. Filter pack, bottom 599.4 ft. MSL or 13.0 ft.
K. Borehole, bottom 599.4 ft. MSL or 13.0 ft.
L. Borehole, diameter 8 1/4 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.00 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Geocap & Keyed lock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; Other ☐
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 1 bag Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. Badger Mining Sand Fine
b. Volume added 1/2 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 3.5 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14; _____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Hammes
Firm: DAMES & MOORE
250 East Wisconsin Ave. Suite 1500 Milwaukee, WI 53202
Tel: (414) 782-7281
Fax: (414) 782-7289

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State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: Ansul Fire Technology Center	Local Grid Location of Well: ☐N. ☐S. _____ ft. ☐E. ☐W. _____ ft.	Well Name: AFTC-30
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 13, T. 31 N, R. 27 ☐E. ☒W.	Date Well Installed: 04/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☒ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm): Gary Wellner; Midwest Engineering Ser
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation 612.87 ft. MSL

B. Well casing, top elevation 612.41 ft. MSL

C. Land surface elevation 612.9 ft. MSL

D. Surface seal, bottom 610.9 ft. MSL or 2.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; _____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☐ No

Describe _____

17. Source of water (attach analysis):

E. Bentonite seal, top 611.9 ft. MSL or 1.0 ft.

F. Fine sand, top 610.9 ft. MSL or 2.0 ft.

G. Filter pack, top 610.4 ft. MSL or 2.5 ft.

H. Screen joint, top 609.9 ft. MSL or 3.0 ft.

I. Well bottom 599.9 ft. MSL or 13.0 ft.

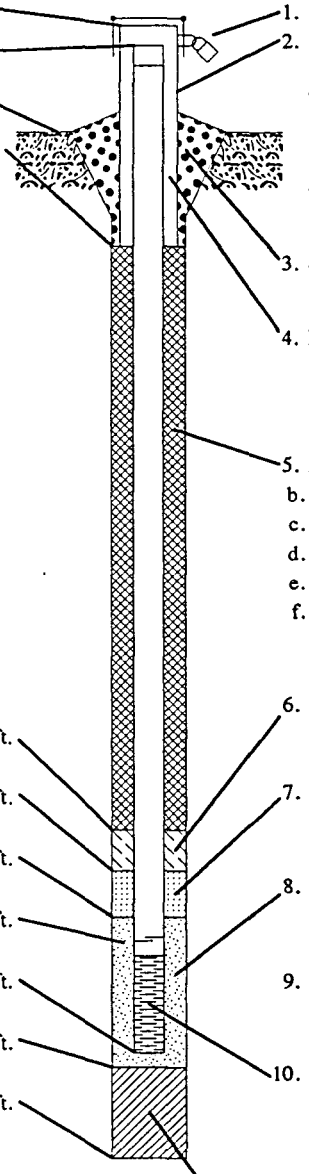
J. Filter pack, bottom 599.9 ft. MSL or 13.0 ft.

K. Borehole, bottom 599.9 ft. MSL or 13.0 ft.

L. Borehole, diameter 8 1/4 in.

M. O.D. well casing 2.25 in.

N. I.D. well casing 2.00 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒ 04; Other ☐ _____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Geocap & Keyed lock

3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; _____ Other ☐

4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; _____ Other ☐

5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 1/2 bag Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
a. Badger Mining Sand Fine
b. Volume added 1/2 bag ft³

8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5 bags ft³

9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☒ 14; _____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Kirk L. Stapleman

Firm: DAMES & MOORE
250 East Wisconsin Ave. Suite 1500 Milwaukee, WI 53202
Tel: (414) 782-7281
Fax: (414) 782-7289

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State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: Ansul Fire Technology Center	Local Grid Location of Well: ☐N. _____ ft. ☐S. ☐E. _____ ft. ☐W.	Well Name: AFTC-31
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 04/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 13, T. 31 N, R. 27 ☐E. ☒W.	Well Installed By: (Person's Name and Firm): Gary Wellner; Midwest Engineering Ser
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☒ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 613.59 ft. MSL
B. Well casing, top elevation 613.22 ft. MSL
C. Land surface elevation 613.6 ft. MSL
D. Surface seal, bottom 611.6 ft. MSL or 2.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; _____ Other ☐

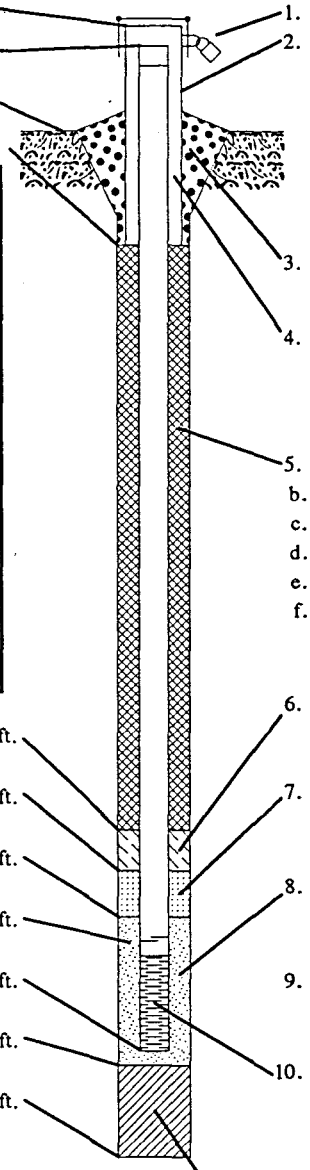
15. Drilling fluid used: Water ☐ 02 Air ☐ 01; Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☐ No

Describe _____

17. Source of water (attach analysis):

E. Bentonite seal, top 612.6 ft. MSL or 1.0 ft.
F. Fine sand, top 611.6 ft. MSL or 2.0 ft.
G. Filter pack, top 611.1 ft. MSL or 2.5 ft.
H. Screen joint, top 610.6 ft. MSL or 3.0 ft.
I. Well bottom 600.6 ft. MSL or 13.0 ft.
J. Filter pack, bottom 600.6 ft. MSL or 13.0 ft.
K. Borehole, bottom 626.6 ft. MSL or 13.0 ft.
L. Borehole, diameter 8 1/4 in.
M. O.D. well casing 2.25 in.
N. I.D. well casing 2.00 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _____ in.
b. Length: _____ ft.
c. Material: Steel ☒ 04; _____ Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Geocap & Keyed lock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; _____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30; Annular space seal ☐; _____ Other ☐
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 1/2 bag Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. Badger Mining Sand Fine
b. Volume added 1/2 bag ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 3 bags ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; _____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14; _____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dirk L. Dykhamma
Firm: DAMES & MOORE
250 East Wisconsin Ave. Suite 1500 Milwaukee, WI 53202
Tel: (414) 782-7281
Fax: (414) 782-7289

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State of Wisconsin
Department of Natural Resources

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

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County	Well Name
Ansul Fire Technology Center	Marinette	AFTC-27

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	38		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well: 130 min.

4. Depth of well (from top of well casing): 13.0 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 85.0 gal.

7. Volume of water removed from well: 85.0 gal.

8. Volume of water added (if any): gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	4.16 ft.	4.06 ft.
Date	b.	04/20/95	04/20/95
Time	c.	8:45 ☒ a.m. ☐ p.m.	9:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		inches	inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)		Chocolate brown, sandy, stagnant odor	
14. Total suspended solids		mg/l	mg/l
15. COD		mg/l	mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Kirk L. Kapfhammer

Firm: Dames & Moore

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Kirk L. Kapfhammer

Print Initials: K L K

Firm: DAMES & MOORE Milwaukee, WI

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

State of Wisconsin
Department of Natural Resources

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

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County	Well Name
Ansul Fire Technology Center	Marinette	AFTC-28
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
	38	

		Before Development	After Development
1. Can this well be purged dry?		☐ Yes ☒ No	
2. Well development method:			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	☒ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed, and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped only	☐ 51		
pumped slowly	☐ 50		
other _____	☐		
3. Time spent developing well		120 min.	
4. Depth of well (from top of well casing)		13.0 ft.	
5. Inside diameter of well		2.00 in.	
6. Volume of water in filter pack and well casing		80.0 gal.	
7. Volume of water removed from well		80.0 gal.	
8. Volume of water added (if any)		gal.	
9. Source of water added _____			
10. Analysis performed on water added? (If yes, attach results)		☐ Yes ☐ No	
11. Depth to Water (from top of well casing)	a.	5.18 ft.	5.08 ft.
Date	b.	04/20/95	04/20/95
Time	c.	8:45 ☒ a.m. ☐ p.m.	9:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		inches	inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)		Silty, oily water, brown black, strong HC odor and product	Silty, oily water brown black, strong HC odor and product
Fill in if drilling fluids were used and well is at solid waste facility:			
14. Total suspended solids		mg/l	mg/l
15. COD		mg/l	mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Kirk L. Kapfhammer

Firm: Dames & Moore

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Kirk L. Kapfhammer

Print Initials: K L K

Firm: DAMES & MOORE Milwaukee, WI

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

State of Wisconsin
Department of Natural Resources

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

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County	Well Name
Ansul Fire Technology Center	Marinette	AFTC-29
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
	38	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well 135 min.

4. Depth of well (from top of well casing) 13.0 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 93.0 gal.

7. Volume of water removed from well 93.0 gal.

8. Volume of water added (if any) gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 6.27 ft.	6.22 ft.
Date	b. 04/20/95	04/20/95
Time	c. 8:45 ☒ a.m. ☐ p.m.	9:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Kirk L. Kapfhammer

Firm: Dames & Moore

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Kirk L. Kapfhammer

Print Initials: K L K

Firm: DAMES & MOORE Milwaukee, WI

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

State of Wisconsin
Department of Natural Resources

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

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County	Well Name
Ansul Fire Technology Center	Marinette	AFTC-30
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
	38	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well: 75 min.

4. Depth of well (from top of well casing): 13.0 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 90.0 gal.

7. Volume of water removed from well: 90.0 gal.

8. Volume of water added (if any): gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	3.56 ft.	3.51 ft.
Date b.	04/20/95	04/20/95
Time c.	8:45 ☒ a.m. ☐ p.m.	9:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Dark greenish gray, sandy, stagnant sewer smell	
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Kirk L. Kapfhammer

Firm: Dames & Moore

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Kirk L. Kapfhammer

Print Initials: KLK

Firm: DAMES & MOORE Milwaukee, WI

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

State of Wisconsin
Department of Natural Resources

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

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County	Well Name
Ansul Fire Technology Center	Marinette	AFTC-31
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
	38	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other _____	☐	

3. Time spent developing well: 125 min.

4. Depth of well (from top of well casing): 13.0 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 85.5 gal.

7. Volume of water removed from well: 100.0 gal.

8. Volume of water added (if any): gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 4.06 ft.	4.02 ft.
Date	b. 04/20/95	04/20/95
Time	c. 8:45 ☒ a.m. ☐ p.m.	9:30 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Orangish, sandy	

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Kirk L. Kapfhammer

Firm: Dames & Moore

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Kirk L. Kapfhammer

Print Initials: KLK

Firm: DAMES & MOORE Milwaukee, WI

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