NEWFIELDS

February 11, 2005

Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Madison, Wisconsin 53711

Attn: Mr. Hank Kuehling

RE: NewFields Project No. 0451-002-800
WDNR BRRTs No. 03-28-176509
Hydrogeologic Site Investigation Status Report
D.B. Oaks Facility, 700-710 Oak Street, Ft. Atkinson, Wisconsin

Dear Mr. Kuehling:

NewFields has prepared this status report for the completion of a hydrogeologic site investigation at the above referenced facility. These activities were completed in accordance with our November 8, 2004 Work Plan. This report includes a brief site history, a description of completed activities, site investigation results, and recommendations for additional site characterization.

1.0 SITE HISTORY

NewFields understands that Thomas Industries previously owned and operated a manufacturing facility at 700 Oak Street in Ft. Atkinson, Wisconsin (see Figure 1). Residential lighting fixtures were manufactured at the facility by Moe Brothers Manufacturing beginning in 1939; Moe Brothers Manufacturing changed its name to Moe Lighting in 1939 and was acquired by Thomas Industries in 1948. Lighting fixtures continued to be manufactured at the facility until 1985 when Thomas sold the facility. The Wand Corporation (Wand) subsequently utilized the facility to manufacture storm doors and windows in 1985, but vacated the building by 1992. Two other businesses (Gross EMO and Wisconsin Packaging Corporation) occupied portions of the property between 1986 and 1994. Miller Machining began operating at a portion of the property in 1994. The building is currently occupied by Miller Machining and Five Alarm Fire and Safety Equipment. The building is owned by D.B. Oaks.

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In an August 28, 1985 letter to Wand, RMT, Inc. identified a 10,000 gallon above ground storage tank (AST) that was used to store tetrachloroethene (PCE), and an 18,000 gallon underground storage tank (UST) that held No. 2 fuel oil. The Wisconsin Department of Natural Resources (WDNR) subsequently performed a generator inspection on March 27, 1986, completed at the time Wand had occupied the property. The inspection was completed by Wendell Wojner of the WDNR and described in an April, 1986 memo. As described in that memo, no hazardous waste was observed during the inspection. The inspection report indicated that the site had been decontaminated prior to remodeling the building. Decontamination included the removal of all hazardous waste stored on site, and the decontamination and removal of wastewater treatment tanks and degreasers. An electroplating line had been dismantled, and a new concrete floor installed; the old concrete floor had also been removed and transported off-site for disposal. A foundation for a large AST remained on site at the rear of the building, but the tank had been removed.

During a March 16, 1994 Phase I Environmental Site Assessment (ESA), Gabriel Midwest could not find evidence of the fuel oil UST. It also observed that the AST that held PCE was gone, and confirmed that the concrete AST cradle remained on-site. In March 1995 ATEC Associates Inc. (ATEC) completed a Phase II ESA of the D.B. Oaks facility to identify potential releases from the former fuel oil UST, PCE AST, and a former 500 gallon gasoline UST; the latter was not identified in previous reports. The Phase II ESA consisted of the collection of soil and groundwater samples from Geoprobe borings. Trace levels of petroleum constituents (ethylbenzene, toluene, and xylenes) along with low concentrations of metals (arsenic, barium, chromium, and lead) were detected in soil and groundwater samples at various locations on the facility property. However, PCE and associated degradation products were detected in soil and groundwater samples along the east and south sides of the facility building. These compounds were detected at concentrations several orders of magnitude above regulatory standards. ATEC described the results of this investigation in a Phase II ESA report dated April, 1995.

The WDNR was subsequently notified of the release. Internal discussions between Thomas Industries and the WDNR subsequently followed. However, further activity was delayed until March 2004. At that time, the WDNR issued a letter requesting an immediate site investigation. The WDNR stated in that letter that the current owner of the property informed the Agency that it never used nor caused a release of PCE during its operations. Consequently, the Agency requested that Thomas Industries complete a site investigation to identify the lateral and vertical extent of subsurface contamination associated with the PCE release.

2.0 COMPLETED SITE ACTIVITIES

NewFields completed a hydrogeologic investigation at the D.B. Oaks facility in accordance with our Work Plan dated November 8, 2004. The hydrogeologic investigation consisted of the installation of five water table observation wells, two piezometers, well development, the collection of one round of groundwater samples for volatile organic compound (VOC) analysis, groundwater elevation measurements, and in-situ permeability tests. A description of these completed actives follows.

Monitoring Wells Installation and Well Development

NewFields coordinated the installation of five water table observation wells and two piezometers at the D.B. Oaks facility between December 8 and 10, 2004. Water table observation wells MW-1 and MW-2 were installed on the south side of the facility building as down gradient monitoring wells. Well MW-3 and MW-4 were installed on the east side of the facility building; well MW-3 was installed down gradient (south) from the former PCE tank adjacent to the facility building, and well MW-4 was installed in the vicinity of the former PCE tank. Well MW-5 was installed on the north side of the facility building up gradient from the former PCE tank. Piezometers MW-2A and MW-4A were installed adjacent to wells MW-2 and MW-4, respectively. Well locations are shown on Figure 2.

All monitoring wells were installed in boreholes advanced with hollow stem augers utilizing a truck mounted rotary drill rig. Soil samples were collected with a split-barrel sampler (split spoon), visually classified in accordance with the Unified Soil Classification System, and recorded on soil boring logs. Soil samples collected from the unsaturated zone were also field screened with a hand held photo-ionization device (PID) equipped with an 11.7 eV lamp. PID field measurements were recorded on soil boring logs. Soil boring logs are included in Appendix A.

Water table observation wells were constructed with two-inch diameter schedule 40 PVC well casings and screens. The water table was encountered between seven and 13 feet below ground surface, and water table observation wells were installed at depths between 13 and 18 feet below ground surface with well screens 10 feet in length placed between six and eight feet below the water table. Piezometers were constructed with well screens five-feet in length at depths 25 feet below the water table observation wells (approximately 40 feet below ground surface). Top of screen and bottom of screen elevations are summarized in Table 1, and well construction forms are also included in Appendix A.

Following well installation monitoring wells were developed by NewFields. Well development was completed by surging and purging ten well casing volumes. Well development forms are included in Appendix A.

Purge water was placed in 55-gallon drums, and temporarily stored on-site. Soil cuttings were also placed in 55-gallon drums and temporarily stored on-site. These drummed materials were subsequently transported off-site for disposal by Onyx. Drilling services were provided by Badger State Drilling Company, Inc. of Stoughton, Wisconsin.

Groundwater Elevations

NewFields surveyed the top of each well casing elevation and ground surface elevation at each well location relative to site datum. Prior to collecting groundwater samples on December 16, 2004, static water levels were measured in all site monitoring wells. Reference elevations, ground surface elevations, depth to water measurements, and groundwater elevations are summarized in Table 1. Groundwater elevations measured on December 16, 2004 are shown on Figure 2.

Groundwater Sample Collection

Groundwater samples were collected on December 16, 2004. Prior to sample collection, four well casing volumes were purged from each well. The purge water was placed in 55 gallon drums along with the well development purge water described above, and temporarily stored until arrangements for disposal can be made. Groundwater samples were collected with bailers equipped with bottom emptying devices; a bailer was dedicated to each well. Laboratory provided containers were filled, held in a cooler on ice, and shipped to a Wisconsin-certified environmental laboratory for analyses. All samples were analyzed for volatile organic compounds (VOCs) by USEPA method 8260. In accordance with WDNR guidance, one duplicate sample and a trip blank were also analyzed for VOCs. Laboratory services were provided by Northern Lakes Service, Inc. of Crandon, Wisconsin. Groundwater monitoring results are summarized in Table 2, and on Figure 4. Laboratory reports are included in Appendix B.

Additionally, field measurements for pH, conductivity, temperature, oxidation-reduction potential, and dissolved oxygen were made at the time of sample collection. Field measurements are also summarized in Table 2.

In-situ Permeability Test

NewFields also performed in-situ hydraulic conductivity tests on each monitoring well to determine the hydraulic conductivity of the soil unit near each monitoring well screen. In-situ hydraulic conductivity tests were performed on December 16, 2004 following groundwater sample collection. These tests were performed by rapidly removing a bailer, or "slug" of water from the well. A pressure transducer in the well and data logger were then used to measure the draw down and subsequent recovery of water elevations in the well. Because the recovery was rapid, two tests were performed at each well.

The hydraulic conductivity around each well screen was then calculated using the Bouwer and Rice Method with USGS provided spread sheets. Hydraulic conductivity estimates are summarized in Table 3, and in-situ hydraulic conductivity test results are included in Appendix C.

3.0 SITE INVESTIGATION RESULTS

A brief description of the hydrogeologic site investigation results follows.

Site Geology

Soil samples collected from water table observation well borings identified interbedded subsurface soil units consisting of clayey silt, silty clay, silt, clayey sand, silty sand, and sand. A fine to medium grained sand unit was encountered beneath these interbedded units to the maximum depth of our investigation in the piezometer borings. At the MW-2A location, interbedded units were encountered to a depth of 28 feet below ground surface (bgs). However, at the MW-4A location, interbedded units were encountered to a depth of 10 feet bgs.
Groundwater Flow Conditions

Hydrogeologic investigation results indicate that the direction of groundwater flow is to the south-southwest. Based on December 16, 2004 groundwater elevations, the horizontal hydraulic gradient is 0.0167 ft/ft. At the MW-2/MW-2A well nest there is an upward vertical gradient of 0.04 ft/ft, and at the MW-4/MW-4A well nest there is a slight downward vertical gradient of 0.001 ft/ft. As shown in Table 3, the average hydraulic conductivity derived from water table observation wells is 3.32 x 10-3 cm/sec, and the average hydraulic conductivity derived from piezometers is 2.28 x 10-2 cm/sec. The average linear velocity of groundwater was calculated from the following equation:

$$v = \frac{ki}{n}$$

where: v = average linear velocity of groundwater
k = hydraulic conductivity
i = horizontal gradient
n = porosity

Assuming a porosity of 25%, the average linear velocity of groundwater is 0.63 feet per day, or approximately 230 feet per year.

Groundwater Quality

These groundwater sample results indicate that tetrachlorothene (PCE) has impacted groundwater quality on the D.B. Oaks property. Although the primary constituent of concern detected in groundwater samples is PCE, degradation, or daughter products of PCE were also detected in groundwater samples. Daughter products of PCE include trichloroethene (TCE), 1,1-dichloroethene (1,1 DCE), cis- and trans- 1,2-dichloroethene (cis DCE and trans DCE), and vinyl chloride. (Other constituents, including benzene, dichlorofluoromethane, and toluene were also detected at low concentrations. Dichlorofluoromethane is likely the result of laboratory contamination. Benzene (6.0 µg/L) and toluene (0.25 µg/L) were detected in the MW-4A sample. Although benzene exceeded the Enforcement Standard (ES), the low detected concentration plus its lack of detection in other samples indicates that benzene should not be considered a constituent of concern at this site.

As shown on Figures 3 and 4, the highest concentrations of total VOCs were detected in the MW-3 sample. Elevated total VOC concentrations were also detected in samples collected from well MW-4 located adjacent to the former PCE tank. In the MW-4 sample, TCE was detected at 10,000 µg/L, and PCE was detected at 2,500 µg/L. In the MW-3 sample, PCE was detected at 34, 000 µg/L, TCE was detected at 17, 000 µg/L, and cisDCE was detected at 6,800 µg/L. These results indicate that the former PCE tank and its appurtenances (i.e. abandoned buried line leading to the facility building) is the likely source for PCE contamination, and that PCE is degrading to TCE and cisDCE with distance from the PCE tank. Between MW-3 and MW-2, PCE concentrations declined from 34,000 µg/L to 120 µg/L, and TCE concentrations declined from 17,000 µg/L to 140 µg/L. However, elevated concentrations of cisDCE were detected in both MW-2 (5,900 µg/L) and MW-3 (6,800 µg/L) samples. Low concentrations of other degradation products including 1,1 DCE (18 µg/L), transDCE (32 µg/L), and vinyl chloride (33 µg/L) were also detected in the MW-2 sample. These results indicate that constituents continue to migrate with distance from the source area.

Although elevated concentrations of chlorinated VOCs were detected in samples collected from wells MW-2, MW-3, and MW-4, low concentrations of chlorinated VOCs were detected in

samples collected from wells MW-1 and MW-5. As shown on Figure 4, this indicates that the chlorinated VOC plume located between the facility building and the railway corridor is elongated in the direction of groundwater flow. Samples collected from piezometers MW-2A and MW-3A indicate that contaminant concentrations decline significantly with depth. As shown in Table 2, PCE (44 µg/L), TCE (69 µg/L), cisDCE (380 µg/L), and vinyl chloride (29 µg/L) were detected in the MW-2A sample. PCE (7.1 µg/L), TCE (23 µg/L), and cisDCE (0.89 µg/L)were also detected in the MW-4A sample. These values show that contaminant concentrations decline by orders of magnitude within 25 feet of the water table.

Because MW-2 is located on the southern property line, and constituents of concern exceed groundwater quality standards at this location, PCE and degradation products have likely migrated off-site. Additional monitoring wells will need to be installed, and additional groundwater samples will need to be collected to further characterize the lateral and vertical extent of the chlorinated VOC plume.

4.0 RECOMMENDATIONS

NewFields recommends that additional monitoring wells be installed at the D.B Oaks facility to further characterize groundwater flow conditions and the lateral and vertical extent of groundwater contamination. A water table well and nested piezometer should be placed between the railway corridor and Oak Street off-site between 600 and 700 feet down gradient from wells MW-2 and MW-2A. A piezometer should also be installed adjacent to well MW-3 to evaluate the vertical extent of subsurface contamination at that location.

NewFields also recommends that soil samples should be collected in the vicinity of the former PCE tank, and in the parking lot/driveway area between the railway corridor and facility building to further characterize this source area. These borings should be advanced in this area in a regular grid pattern (borings on 20 to 30 foot centers). At each boring location, soil samples should be collected every 2.5 feet to a depth of 10 feet, and analyzed for VOCs by a mobile laboratory. The mobile laboratory will provide real-time data, which will allow decisions to be made in the field that will facilitate identification of the lateral extent of subsurface contamination in the unsaturated zone. Figure 5 shows the layout of the proposed investigation.

Supplemental site investigation results and site investigation results presented in this report should be presented in a final site investigation report for submittal to the WDNR. Site investigation results should then be used to evaluate potential remedial responses, including, but not limited to, source removal (i.e. excavation), in-situ treatment, and/or source control (i.e. groundwater extraction, ozone sparging).

Please contact us at (608) 442-5223 should you have any questions.

Sincerely,

NewFields

Mark S. McColloch, P.G.
Senior Geologist

Dave Trainor, P.E., P.G.
Principal

cc: Mr. John Novak, Thomas Industries
Mr. William Mulligan, Davis & Kuelthau, S.C.
Ms. Leah Krider, Foley & Lardner, L.L.P.

Attachments

Table 1	Groundwater Elevations
Table 2	Groundwater Sample Results
Table 3	Summary of In-Situ Hydraulic Conductivity Test Results
Figure 1	Site Location Map
Figure 2	Site Map and Groundwater Elevations
Figure 3	Sample Locations and Summary of VOCs Detected in Groundwater
Figure 4	Total VOC Isoconcentration Contours for Groundwater
Figure 5	Proposed Supplemental Investigation
Appendix A	Soil Boring Logs, Well Construction Forms, and Well Development Forms
Appendix B	Laboratory Reports – Groundwater Samples
Appendix C	In-Situ Hydraulic Conductivity Test Results

TABLES

Table 1
Groundwater Elevations
D.B Oaks Facility, Fort Atkinson, Wisconsin

Well Location	Reference Elevation	Ground Surface Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Depth to Water	Groundwater Elevation
MW-1	97.71	95.7	87.7	77.7	12.77	85.14
MW-2	95.63	95.9	90.4	80.4	10.59	85.04
MW-2A	95.67	95.9	60.9	55.9	10.76	84.91
MW-3	97.81	95.5	92.5	82.5	7.09	90.72
MW-4	103.76	100.5	95.5	85.5	8.11	95.65
MW-4A	103.66	100.5	66.5	61.5	7.99	95.67
MW-5	102.39	100.0	96.0	84.0	7.83	94.56

Groundwater elevations measured on December 16, 2004.
All elevations relative to site datum.

Table2
Groundwater Sample Results – Volatile Organic Compounds (VOCs) and Field Measurements
D.B Oaks Facility, Fort Atkinson, Wisconsin

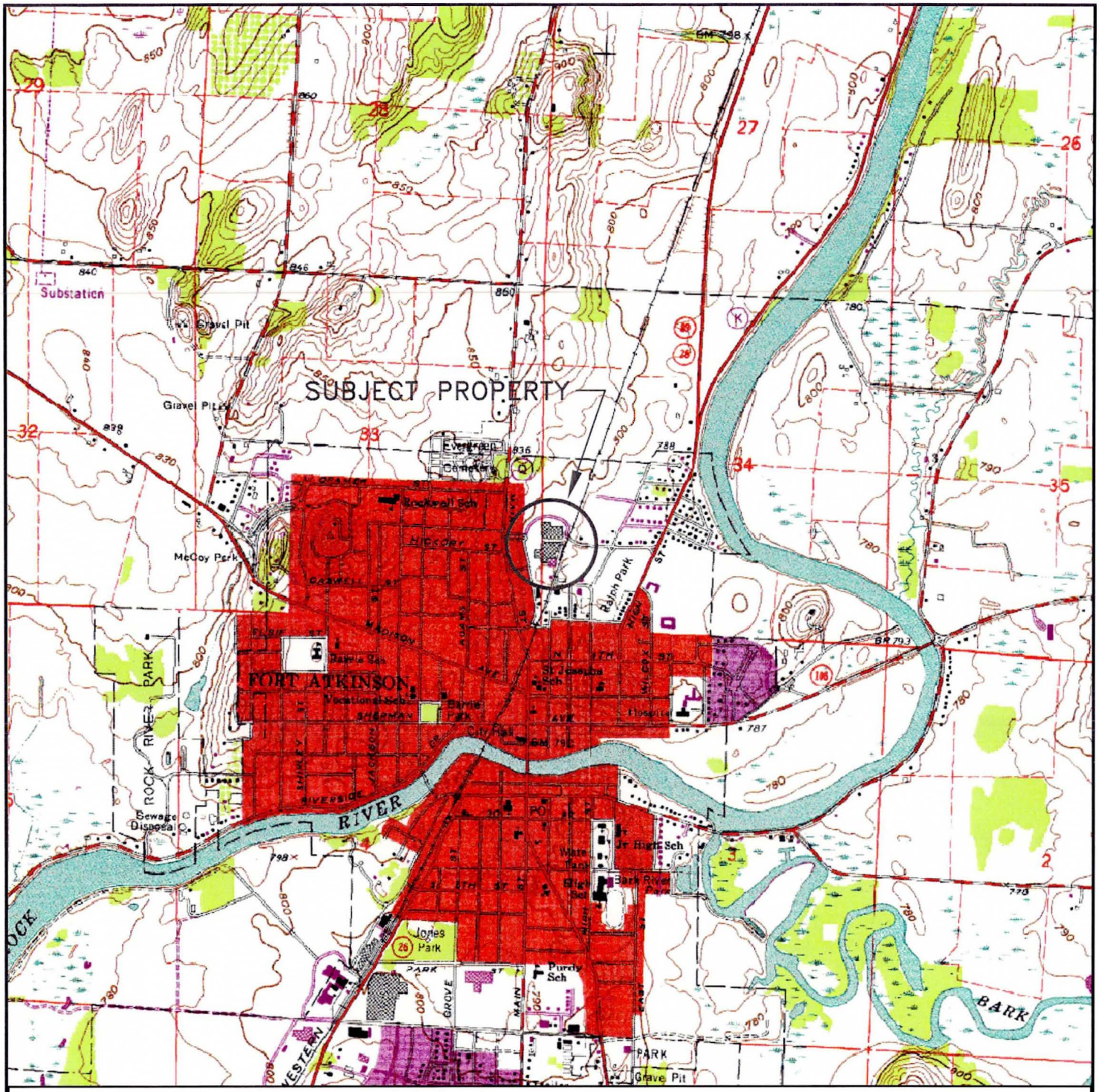
Well Location	Units	MW-1	MW-2	MW-2A	MW-3	MW-4	Dup 1 (MW-4)	MW-4A	MW-5	PAL	ES
VOCs											
Benzene	µg/L	<0.12	<5.8	<5.8	<508	<58	<58	**6.0**	<0.12	0.5	5
Dichlorofluoromethane	µg/L	<0.15	<7.7	<7.7	<770	<77	<77	<0.49>	<0.15	200	1,000
1,1-Dichloroethene	µg/L	<0.24	**<18>**	<12	<1,200	<120	<120	<0.24	<0.24	0.7	7
cis-1,2-Dichloroethene	µg/L	<0.14>	**5,900**	**380**	**6,800**	<66	<66	0.89	<0.21>	7	70
trans-1,2-Dichloroethene	µg/L	<0.11	***32***	<5.4	<540	<54	<54	<0.11	<0.11	20	100
Tetrachloroethene	µg/L	<0.13	**120**	**44**	**34,000**	**2,500**	**2,300**	**7.1**	**2.3**	0.5	5
Toluene	µg/L	<0.20	<10	<10	<1,000	<100	<100	<0.25>	<0.20	200	1,000
Trichloroethene	µg/L	<0.12	**140**	**69**	**17,000**	**10,000**	**8,900**	**23**	**1.2**	0.5	5
Vinyl Chloride	µg/L	<0.16	**33**	**<29>**	<820	<82	<82	<0.16	<0.16	0.02	0.2
Total VOCs	µg/L	**0.14**	**6,243**	**522**	**57,800**	**12,500**	**11,200**	**37.73**	**3.71**	--	--
Field Measurements											
pH	pH Units	7.09	7.5	7.31	7.54	7.49	--	7.38	6.85	--	--
Conductivity	µS	752	937	638	685	656	--	614	1,124	--	--
Temperature	C°	11.8	12.3	10.9	10.6	11.4	--	11.1	10.3	--	--
Oxidation-reduction potential	mV	119	107	90	44	48	--	52	157	--	--
Dissolved oxygen	mg/L	5.24	0.69	1.92	0.22	0.53	--	2.44	3.98	--	--

PAL - Preventive Action Limit per Wisconsin Admin. Code sec. NR 141.10.
ES - Enforcement Standard per Wisconsin Admin. Code sec. NR 141.10.
< - Detected below Limit of Detection.
< > - Detected above Limit of Detection, but below Limit of Quantification
Concentrations exceeding the ES have been shaded.
Concentrations exceeding the PAL are in italics.

Table 3
Summary of In-Situ Hydraulic Conductivity Test Results
D.B Oaks Facility, Fort Atkinson, Wisconsin

Well Location	Trial #1 Hydraulic Conductivity (cm/sec)	Trial #2 Hydraulic Conductivity (cm/sec)	Trial #3 Hydraulic Conductivity (cm/sec)	Water Table Observation Well Average Hydraulic Conductivity (cm/sec)	Piezometer Average Hydraulic Conductivity (cm/sec)
MW-1	3.53×10^{-3}	7.06×10^{-3}	--	5.30×10^{-3}	--
MW-2	1.06×10^{-3}	1.06×10^{-3}	--	1.06×10^{-3}	--
MW-2A	1.69×10^{-2}	1.76×10^{-2}	--	--	1.73×10^{-2}
MW-3	1.76×10^{-3}	2.82×10^{-3}	--	2.29×10^{-3}	--
MW-4	3.53×10^{-3}	7.06×10^{-3}	--	5.30×10^{-3}	--
MW-4A	2.54×10^{-2}	2.96×10^{-2}	2.96×10^{-2}	--	2.82×10^{-2}
MW-5	2.12×10^{-3}	3.18×10^{-3}	--	2.65×10^{-3}	--
			Average	**3.32×10^{-3}**	**2.28×10^{-2}**

FIGURES



BASE MAP SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, FORT ATKINSON, WISCONSIN, DATED 1987.

QUADRANGLE LOCATION

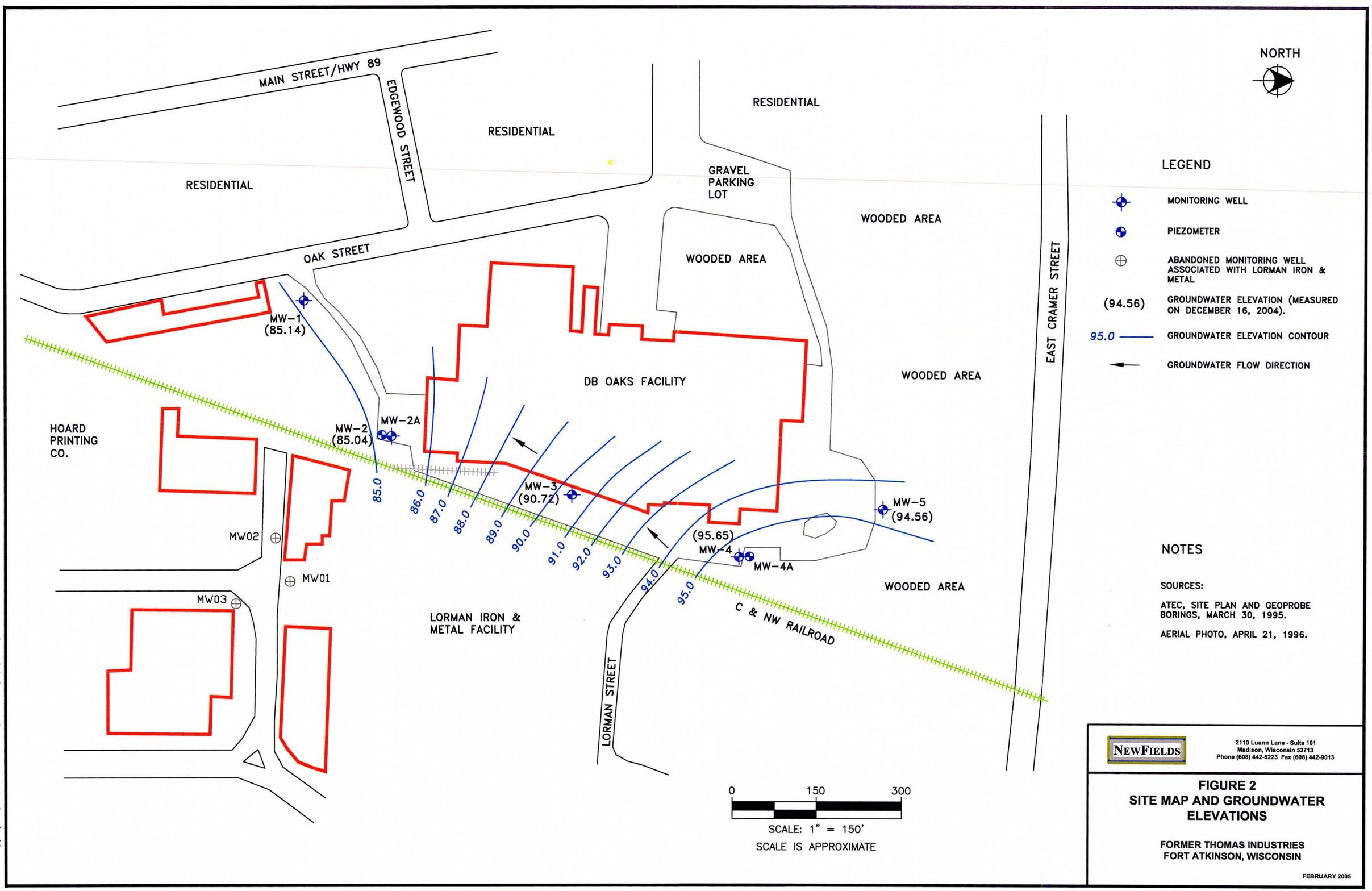
NORTH
SCALE: 1"=2400'

FORMER THOMAS FACILITY
FORT ATKINSON, WISCONSIN

FIGURE 1
SITE LOCATION

DRN. BY DDZ	PROJECT NO. 0451-002-800
DATE 09.FEB.2005	NEWFIELDS

C:\PROJECTS\THOMAS - FT ATKINSON\FIG1



NOTES

SOURCES:

ATEC, SITE PLAN AND GEOPROBE BORINGS, MARCH 30, 1995.

AERIAL PHOTO, APRIL 21, 1996.

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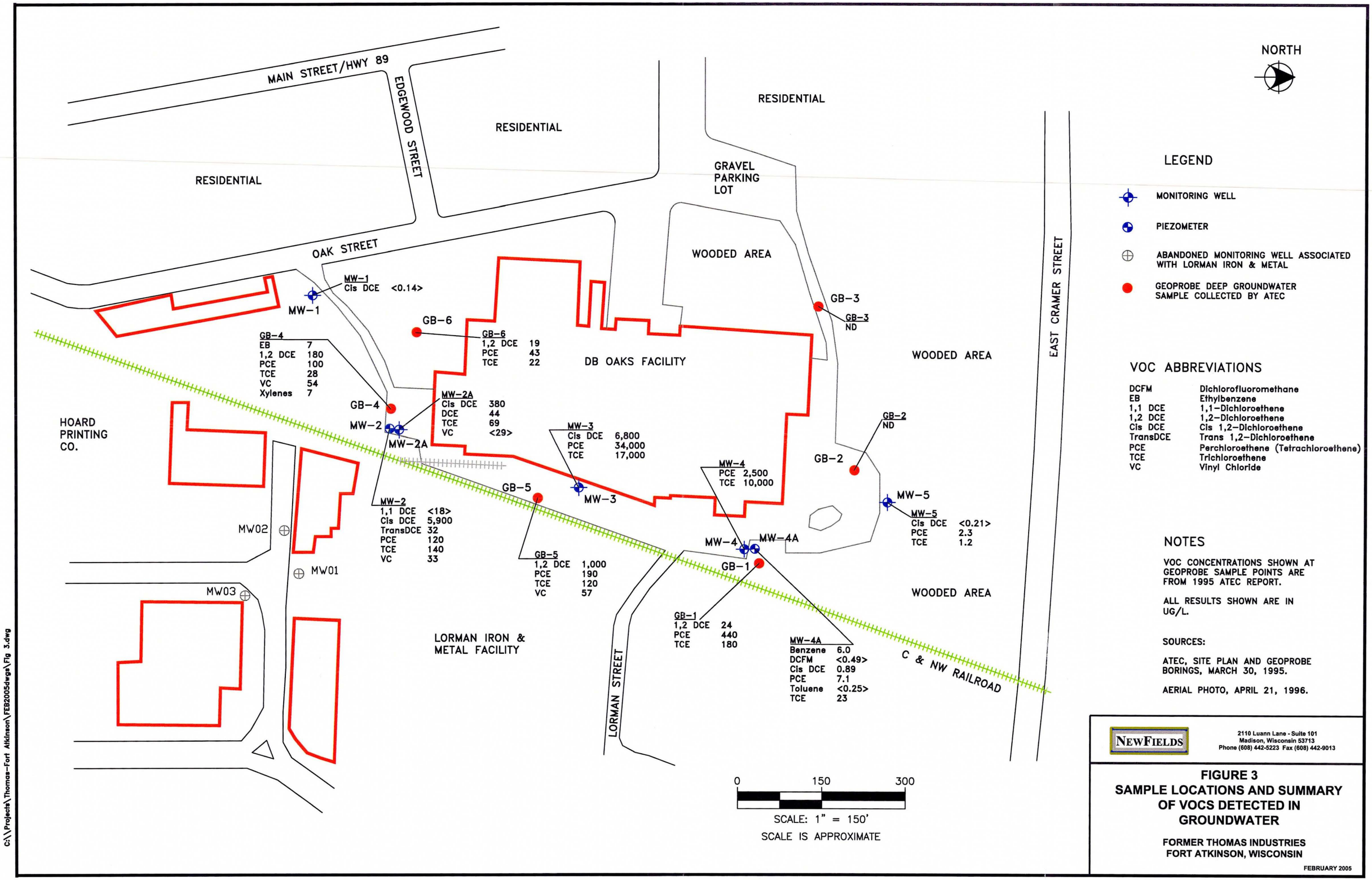
FIGURE 2
SITE MAP AND GROUNDWATER ELEVATIONS

FORMER THOMAS INDUSTRIES
FORT ATKINSON, WISCONSIN

FEBRUARY 2005

C:\Projects\Thomas-Fort Atkinson\FEB2005dwgs\Fig 2.dwg



LEGEND

- MONITORING WELL
- PIEZOMETER
- ABANDONED MONITORING WELL ASSOCIATED WITH LORMAN IRON & METAL
- GEOPROBE DEEP GROUNDWATER SAMPLE COLLECTED BY ATEC

VOC ABBREVIATIONS

DCFM	Dichlorofluoromethane
EB	Ethylbenzene
1,1 DCE	1,1–Dichloroethene
1,2 DCE	1,2–Dichloroethene
Cis DCE	Cis 1,2–Dichloroethene
TransDCE	Trans 1,2–Dichloroethene
PCE	Perchloroethene (Tetrachloroethene)
TCE	Trichloroethene
VC	Vinyl Chloride

NOTES

VOC CONCENTRATIONS SHOWN AT GEOPROBE SAMPLE POINTS ARE FROM 1995 ATEC REPORT.

ALL RESULTS SHOWN ARE IN UG/L.

SOURCES:

ATEC, SITE PLAN AND GEOPROBE BORINGS, MARCH 30, 1995.

AERIAL PHOTO, APRIL 21, 1996.

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FIGURE 3
SAMPLE LOCATIONS AND SUMMARY OF VOCS DETECTED IN GROUNDWATER

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FORT ATKINSON, WISCONSIN

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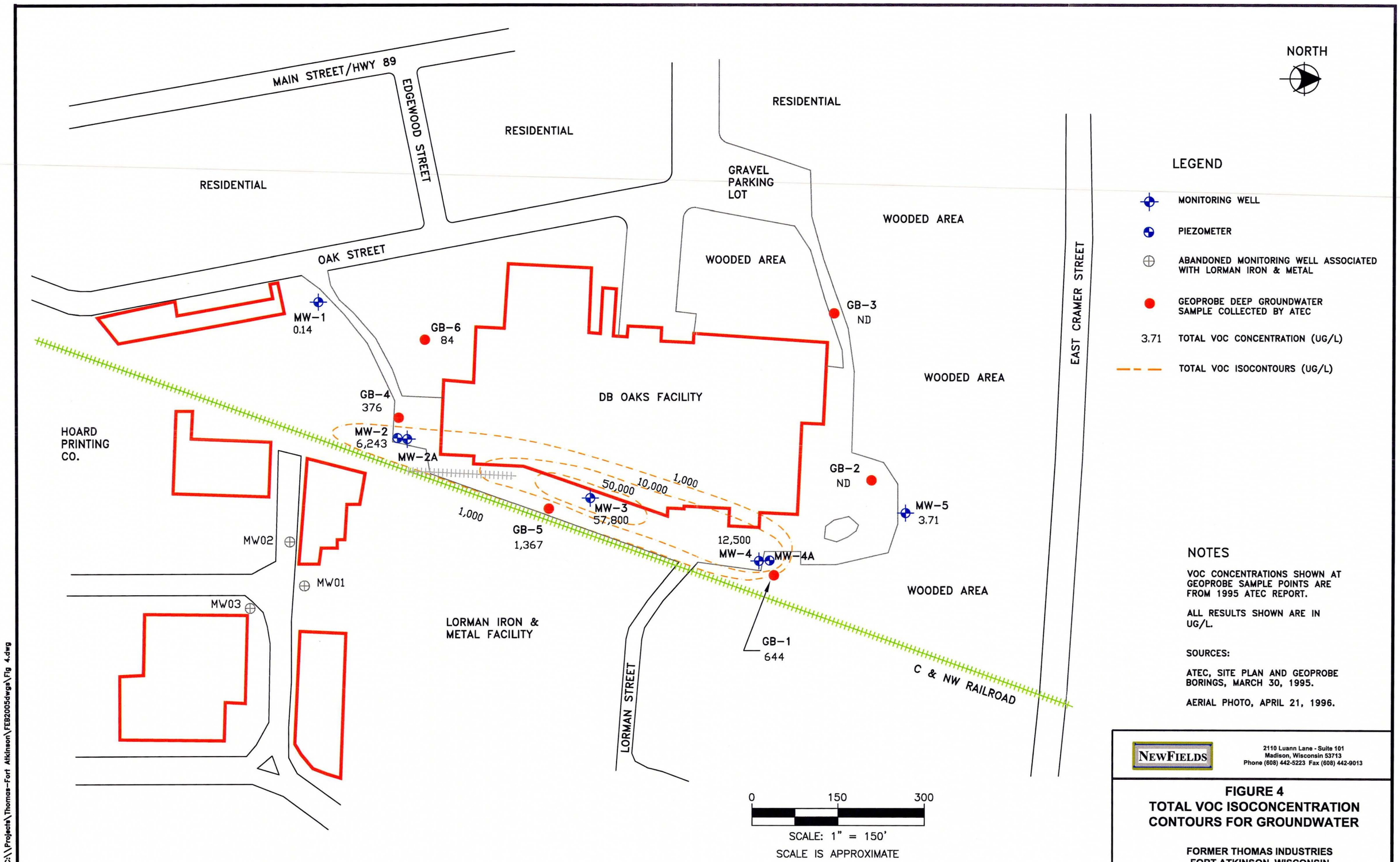
C:\\Projects\Thomas-Fort Atkinson\FEB2005dwge\Fig 3.dwg



NOTES

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FIGURE 4
TOTAL VOC ISOCONCENTRATION CONTOURS FOR GROUNDWATER

FORMER THOMAS INDUSTRIES
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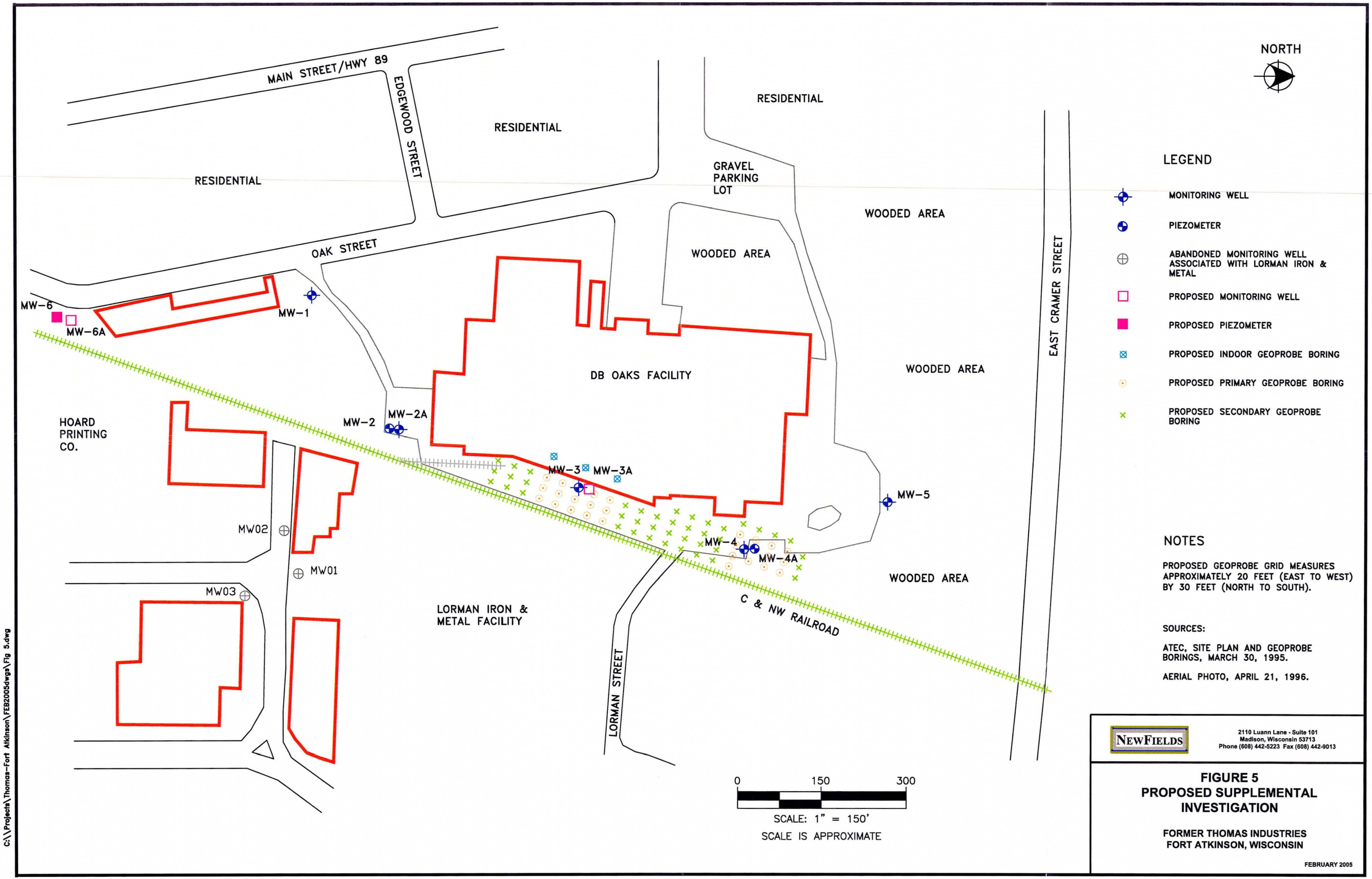

LEGEND

- MONITORING WELL
- PIEZOMETER
- ABANDONED MONITORING WELL ASSOCIATED WITH LORMAN IRON & METAL
- PROPOSED MONITORING WELL
- PROPOSED PIEZOMETER
- PROPOSED INDOOR GEOPROBE BORING
- PROPOSED PRIMARY GEOPROBE BORING
- PROPOSED SECONDARY GEOPROBE BORING

NOTES

PROPOSED GEOPROBE GRID MEASURES APPROXIMATELY 20 FEET (EAST TO WEST) BY 30 FEET (NORTH TO SOUTH).

SOURCES:

ATEC, SITE PLAN AND GEOPROBE BORINGS, MARCH 30, 1995.

AERIAL PHOTO, APRIL 21, 1996.

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FIGURE 5
PROPOSED SUPPLEMENTAL INVESTIGATION

FORMER THOMAS INDUSTRIES
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FEBRUARY 2005

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APPENDIX A

SOIL BORING LOGS, WELL CONSTRUCTION FORMS, AND WELL DEVELOPMENT FORMS

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-1

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 8 / 04 MM DD YY	12 / 8 / 04 MM DD YY	4 ¼" ID HSA Split Spoon

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P P 4 8 9	MW-1	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E / W
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	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	ROD/Comments
			1	SILT, moist, firm, with roots, non-plastic, dark brown	ML									
1	8	3,5 7,9	3	-as above, slightly moist, dark brown				0	12					
2	16	6,6 9,12	5					0	15					
			6	CLAY, silty, trace fine sand, slightly moist, firm, non-plastic, gray	CL-ML									
3	18	7,9 10,12	8	SAND, clayey, fine grained, trace fine subrounded gravel, moist to wet, medium dense, low plasticity, light grayish brown with rust mottles				0	19					
			9	-light brown, wet, soft	SC									
4	20	3,9 6,8	10					0	15					
			11											
			12	-rock fragment encountered at 12 feet BGS, split spoon refusal										
5	4	17, 50/2"	13					0	50+					
			14	CLAY, see next page	CL									

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

Signature	Firm
	NewFields, Madison, Wisconsin

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-1

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
6	24	8,20 23,17	15	CLAY, trace fine sand, trace fine subrounded gravel, moist, firm, medium plasticity, gray	CL			0	43					
			16											
			17											
7	24	7,23 16,27	18	SAND, clayey, trace fine subrounded gravel, moist, medium dense, medium plasticity, light yellow brown	SC			0	39					
			19	EOB at 19 feet BGS, set well MW-1										
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											

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
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-1

Facility License, Permit or Monitoring Number

Grid Origin Location
Lat. ____ ____ ____ Long. ____ ____ ____
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 8 9
DNR Well Number:

Type of Well: Water Table Observation Well ■ 11
Piezometer ☐ 12

Date Well Installed
1 2 / 0 8 / 0 4
m m d d y y

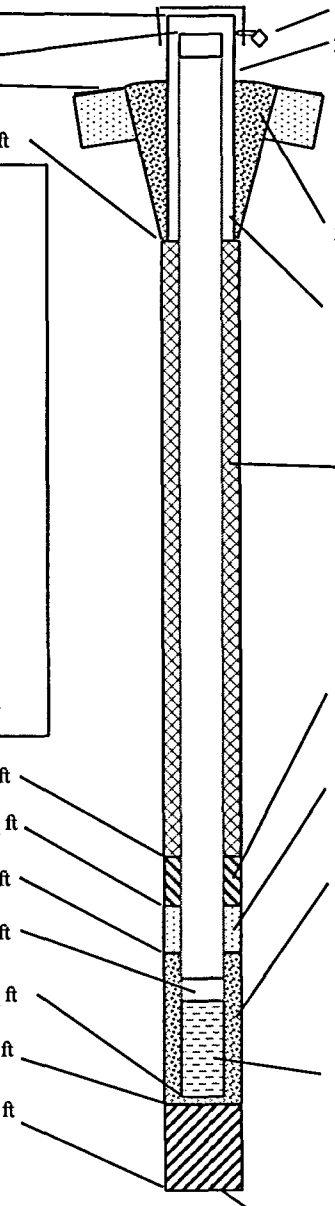
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
1/4 of 1/4 of Sec. , T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _____.__ ft. MSL
B. Well casing, top elevation _____.__ ft. MSL
C. Land surface elevation _____.__ ft. MSL
D. Surface seal, bottom _____.__ ft MSL or 1 0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ ____

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ☐ Yes ■ No
Describe: _____

17. Source of water (attached analysis):
_____

E. Bentonite seal, top _____.__ ft MSL or 1 0 ft
F. Fine sand, top _____.__ ft MSL or 6 0 ft
G. Filter pack, top _____.__ ft MSL or 7 0 ft
H. Screen joint, top _____.__ ft MSL or 8 0 ft
I. Well bottom _____.__ ft MSL or 1 8 0 ft
J. Filter pack, bottom _____.__ ft MSL or 1 8 0 ft
K. Borehole, bottom _____.__ ft MSL or 1 9 0 ft
L. Borehole, diameter 8 3 in.
M. O.D. well casing 2 3 7 in.
N. I.D. well casing 2 0 6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4 0 in.
b. Length: 6 0 ft.
c. Material: Steel ■
Stick up Other ☐ ____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ☐ 0 1
Native Soil Other ■ ____
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ ____
Ohio #5 sand Other ■ ____
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. ____ Lbs/gal mud weight ..... Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight. ..... Bentonite slurry ☐ 3 1
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 330 lbs Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. #40/60 Badger Mining fine silica ____
b. Volume added 50 lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand ____
b. Volume added 300 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ ____
10. Screen material: Sch. 40 PVC ____
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ ____
b. Manufacturer Timco
c. Slot size 0 0 1 0 in.
d. Slotted length: 1 0 0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ ____

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

Signature | Firm NewFields, Madison, Wisconsin

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 instruction 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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	MW-1

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_ _ _ _ _ _ _	2 8	P P 4 8 9	_ _ _ _

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
- surged with bailer and bailed ☐ 4 1
- surged with bailer and pumped ■ 6 1
- surged with block and bailed ☐ 4 2
- surged with block and pumped ☐ 6 2
- surged with block, bailed and pumped ☐ 7 0
- compressed air ☐ 2 0
- bailer only ☐ 1 0
- pumped only ☐ 5 1
- pumped slowly ☐ 5 0
- Other _____ ☐ _ _

3. Time spent developing well 1 2 0 min.

4. Depth of well (from top of well casing) 2 1 . 3 ft.

5. Inside diameter of well 2 . 0 6 in.

6. Volume of waters in filter pack and well casing 1 . 4 gal.

7. Volume of water removed from well 5 5 . 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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 1 2 . 8 3 ft.	_ _ _ _ . _ _ ft.
Date	b. 1 2 / 0 9 / 0 4 (m m d d y y)	1 2 / 1 0 / 0 4 (m m d d y y)
Time	c. 1 5 : 0 0 ■ p.m. ☐ a.m.	1 2 : 0 0 ■ p.m. ☐ a.m.
12. Sediment in well bottom	_ _ _ . _ inches	_ _ _ . _ inches
13. Water clarity	Clear ☐ 1 0 Turbid ■ 1 5 (Describe) Brown High turbidity	Clear ☐ 2 0 Turbid ■ 2 5 (Describe) Light gray Low turbidity
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:

Surged, then bailed 20 gallons
Pumped 25 gallons

Total removed = 55 gallons

Well developed by: Person's Name and Firm

Name: Derek Zoellner

Firm: NewFields, Madison, WI

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Page 1 of 1

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 9 / 04 (MM / DD / YY)	12 / 9 / 04 (MM / DD / YY)	4 ¼" ID HSA Split Spoon

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P_P_4_8_7_	MW-2	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			1–15	Blind drilled to 15 feet BGS. Set well MW-2. For soils descriptions, see boring log for MW-2A.										

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

Signature	Firm
	NewFields, Madison, WI

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 $4,000 for each violation. Fines 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 ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-2

Facility License, Permit or Monitoring Number
_ _ _ _ _ _ _ _

Grid Origin Location
Lat. _____ Long. _____
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 8 7 | DNR Well Number: _ _ _ _

Type of Well: Water Table Observation Well ☐ 11
Piezometer ■ 12

Date Well Installed
1 2 / 0 9 / 0 4
m m d d y y

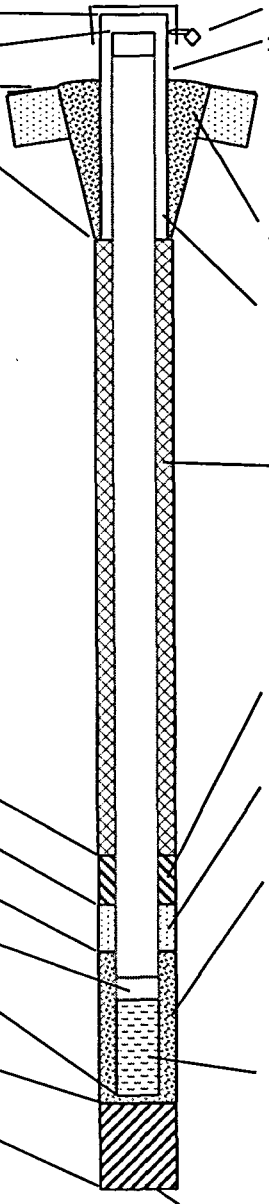
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
1/4 of 1/4 of Sec. , T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _ _ _ _ . _ _ ft. MSL
B. Well casing, top elevation _ _ _ _ . _ _ ft. MSL
C. Land surface elevation _ _ _ _ . _ _ ft. MSL
D. Surface seal, bottom _ _ _ _ . _ ft MSL or 1 0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ _ _

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ■ Yes ☐ No
Describe: Water

17. Source of water (attached analysis):
Water truck

E. Bentonite seal, top _ _ _ _ . _ ft MSL or 1 0 ft
F. Fine sand, top _ _ _ _ . _ ft MSL or _ _ . _ ft
G. Filter pack, top _ _ _ _ . _ ft MSL or 4 5 ft
H. Screen joint, top _ _ _ _ . _ ft MSL or 5 5 ft
I. Well bottom _ _ _ _ . _ ft MSL or 1 5 5 ft
J. Filter pack, bottom _ _ _ _ . _ ft MSL or 1 6 0 ft
K. Borehole, bottom _ _ _ _ . _ ft MSL or 1 6 0 ft
L. Borehole, diameter 8 3 in.
M. O.D. well casing 2 3 7 in.
N. I.D. well casing 2 0 6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 9 0 in.
b. Length: 1 0 ft.
c. Material: Steel ■
Flush mount Other ☐ _ _
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ■ 0 1
_____ Other ☐ _ _
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ _ _
Ohio #5 sand Other ■ _ _
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. _____ Lbs/gal mud weight ..... Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight..... Bentonite slurry ☐ 3 1
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 100 lbs Other ☐ _ _
7. Fine sand material: Manufacturer, product name & mesh size
a. _____ _ _
b. Volume added _____ lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand _ _
b. Volume added 300 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ _ _
10. Screen material: Sch. 40 PVC _ _
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ _ _
b. Manufacturer Timco
c. Slot size 0. 0 1 0 in.
d. Slotted length: 5 0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ _ _

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

Signature | Firm: NewFields, Madison, Wisconsin

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 instruction 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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	MW-2

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_ _ _ _ _ _ _	2 8	P P 4 8 7	_ _ _ _ _ _

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	☐ 4 1
surged with bailer and pumped	■ 6 1
surged with block and bailed	☐ 4 2
surged with block and pumped	☐ 6 2
surged with block, bailed and pumped	☐ 7 0
compressed air	☐ 2 0
bailer only	☐ 1 0
pumped only	☐ 5 1
pumped slowly	☐ 5 0
Other_____	☐

3. Time spent developing well: 1 2 0 min.

4. Depth of well (from top of well casing): 1 5 . 2 ft.

5. Inside diameter of well: 2 . 0 6 in.

6. Volume of waters in filter pack and well casing: 1 1 . 1 gal.

7. Volume of water removed from well: 5 0 . 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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 1 0 . 5 4 ft.	_ _ _ _ . _ _ ft.
Date	b. 1 2 / 1 0 / 0 4 (m m d d y y)	1 2 / 1 0 / 0 4 (m m d d y y)
Time	c. 0 9 : 0 0 ☐ p.m. ■ a.m.	1 1 : 0 0 ☐ p.m. ■ a.m.
12. Sediment in well bottom	_ _ . _ inches	_ _ . _ inches
13. Water clarity	Clear ☐ 1 0 / Turbid ■ 1 5 (Describe) Brown-orange, High turbidity	Clear ☐ 2 0 / Turbid ■ 2 5 (Describe) Light orange, Low turbidity

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:

Surged, then bailed 20 gallons
Pumped 30 gallons

Total removed = 50 gallons

Well developed by: Person's Name and Firm

Name: Derek Zoellner

Firm: NewFields, Madison, WI

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-2A

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 9 / 04 (MM / DD / YY)	12 / 9 / 04 (MM / DD / YY)	4 ¼" ID HSA 8" mud rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P P 4 8 8	MW-2A	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E / W
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	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	ROD/Comments
				Surface = asphalt parking lot										
1	24	4,6 6,9	1–3	CLAY, silty, moist, firm to stiff, high plasticity, light yellow brown to brown	CL			0	12					
2	24	6,6 10,12	4–5					0	16					
			6	CLAY, with fine sand and fine subrounded gravel, wet, firm, medium plasticity, light brown	SC									
3	24	3,7 7,12	7–8					0	10					
			9	-sandy, wet, firm, medium plasticity, light brown										
4	22	5,7 10,11	10					0	17					
			11–12	-stiff										
5	12	10,11 23,31	13	SAND, clayey, trace fine subrounded gravel, wet, medium dense, non-plastic, dark orange-brown	SC				34					
			14	SAND, trace clay, see next page	SP									

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

Signature _____ Firm NewFields, Madison, Wisconsin

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 $4,000 for each violation. Fines 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

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-2A

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
6	14	42,31 23,27	15 16	SAND, trace clay, with fine subrounded gravel, wet, very dense, orange-brown	SP				54					
7	10	22,24 30,21	17 18	SILT, trace very fine sand, wet, hard, non-plastic, gray	ML				39					
8	22	16,17 15,20	19 20 21 22 23						32					
			24	CLAY, silty, trace very fine sand, wet, hard, low plasticity, gray	CL									
9	22	9,18 23,25	25	SAND, fine grained, wet, dense, gray (6")	SP				41					
			26 27 28	CLAY, silty, trace very fine sand, wet, hard, low plasticity, gray	CL									
10	16	15,20 23,25	29 30 31 32 33	SAND, trace clay, fine grained, poorly graded, wet, medium dense, brown to brownish gray	SP				43					
11	15	15,20 26,31	34 35 36	SAND, fine to medium grained, trace fine subrounded gravel, poorly graded, wet, dense, gray	SP				46					

State of Wisconsin
Department of Natural Resources

7-91

Boring Number MW-2A

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
12	10	17,25 32,36	37 38 39 40 41 42	SAND, fine to medium grained, trace fine subrounded gravel, poorly graded, wet, dense, gray	SP				57					
			43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	EOB at 42 feet BGS, set well MW-2A at 40 feet.										

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
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-2A

Facility License, Permit or Monitoring Number
_ _ _ _ _ _ _ _

Grid Origin Location
Lat. _____ Long. _____
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 8 8 DNR Well Number: _ _ _ _

Type of Well: Water Table Observation Well ☐ 11
Piezometer ■ 12

Date Well Installed
1 2 / 0 9 / 0 4
m m d d y y

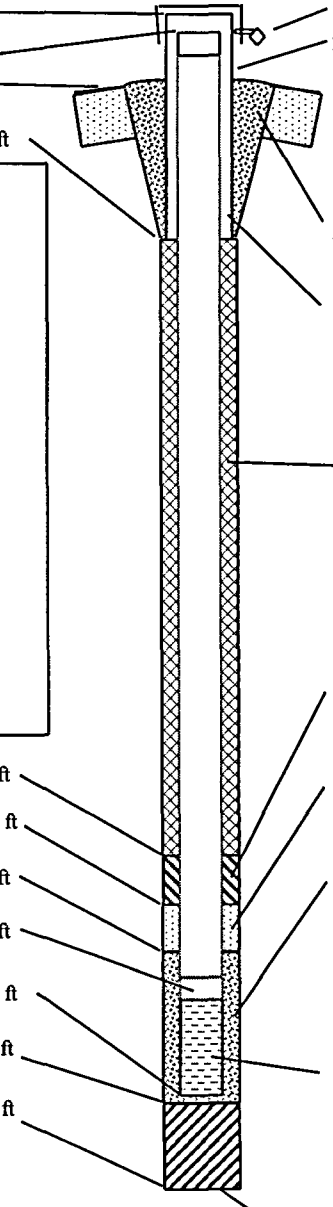
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
1/4 of 1/4 of Sec. , T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _ _ _ _ _ . _ _ ft. MSL
B. Well casing, top elevation _ _ _ _ _ . _ _ ft. MSL
C. Land surface elevation _ _ _ _ _ . _ _ ft. MSL
D. Surface seal, bottom _ _ _ _ _ . _ ft MSL or 1 0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ _ _

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ■ Yes ☐ No
Describe: Water

17. Source of water (attached analysis):
Water truck

E. Bentonite seal, top _ _ _ _ _ . _ ft MSL or 1 0 ft
F. Fine sand, top _ _ _ _ _ . _ ft MSL or 3 2 . 0 ft
G. Filter pack, top _ _ _ _ _ . _ ft MSL or 3 3 . 5 ft
H. Screen joint, top _ _ _ _ _ . _ ft MSL or 3 5 . 0 ft
I. Well bottom _ _ _ _ _ . _ ft MSL or 4 0 . 0 ft
J. Filter pack, bottom _ _ _ _ _ . _ ft MSL or 4 0 . 0 ft
K. Borehole, bottom _ _ _ _ _ . _ ft MSL or 4 2 . 0 ft
L. Borehole, diameter 8 . 3 in.
M. O.D. well casing 2 . 3 7 in.
N. I.D. well casing 2 . 0 6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 9 . 0 in.
b. Length: 1 . 0 ft.
c. Material: Flush mount Steel ■ Other ☐ _ _
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ■ 0 1
_____ Other ☐ _ _
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ _ _
Ohio #5 sand Other ■ _ _
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. _____ Lbs/gal mud weight . . . . . Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight. . . . . Bentonite slurry ☐ 3 1
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 400 lbs Other ☐ _ _
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining #40/60 silica _ _
b. Volume added 50 lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand _ _
b. Volume added 150 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ _ _
10. Screen material: Sch. 40 PVC _ _
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ _ _
b. Manufacturer Timco
c. Slot size 0 . 0 1 0 in.
d. Slotted length: 5 . 0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ _ _

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

Signature | Firm NewFields, Madison, Wisconsin

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 instruction 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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	MW-2A

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	28	PP488	

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
bailer 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): 39.9 ft.

5. Inside diameter of well: 2.06 in.

6. Volume of waters in filter pack and well casing: 4.7 gal.

7. Volume of water removed from well: 750. 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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 10.71 ft.	____. ft.
Date	b. 12/10/04 (m m d d y y)	12/10/04 (m m d d y y)
Time	c. 09:15 ■ a.m. ☐ p.m.	11:15 ■ a.m. ☐ p.m.
12. Sediment in well bottom	___. inches	___. inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15 (Describe) Grayish-brown High turbidity	Clear ☐ 20 Turbid ■ 25 (Describe) Light gray Low turbidity

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:

Surged, then bailed 2 gallons
Pumped 72 gallons
Bailed 3 gallons

Total removed = 75 gallons

Well developed by: Person's Name and Firm

Name: Derek Zoellner

Firm: NewFields, Madison, WI

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Page 1 of 1

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-3

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 9 / 04 MM DD YY	12 / 9 / 04 MM DD YY	4 ¼" ID HSA Split Spoon

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P_P_4_9_0	MW-3	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	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	ROD/Comments
1	24		1–3	Surface = gravel parking lot CLAY, silty, gravelly, fine subrounded gravel, moist, firm, medium plasticity, grayish-green	CL			0						
			3–4	SILT, trace fine sand, wet, firm, non-plastic, greenish gray	SM									
2	19		4–5	SILT, clayey, trace fine sand/fine subrounded gravel, wet, firm, low plasticity, gray	ML			17.6						
3	8		5–8	SAND, gravelly, fine to medium grained, wet, dense, poorly graded, gray	SP			32.6						
4	14		8–11	SILT, trace very fine sand, wet, firm, non-plastic, gray	ML			20.4						
5	12		11–13		ML			57						
			13–14	EOB at 14 feet BGS, set well MW-3.										

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

Signature	Firm
	NewFields, Madison, WI

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 $4,000 for each violation. Fines 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 ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-3

Facility License, Permit or Monitoring Number
_ _ _ _ _ _ _ _ _ _

Grid Origin Location
Lat. _ _ _ _ _ _ Long. _ _ _ _ _ _
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 9 0 — DNR Well Number:

Type of Well: Water Table Observation Well ■ 11
Piezometer ☐ 12

Date Well Installed
1 2 / 0 9 / 0 4
m m d d y y

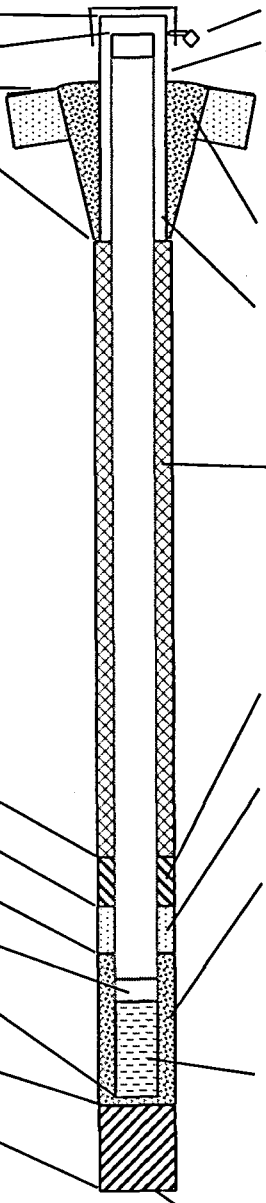
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
1/4 of 1/4 of Sec. , T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _ _ _ _ _ . _ _ ft. MSL
B. Well casing, top elevation _ _ _ _ _ . _ _ ft. MSL
C. Land surface elevation _ _ _ _ _ . _ _ ft. MSL
D. Surface seal, bottom _ _ _ _ _ . _ _ ft MSL or 1 . 0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ _ _

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ☐ Yes ■ No
Describe: _____

17. Source of water (attached analysis):
_____

E. Bentonite seal, top _ _ _ _ _ . _ _ ft MSL or 0 . 5 ft
F. Fine sand, top _ _ _ _ _ . _ _ ft MSL or _ _ . _ _ ft
G. Filter pack, top _ _ _ _ _ . _ _ ft MSL or 2 . 0 ft
H. Screen joint, top _ _ _ _ _ . _ _ ft MSL or 3 . 0 ft
I. Well bottom _ _ _ _ _ . _ _ ft MSL or 1 3 . 0 ft
J. Filter pack, bottom _ _ _ _ _ . _ _ ft MSL or 1 3 . 0 ft
K. Borehole, bottom _ _ _ _ _ . _ _ ft MSL or 1 4 . 0 ft
L. Borehole, diameter 8 . 3 in.
M. O.D. well casing 2 . 3 7 in.
N. I.D. well casing 2 . 0 6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4 . 0 in.
b. Length: 6 . 0 ft.
c. Material: Steel ■
Stick up Other ☐ _ _
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ☐ 0 1
Native Soil Other ■ _ _
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ _ _
Ohio #5 sand Other ■ _ _
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. _____ Lbs/gal mud weight ..... Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight..... Bentonite slurry ☐ 3 1
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 50 lbs Other ☐ _ _
7. Fine sand material: Manufacturer, product name & mesh size
a. None _ _
b. Volume added _____ lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand _ _
b. Volume added 300 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ _ _
10. Screen material: Sch. 40 PVC _ _
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ _ _
b. Manufacturer Timco
c. Slot size 0 . 0 1 0 in.
d. Slotted length: 1 0 . 0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ _ _

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

Signature | Firm NewFields, Madison, Wisconsin

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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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	MW-3

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_ _ _ _ _ _ _	2 8	P P 4 9 0	

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	☐ 4 1
surged with bailer and pumped	■ 6 1
surged with block and bailed	☐ 4 2
surged with block and pumped	☐ 6 2
surged with block, bailed and pumped	☐ 7 0
compressed air	☐ 2 0
bailer only	☐ 1 0
pumped only	☐ 5 1
pumped slowly	☐ 5 0
Other_____	☐

3. Time spent developing well: 1 2 0 min.

4. Depth of well (from top of well casing): 1 5 . 3 ft.

5. Inside diameter of well: 2 . 0 6 in.

6. Volume of waters in filter pack and well casing: 1 . 3 gal.

7. Volume of water removed from well: 6 0 . 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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 6 . 9 4 ft.	_____ . _ ft.
Date	b. 1 2 / 1 0 / 0 4 (m m d d y y)	1 2 / 1 0 / 0 4 (m m d d y y)
Time	c. 0 9 : 0 0 ■ a.m. ☐ p.m.	1 1 : 0 0 ■ a.m. ☐ p.m.
12. Sediment in well bottom	_ _ . _ inches	_ _ . _ inches
13. Water clarity	Clear ☐ 1 0 Turbid ■ 1 5 (Describe) Grayish-brown High turbidity	Clear ☐ 2 0 Turbid ■ 2 5 (Describe) Light gray Low turbidity

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:

Surged, then bailed 10 gallons
Pumped 50 gallons

Total removed = 60 gallons

Well developed by: Person's Name and Firm

Name: Bjorn Halvorsen

Firm: Badger State Drilling

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Page 1 of 1

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-4

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 10 / 04 MM DD YY	12 / 10 / 04 MM DD YY	4 ¼" ID HSA Split Spoon

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P P 4 9 2	MW-4	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	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	ROD/Comments
			1	Blind drilled to 15 feet BGS. Set well MW-4. For soils descriptions, see boring log for MW-4A.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											
			15											

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

Signature	Firm
	NewFields, Madison, WI

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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
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-4

Facility License, Permit or Monitoring Number
_ _ _ _ _ _ _ _

Grid Origin Location
Lat. _ _ _ _ _ _ Long. _ _ _ _ _ _
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 9 2 DNR Well Number:

Type of Well: Water Table Observation Well ■ 11
Piezometer ☐ 12

Date Well Installed
1 2 / 1 0 / 0 4
m m d d y y

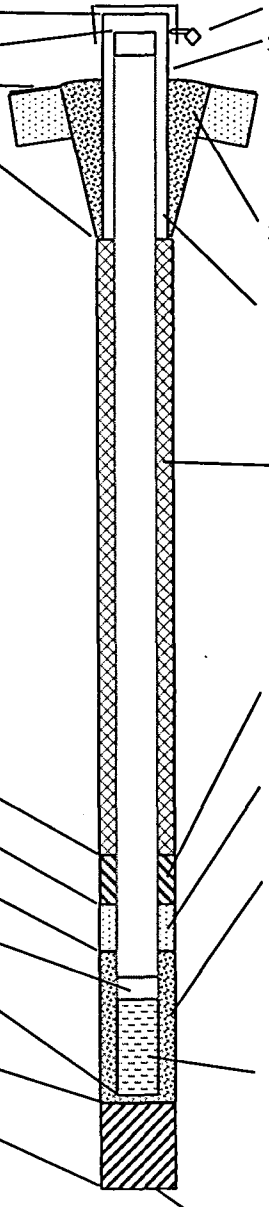
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
_1/4 of _1/4 of Sec. _, T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _ _ _ _ _._ _ ft. MSL
B. Well casing, top elevation _ _ _ _ _._ _ ft. MSL
C. Land surface elevation _ _ _ _ _._ ft. MSL
D. Surface seal, bottom _ _ _ _ _._ ft MSL or _1_0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ ☐☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ☐ Yes ■ No

Describe: _____

17. Source of water (attached analysis):

_____

E. Bentonite seal, top _ _ _ _ _._ ft MSL or _1_0 ft
F. Fine sand, top _ _ _ _ _._ ft MSL or _ _ _._ ft
G. Filter pack, top _ _ _ _ _._ ft MSL or _3_0 ft
H. Screen joint, top _ _ _ _ _._ ft MSL or _5_0 ft
I. Well bottom _ _ _ _ _._ ft MSL or 15_0 ft
J. Filter pack, bottom _ _ _ _ _._ ft MSL or 15_0 ft
K. Borehole, bottom _ _ _ _ _._ ft MSL or 15_5 ft
L. Borehole, diameter _8_3 in.
M. O.D. well casing 2_3_7 in.
N. I.D. well casing 2_0_6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _4_0 in.
b. Length: _6_0 ft.
c. Material: Steel ■
Stick up Other ☐ ☐☐
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ☐ 0 1
Native Soil Other ■ ☐☐
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ ☐☐
Ohio #5 sand Other ■ ☐☐
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. _____ Lbs/gal mud weight ..... Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight. ..... Bentonite slurry ☐ 3 1
d. _____% Bentonite ..... Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 50 lbs Other ☐ ☐☐
7. Fine sand material: Manufacturer, product name & mesh size
a. None ☐☐
b. Volume added _____ lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand ☐☐
b. Volume added 250 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ ☐☐
10. Screen material: Sch. 40 PVC ☐☐
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ ☐☐
b. Manufacturer Timco
c. Slot size 0_0_1_0 in.
d. Slotted length: 1_0_0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ ☐☐

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

Signature | Firm NewFields, Madison, Wisconsin

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 instruction 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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	MW-4

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_ _ _ _ _ _ _	2 8	P P 4 9 2	_ _ _ _ _

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	☐ 4 1
surged with bailer and pumped	■ 6 1
surged with block and bailed	☐ 4 2
surged with block and pumped	☐ 6 2
surged with block, bailed and pumped	☐ 7 0
compressed air	☐ 2 0
bailer only	☐ 1 0
pumped only	☐ 5 1
pumped slowly	☐ 5 0
Other_____	☐

3. Time spent developing well: 1 2 0 min.

4. Depth of well (from top of well casing): 1 7 . 1 ft.

5. Inside diameter of well: 2 . 0 6 in.

6. Volume of waters in filter pack and well casing: 1 . 4 gal.

7. Volume of water removed from well: 5 0 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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 7 . 9 3 ft.	_ _ _ _ . _ _ ft.
Date	b. 1 2 / 1 0 / 0 4 (m m d d y y)	1 2 / 1 0 / 0 4 (m m d d y y)
Time	c. 0 8 : 3 0 ☐ a.m. ■ p.m.	1 0 : 3 0 ☐ a.m. ■ p.m.
12. Sediment in bottom	_ _ . _ inches	_ _ . _ inches
13. Water clarity	Clear ☐ 1 0 / Turbid ■ 1 5	Clear ☐ 2 0 / Turbid ■ 2 5
(Describe)	Brownish-gray, High turbidity	Light gray, Low turbidity
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:

Surged, then bailed 10 gallons
Pumped 40 gallons

Total removed = 50 gallons

Well developed by: Person's Name and Firm

Name: Kevin McCumber

Firm: Badger State Drilling

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Page 1 of 3

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-4A

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 8 / 04 MM / DD / YY	12 / 8 / 04 MM / DD / YY	4 ¼" ID HSA Split spoon

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P P 4 9 3	MW-4A	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E / W
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	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	ROD/Comments
			1	Surface = native soil										
1	16	4,7 4,6	2–3	SAND, silty, trace fine gravel, fine grained, slightly moist, dense, brown (FILL) -moist	SM			430	11					
2	20	3,6 8,9	4–6	SILT, clayey, slightly moist, firm, low plasticity, light yellowish brown with rust mottles -as above, increasing clay content, medium plasticity, moist	ML-CL			2900	14					
3	22	4,6 11,13	7–8					3180	17					
			9	CLAY, sandy, trace fine subrounded gravel, wet, firm, medium plasticity, light brown	SC									
4	16	4,7 12,10	10–11	SAND, fine to medium grained, rounded, wet, medium dense, brown	SP			28.3	1					
			12	-as above, slight odor										
5	12	2,5 11,22	13					0	16					
			14	-Driller reports sand heaving into augers, very poor sample recovery										

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

Signature	Firm
	NewFields, Madison, Wisconsin

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 $4,000 for each violation. Fines 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

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-4A

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			15	-no recovery										
6	0	26, 50/0	16		SP				50+					
			17											
7	3	11,13 17,22	18	SAND, as above, very poor recovery					30					
			19											
			20											
			21											
			22											
			23											
			24	SAND, fine to medium grained, rounded, wet, medium dense, grayish-brown										
8	10		25		SP									
			26											
			27											
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											

State of Wisconsin
Department of Natural Resources

7-91

Boring Number MW-4A

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
9	12		37 38 39 40 41	SAND, medium grained, gravelly (fine subrounded gravel), poorly graded, wet, dense, brown	SP									
			42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	EOB at 40 feet BGS, set well MW-4A.										

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
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-4A

Facility License, Permit or Monitoring Number
_ _ _ _ _ _ _ _

Grid Origin Location
Lat. _ _ _ _ _ Long. _ _ _ _ _
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 9 3
DNR Well Number:

Type of Well: Water Table Observation Well ☐ 11
Piezometer ■ 12

Date Well Installed
1 2 / 0 8 / 0 4
m m d d y y

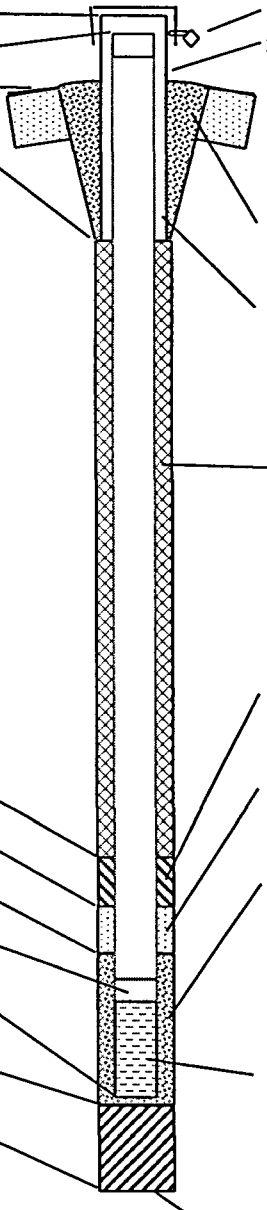
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
1/4 of 1/4 of Sec. , T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _ _ _ _ _ . _ _ ft. MSL
B. Well casing, top elevation _ _ _ _ _ . _ _ ft. MSL
C. Land surface elevation _ _ _ _ _ . _ _ ft. MSL
D. Surface seal, bottom _ _ _ _ _ . _ ft MSL or 1 . 0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ _ _

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ■ Yes ☐ No
Describe: Water

17. Source of water (attached analysis):
Water truck

E. Bentonite seal, top _ _ _ _ _ . _ ft MSL or 2 . 0 ft
F. Fine sand, top _ _ _ _ _ . _ ft MSL or 3 2 . 0 ft
G. Filter pack, top _ _ _ _ _ . _ ft MSL or 3 3 . 3 ft
H. Screen joint, top _ _ _ _ _ . _ ft MSL or 3 4 . 0 ft
I. Well bottom _ _ _ _ _ . _ ft MSL or 3 9 . 0 ft
J. Filter pack, bottom _ _ _ _ _ . _ ft MSL or 3 9 . 0 ft
K. Borehole, bottom _ _ _ _ _ . _ ft MSL or 3 9 . 5 ft
L. Borehole, diameter 8 . 3 in.
M. O.D. well casing 2 . 3 7 in.
N. I.D. well casing 2 . 0 6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4 . 0 in.
b. Length: 6 . 0 ft.
c. Material: Steel ■
Stick up Other ☐ _ _
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ☐ 0 1
Native Soil Other ■ _ _
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ _ _
Ohio #5 sand Other ■ _ _
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. _____ Lbs/gal mud weight ..... Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight..... Bentonite slurry ☐ 3 1
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 250 lbs Other ☐ _ _
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining #40/60 silica _ _
b. Volume added 50 lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand _ _
b. Volume added 150 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ _ _
10. Screen material: Sch. 40 PVC _ _
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ _ _
b. Manufacturer Timco
c. Slot size 0 . 0 1 0 in.
d. Slotted length: 5 . 0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ _ _

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

Signature | Firm NewFields, Madison, Wisconsin

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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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	**MW-4A**

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	28	PP493	

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
   - bailer 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) 410. ft.

5. Inside diameter of well 2.06 in.

6. Volume of waters in filter pack and well casing 1.4 gal.

7. Volume of water removed from well 500. 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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 7.78 ft.	____. ft.
Date	b. 12/10/04 (mm dd yy)	12/10/04 (mm dd yy)
Time	c. 08:40 ■ a.m. ☐ p.m.	10:40 ■ a.m. ☐ p.m.
12. Sediment in well bottom	___. inches	___. inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15 (Describe) Brownish-gray High turbidity	Clear ■ 20 Turbid ☐ 25 (Describe) Clear Very low turbidity
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:

Surged, then bailed 10 gallons
Pumped 40 gallons

Total removed = 50 gallons

Well developed by: Person's Name and Firm

Name: Kevin McCumber

Firm: Badger State Drilling

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

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

Page 1 of 1

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
DB Oaks Facility, Fort Atkinson, Wisconsin	— — — — — — — —	MW-5

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin McCumber Badger State Drilling	12 / 8 / 04 MM / DD / YY	12 / 8 / 04 MM / DD / YY	4 ¼" ID HSA Split Spoon

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
— — —	P P 4 9 1	MW-5	_____ Feet MSL	_____ Feet MSL	8.3 inches

Boring Location
State Plane _____ N. _____ E S/C/N
_____ 1/4 of _____ 1/4 of Section _____ T _____ N, R _____ E
Lat — — —
Long — — —

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

County	DNR County Code	Civil Town / City / or Village
Jefferson	2 8	City of Fort Atkinson

Sample Number	Sample Length Recovered (N)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	ROD/Comments
			1	Surface = native soil										
			2	SILT, moist, firm, with roots, non-plastic, very dark brown	ML									
1	10	5,6 8,9	3	CLAY, trace fine sand, moist, firm, medium plasticity, green with rust mottles	CL			0	14					
			4											
2	12	6,4 7,6	5	SAND, some clay, moist, medium dense, fie grained, low plasticity, light yellow brown	SC			0	11					
			6											
			7											
3	17	4,5 8,17	8	CLAY, trace fine sand, wet, soft, high plasticity, gray	CL			0	13					
			9	SAND, medium grained, some fine rounded gravel, wet, loose, brown	GP									
4	18	7,6 6,8	10	CLAY, trace fine sand, trace fine subrounded gravel, wet, soft to firm, high plasticity, gray	CL			0	13					
			11	SAND, clayey, trace fine subrounded gravel, wet, med dense, gray	SC									
			12											
5	20	4,6 6,7	13					0	12					
			14											
			15	EOB at 14 feet BGS, set well MW-5.										

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

Signature	Firm
	NewFields, Madison, WI

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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
DB Oaks Facility
Fort Atkinson, Wisconsin

Local Grid Location of Well
_____ ft. ☐ N. _____ ft. ☐ E.
☐ S. ☐ W.

Well Name
MW-5

Facility License, Permit or Monitoring Number
_ _ _ _ _ _ _ _ _ _

Grid Origin Location
Lat. _____ Long. _____
St. Plane _____ ft. N, _____ ft. E.

Wis. Unique Well Number: P P 4 9 1 DNR Well Number:

Type of Well: Water Table Observation Well ■ 11
Piezometer ☐ 12

Date Well Installed
1 2 / 0 8 / 0 4
m m d d y y

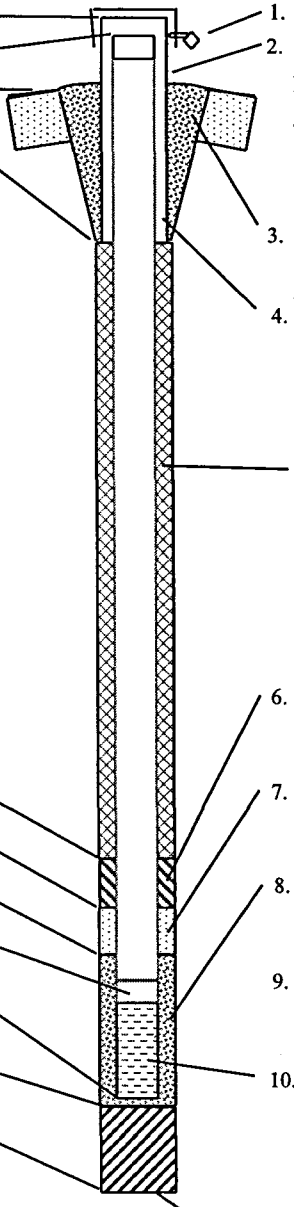
Distance Well Is From Waste/Source Boundary

Section Location of Waste/Source ☐ E
1/4 of 1/4 of Sec. , T. N, R. ☐ W

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Badger State Drilling

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 _ _ _ _ _ . _ _ ft. MSL
B. Well casing, top elevation _ _ _ _ _ . _ _ ft. MSL
C. Land surface elevation _ _ _ _ _ . _ ft. MSL
D. Surface seal, bottom _ _ _ _ _ . _ ft MSL or 1 . 0 ft

12. USCS 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 ☐ 5 0
Hollow Stem Auger ■ 4 1
_____ Other ☐ _ _

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ■ 9 9

16. Drilling additives used? ☐ Yes ■ No
Describe: _____

17. Source of water (attached analysis):
_____

E. Bentonite seal, top _ _ _ _ _ . _ ft MSL or 1 . 0 ft
F. Fine sand, top _ _ _ _ _ . _ ft MSL or 2 . 0 ft
G. Filter pack, top _ _ _ _ _ . _ ft MSL or 3 . 0 ft
H. Screen joint, top _ _ _ _ _ . _ ft MSL or 4 . 0 ft
I. Well bottom _ _ _ _ _ . _ ft MSL or 1 4 . 0 ft
J. Filter pack, bottom _ _ _ _ _ . _ ft MSL or 1 4 . 5 ft
K. Borehole, bottom _ _ _ _ _ . _ ft MSL or 1 4 . 5 ft
L. Borehole, diameter 8 . 3 in.
M. O.D. well casing 2 . 3 7 in.
N. I.D. well casing 2 . 0 6 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4 . 0 in.
b. Length: 6 . 0 ft.
c. Material: Steel ■
Stick up Other ☐ _ _
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 3 0
Concrete ☐ 0 1
Native Soil Other ■ _ _
4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Annular Space Seal ☐ _ _
Ohio #5 sand Other ■ _ _
5. Annular space seal: a. Granular Bentonite ☐ 3 3
b. _____ Lbs/gal mud weight ..... Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight..... Bentonite slurry ☐ 3 1
d. _____% Bentonite ..... Bentonite-cement grout ☐ 5 0
e. _____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ■ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite chips ■ 3 2
c. 100 lbs Other ☐ _ _
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining #40/60 silica _ _
b. Volume added 50 lb
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 sand _ _
b. Volume added 300 lb
9. Well casing: Flush threaded PVC schedule 40 ■ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐ _ _
10. Screen material: Sch. 40 PVC _ _
a. Screen type: Factory cut ■ 1 1
Continuous slot ☐ 0 1
_____ Other ☐ _ _
b. Manufacturer Timco
c. Slot size 0 . 0 1 0 in.
d. Slotted length: 1 0 . 0 ft.
11. Backfill material (below filler pack): None ■ 1 4
_____ Other ☐ _ _

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

Signature | Firm NewFields, Madison, Wisconsin

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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 4400-113B Rev. 4-90

Facility/Project Name	County Name	Well Name
DB Oaks Facility, Fort Atkinson, WI	Jefferson	MW-5

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	28	PP491	

	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	
bailer only	☐ 10	
pumped only	☐ 51	
pumped slowly	☐ 50	
Other_____	☐	
3. Time spent developing well	150 min.	
4. Depth of well (from top of well casing)	146 ft.	
5. Inside diameter of well	2.06 in.	
6. Volume of waters in filter pack and well casing	1.1 gal.	
7. Volume of water removed from well	50.0 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. 8.09 ft.	____.__ ft.
Date	b. 12/09/04 mm dd yy	12/10/04 mm dd yy
Time	☐ a.m. c. 15:30 ■ p.m.	☐ a.m. 12:30 ■ p.m.
12. Sediment in well bottom	__.__ inches	__.__ inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15 (Describe) Dark brown, High turbidity	Clear ☐ 20 Turbid ■ 25 (Describe) Grayish-brown, Moderate turbidity
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:

Surged, then bailed 15 gallons
Pumped 30 gallons, dry
Bailed 5 gallons, dry

Total removed = 50 gallons

Well developed by: Person's Name and Firm

Name: Bjorn Halvorsen

Firm: Badger State Drilling

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

Signature: _____

Print Initials: D D Z

Firm: NewFields, Madison, Wisconsin

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

APPENDIX B

LABORATORY REPORTS
GROUNDWATER SAMPLES

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Client: NewFields Companies LLC
Attn: Mark S McColloch PG

2110 Luann Lane #101
Madison,WI 53713 3098

NLS Project: 86494
NLS Customer: 93437

Fax: 608 442 9013 Phone: 608 442 5223

Project: Thomas Ft. Atkinson 0451-002

MW-1 NLS ID: 358934
Ref. Line 1 COC 73938 MW-1 Matrix: GW
Collected: 12/16/04 10:00 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/28/04	SW846 8260	721026460

MW-2 NLS ID: 358935
Ref. Line 2 COC 73938 MW-2 Matrix: GW
Collected: 12/16/04 09:00 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/24/04	SW846 8260	721026460

MW-2A NLS ID: 358936
Ref. Line 3 COC 73938 MW-2A Matrix: GW
Collected: 12/16/04 09:15 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/24/04	SW846 8260	721026460

MW-3 NLS ID: 358937
Ref. Line 4 COC 73938 MW-3 Matrix: GW
Collected: 12/16/04 10:15 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/28/04	SW846 8260	721026460

MW-4 NLS ID: 358938
Ref. Line 5 COC 73938 MW-4 Matrix: GW
Collected: 12/16/04 11:00 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/28/04	SW846 8260	721026460

MW-4A NLS ID: 358939
Ref. Line 6 COC 73938 MW-4A Matrix: GW
Collected: 12/16/04 10:45 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/28/04	SW846 8260	721026460

MW-5 NLS ID: 358940
Ref. Line 7 COC 73938 MW-5 Matrix: GW
Collected: 12/16/04 08:00 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/28/04	SW846 8260	721026460

Dup-1 NLS ID: 358941
Ref. Line 8 COC 73938 Dup-1 Matrix: GW
Collected: 12/16/04 11:30 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/29/04	SW846 8260	721026460

Trip Blank NLS ID: 358942
Ref. Line 9 COC 73938 Trip Blank Matrix: TB
Collected: 12/16/04 00:00 Received: 12/17/04

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
VOCs (water) by EPA 8260	see attached					12/24/04	SW846 8260	721026460

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Client: NewFields Companies LLC
Attn: Mark S McColloch PG

2110 Luann Lane #101
Madison,WI 53713 3098

NLS Project: 86494
NLS Customer: 93437

Fax: 608 442 9013 Phone: 608 442 5223

Project: Thomas Ft. Atkinson 0451-002

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected 1000 ug/L = 1 mg/L
DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples

Reviewed by: _____

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358934 **MW-1** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	1	0.12	0.38
Bromobenzene	ND	ug/L	1	0.13	0.42
Bromochloromethane	ND	ug/L	1	0.11	0.37
Bromodichloromethane	ND	ug/L	1	0.19	0.70
Bromoform	ND	ug/L	1	0.10	0.34
Bromomethane	ND	ug/L	1	0.32	1.0
n-Butylbenzene	ND	ug/L	1	0.19	0.70
sec-Butylbenzene	ND	ug/L	1	0.16	0.52
tert-Butylbenzene	ND	ug/L	1	0.14	0.47
Carbon Tetrachloride	ND	ug/L	1	0.15	0.51
Chlorobenzene	ND	ug/L	1	0.19	0.68
Chloroethane	ND	ug/L	1	0.68	2.5
Chloroform	ND	ug/L	1	0.12	0.41
Chloromethane	ND	ug/L	1	0.12	0.41
2-Chlorotoluene	ND	ug/L	1	0.13	0.42
4-Chlorotoluene	ND	ug/L	1	0.13	0.44
Dibromochloromethane	ND	ug/L	1	0.16	0.55
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.25	0.83
1,2-Dibromoethane	ND	ug/L	1	0.16	0.54
Dibromomethane	ND	ug/L	1	0.16	0.57
1,2-Dichlorobenzene	ND	ug/L	1	0.13	0.46
1,3-Dichlorobenzene	ND	ug/L	1	0.10	0.34
1,4-Dichlorobenzene	ND	ug/L	1	0.19	0.64
Dichlorodifluoromethane	ND	ug/L	1	0.15	0.51
1,1-Dichloroethane	ND	ug/L	1	0.13	0.44
1,2-Dichloroethane	ND	ug/L	1	0.13	0.44
1,1-Dichloroethene	ND	ug/L	1	0.24	0.88
cis-1,2-Dichloroethene	[0.14]	ug/L	1	0.13	0.44
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.36
1,2-Dichloropropane	ND	ug/L	1	0.13	0.42
1,3-Dichloropropane	ND	ug/L	1	0.15	0.49
2,2-Dichloropropane	ND	ug/L	1	0.16	0.55
1,1-Dichloropropene	ND	ug/L	1	0.17	0.57
cis-1,3-Dichloropropene	ND	ug/L	1	0.21	0.78
trans-1,3-Dichloropropene	ND	ug/L	1	0.15	0.49
Ethylbenzene	ND	ug/L	1	0.14	0.47
Hexachlorobutadiene	ND	ug/L	1	0.23	0.88
Isopropylbenzene	ND	ug/L	1	0.12	0.41
p-Isopropyltoluene	ND	ug/L	1	0.12	0.39
Methylene chloride	ND	ug/L	1	0.10	0.34
Naphthalene	ND	ug/L	1	0.16	0.60
n-Propylbenzene	ND	ug/L	1	0.17	0.56
ortho-Xylene	ND	ug/L	1	0.13	0.44
Styrene	ND	ug/L	1	0.14	0.47
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.16	0.55
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.20	0.67
Tetrachloroethene	ND	ug/L	1	0.13	0.45
Toluene	ND	ug/L	1	0.20	0.77

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358934 **MW-1** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	1	0.17	0.64
1,2,4-Trichlorobenzene	ND	ug/L	1	0.11	0.37
1,1,1-Trichloroethane	ND	ug/L	1	0.14	0.48
1,1,2-Trichloroethane	ND	ug/L	1	0.14	0.46
Trichloroethene	ND	ug/L	1	0.12	0.39
Trichlorofluoromethane	ND	ug/L	1	0.15	0.49
1,2,3-Trichloropropane	ND	ug/L	1	0.23	0.76
1,2,4-Trimethylbenzene	ND	ug/L	1	0.14	0.48
1,3,5-Trimethylbenzene	ND	ug/L	1	0.12	0.41
Vinyl chloride	ND	ug/L	1	0.16	0.61
meta,para-Xylene	ND	ug/L	1	0.26	0.88
MTBE	ND	ug/L	1	0.14	0.48
Isopropyl ether	ND	ug/L	1	0.13	0.45
Dibromofluoromethane (SURR**)	98%				
Toluene-d8 (SURR**)	105%				
1-Bromo-4-Fluorobenzene (SURR**)	96%				

Check standard recovery was outside QC limits for Bromomethane at 72%.

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W Printed: 12/30/2004 09:14**

Sample: 358935 MW-2 **Collected: 12/16/04** **Analyzed: 12/24/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	50	5.8	19
Bromobenzene	ND	ug/L	50	6.4	21
Bromochloromethane	ND	ug/L	50	5.5	18
Bromodichloromethane	ND	ug/L	50	9.5	35
Bromoform	ND	ug/L	50	5.1	17
Bromomethane	ND	ug/L	50	16	50
n-Butylbenzene	ND	ug/L	50	9.3	35
sec-Butylbenzene	ND	ug/L	50	7.9	26
tert-Butylbenzene	ND	ug/L	50	7.0	23
Carbon Tetrachloride	ND	ug/L	50	7.7	26
Chlorobenzene	ND	ug/L	50	9.5	34
Chloroethane	ND	ug/L	50	34	120
Chloroform	ND	ug/L	50	6.1	20
Chloromethane	ND	ug/L	50	6.1	20
2-Chlorotoluene	ND	ug/L	50	6.3	21
4-Chlorotoluene	ND	ug/L	50	6.6	22
Dibromochloromethane	ND	ug/L	50	8.2	27
1,2-Dibromo-3-Chloropropane	ND	ug/L	50	12	42
1,2-Dibromoethane	ND	ug/L	50	8.1	27
Dibromomethane	ND	ug/L	50	7.8	29
1,2-Dichlorobenzene	ND	ug/L	50	6.3	23
1,3-Dichlorobenzene	ND	ug/L	50	5.2	17
1,4-Dichlorobenzene	ND	ug/L	50	9.7	32
Dichlorodifluoromethane	ND	ug/L	50	7.7	26
1,1-Dichloroethane	ND	ug/L	50	6.6	22
1,2-Dichloroethane	ND	ug/L	50	6.6	22
1,1-Dichloroethene	[18]	ug/L	50	12	44
cis-1,2-Dichloroethene	5900	ug/L	500	66	220
trans-1,2-Dichloroethene	32	ug/L	50	5.4	18
1,2-Dichloropropane	ND	ug/L	50	6.3	21
1,3-Dichloropropane	ND	ug/L	50	7.4	25
2,2-Dichloropropane	ND	ug/L	50	8.2	27
1,1-Dichloropropene	ND	ug/L	50	8.6	29
cis-1,3-Dichloropropene	ND	ug/L	50	10	39
trans-1,3-Dichloropropene	ND	ug/L	50	7.3	24
Ethylbenzene	ND	ug/L	50	7.1	23
Hexachlorobutadiene	ND	ug/L	50	12	44
Isopropylbenzene	ND	ug/L	50	6.1	20
p-Isopropyltoluene	ND	ug/L	50	5.8	19
Methylene chloride	ND	ug/L	50	5.2	17
Naphthalene	ND	ug/L	50	8.2	30
n-Propylbenzene	ND	ug/L	50	8.5	28
ortho-Xylene	ND	ug/L	50	6.7	22
Styrene	ND	ug/L	50	7.0	23
1,1,1,2-Tetrachloroethane	ND	ug/L	50	8.2	27
1,1,2,2-Tetrachloroethane	ND	ug/L	50	10	33
Tetrachloroethene	120	ug/L	50	6.7	22
Toluene	ND	ug/L	50	10	39

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W Printed: 12/30/2004 09:14**

Sample: 358935 MW-2 **Collected: 12/16/04** **Analyzed: 12/24/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	50	8.7	32
1,2,4-Trichlorobenzene	ND	ug/L	50	5.3	19
1,1,1-Trichloroethane	ND	ug/L	50	7.2	24
1,1,2-Trichloroethane	ND	ug/L	50	6.9	23
Trichloroethene	140	ug/L	50	5.9	19
Trichlorofluoromethane	ND	ug/L	50	7.3	24
1,2,3-Trichloropropane	ND	ug/L	50	11	38
1,2,4-Trimethylbenzene	ND	ug/L	50	7.2	24
1,3,5-Trimethylbenzene	ND	ug/L	50	6.1	20
Vinyl chloride	33	ug/L	50	8.2	30
meta,para-Xylene	ND	ug/L	50	13	44
MTBE	ND	ug/L	50	7.2	24
Isopropyl ether	ND	ug/L	50	6.7	22
Dibromofluoromethane (SURR**)	105%				
Toluene-d8 (SURR**)	108%				
1-Bromo-4-Fluorobenzene (SURR**)	98%				

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W Printed: 12/30/2004 09:14**

Sample: 358936 MW-2A **Collected: 12/16/04** **Analyzed: 12/24/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	50	5.8	19
Bromobenzene	ND	ug/L	50	6.4	21
Bromochloromethane	ND	ug/L	50	5.5	18
Bromodichloromethane	ND	ug/L	50	9.5	35
Bromoform	ND	ug/L	50	5.1	17
Bromomethane	ND	ug/L	50	16	50
n-Butylbenzene	ND	ug/L	50	9.3	35
sec-Butylbenzene	ND	ug/L	50	7.9	26
tert-Butylbenzene	ND	ug/L	50	7.0	23
Carbon Tetrachloride	ND	ug/L	50	7.7	26
Chlorobenzene	ND	ug/L	50	9.5	34
Chloroethane	ND	ug/L	50	34	120
Chloroform	ND	ug/L	50	6.1	20
Chloromethane	ND	ug/L	50	6.1	20
2-Chlorotoluene	ND	ug/L	50	6.3	21
4-Chlorotoluene	ND	ug/L	50	6.6	22
Dibromochloromethane	ND	ug/L	50	8.2	27
1,2-Dibromo-3-Chloropropane	ND	ug/L	50	12	42
1,2-Dibromoethane	ND	ug/L	50	8.1	27
Dibromomethane	ND	ug/L	50	7.8	29
1,2-Dichlorobenzene	ND	ug/L	50	6.3	23
1,3-Dichlorobenzene	ND	ug/L	50	5.2	17
1,4-Dichlorobenzene	ND	ug/L	50	9.7	32
Dichlorodifluoromethane	ND	ug/L	50	7.7	26
1,1-Dichloroethane	ND	ug/L	50	6.6	22
1,2-Dichloroethane	ND	ug/L	50	6.6	22
1,1-Dichloroethene	ND	ug/L	50	12	44
cis-1,2-Dichloroethene	380	ug/L	50	6.6	22
trans-1,2-Dichloroethene	ND	ug/L	50	5.4	18
1,2-Dichloropropane	ND	ug/L	50	6.3	21
1,3-Dichloropropane	ND	ug/L	50	7.4	25
2,2-Dichloropropane	ND	ug/L	50	8.2	27
1,1-Dichloropropene	ND	ug/L	50	8.6	29
cis-1,3-Dichloropropene	ND	ug/L	50	10	39
trans-1,3-Dichloropropene	ND	ug/L	50	7.3	24
Ethylbenzene	ND	ug/L	50	7.1	23
Hexachlorobutadiene	ND	ug/L	50	12	44
Isopropylbenzene	ND	ug/L	50	6.1	20
p-Isopropyltoluene	ND	ug/L	50	5.8	19
Methylene chloride	ND	ug/L	50	5.2	17
Naphthalene	ND	ug/L	50	8.2	30
n-Propylbenzene	ND	ug/L	50	8.5	28
ortho-Xylene	ND	ug/L	50	6.7	22
Styrene	ND	ug/L	50	7.0	23
1,1,1,2-Tetrachloroethane	ND	ug/L	50	8.2	27
1,1,2,2-Tetrachloroethane	ND	ug/L	50	10	33
Tetrachloroethene	44	ug/L	50	6.7	22
Toluene	ND	ug/L	50	10	39

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358936 **MW-2A** **Collected: 12/16/04** **Analyzed: 12/24/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	50	8.7	32
1,2,4-Trichlorobenzene	ND	ug/L	50	5.3	19
1,1,1-Trichloroethane	ND	ug/L	50	7.2	24
1,1,2-Trichloroethane	ND	ug/L	50	6.9	23
Trichloroethene	69	ug/L	50	5.9	19
Trichlorofluoromethane	ND	ug/L	50	7.3	24
1,2,3-Trichloropropane	ND	ug/L	50	11	38
1,2,4-Trimethylbenzene	ND	ug/L	50	7.2	24
1,3,5-Trimethylbenzene	ND	ug/L	50	6.1	20
Vinyl chloride	[29]	ug/L	50	8.2	30
meta,para-Xylene	ND	ug/L	50	13	44
MTBE	ND	ug/L	50	7.2	24
Isopropyl ether	ND	ug/L	50	6.7	22
Dibromofluoromethane (SURR**)	102%				
Toluene-d8 (SURR**)	108%				
1-Bromo-4-Fluorobenzene (SURR**)	100%				

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358937 **MW-3** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	5000	580	1900
Bromobenzene	ND	ug/L	5000	640	2100
Bromochloromethane	ND	ug/L	5000	550	1800
Bromodichloromethane	ND	ug/L	5000	950	3500
Bromoform	ND	ug/L	5000	510	1700
Bromomethane	ND	ug/L	5000	1600	5000
n-Butylbenzene	ND	ug/L	5000	930	3500
sec-Butylbenzene	ND	ug/L	5000	790	2600
tert-Butylbenzene	ND	ug/L	5000	700	2300
Carbon Tetrachloride	ND	ug/L	5000	770	2600
Chlorobenzene	ND	ug/L	5000	950	3400
Chloroethane	ND	ug/L	5000	3400	12000
Chloroform	ND	ug/L	5000	610	2000
Chloromethane	ND	ug/L	5000	610	2000
2-Chlorotoluene	ND	ug/L	5000	630	2100
4-Chlorotoluene	ND	ug/L	5000	660	2200
Dibromochloromethane	ND	ug/L	5000	820	2700
1,2-Dibromo-3-Chloropropane	ND	ug/L	5000	1200	4200
1,2-Dibromoethane	ND	ug/L	5000	810	2700
Dibromomethane	ND	ug/L	5000	780	2900
1,2-Dichlorobenzene	ND	ug/L	5000	630	2300
1,3-Dichlorobenzene	ND	ug/L	5000	520	1700
1,4-Dichlorobenzene	ND	ug/L	5000	970	3200
Dichlorodifluoromethane	ND	ug/L	5000	770	2600
1,1-Dichloroethane	ND	ug/L	5000	660	2200
1,2-Dichloroethane	ND	ug/L	5000	660	2200
1,1-Dichloroethene	ND	ug/L	5000	1200	4400
cis-1,2-Dichloroethene	6800	ug/L	5000	660	2200
trans-1,2-Dichloroethene	ND	ug/L	5000	540	1800
1,2-Dichloropropane	ND	ug/L	5000	630	2100
1,3-Dichloropropane	ND	ug/L	5000	740	2500
2,2-Dichloropropane	ND	ug/L	5000	820	2700
1,1-Dichloropropene	ND	ug/L	5000	860	2900
cis-1,3-Dichloropropene	ND	ug/L	5000	1000	3900
trans-1,3-Dichloropropene	ND	ug/L	5000	730	2400
Ethylbenzene	ND	ug/L	5000	710	2300
Hexachlorobutadiene	ND	ug/L	5000	1200	4400
Isopropylbenzene	ND	ug/L	5000	610	2000
p-Isopropyltoluene	ND	ug/L	5000	580	1900
Methylene chloride	ND	ug/L	5000	520	1700
Naphthalene	ND	ug/L	5000	820	3000
n-Propylbenzene	ND	ug/L	5000	850	2800
ortho-Xylene	ND	ug/L	5000	670	2200
Styrene	ND	ug/L	5000	700	2300
1,1,1,2-Tetrachloroethane	ND	ug/L	5000	820	2700
1,1,2,2-Tetrachloroethane	ND	ug/L	5000	1000	3300
Tetrachloroethene	34000	ug/L	5000	670	2200
Toluene	ND	ug/L	5000	1000	3900

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358937 **MW-3** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	5000	870	3200
1,2,4-Trichlorobenzene	ND	ug/L	5000	530	1900
1,1,1-Trichloroethane	ND	ug/L	5000	720	2400
1,1,2-Trichloroethane	ND	ug/L	5000	690	2300
Trichloroethene	17000	ug/L	5000	590	1900
Trichlorofluoromethane	ND	ug/L	5000	730	2400
1,2,3-Trichloropropane	ND	ug/L	5000	1100	3800
1,2,4-Trimethylbenzene	ND	ug/L	5000	720	2400
1,3,5-Trimethylbenzene	ND	ug/L	5000	610	2000
Vinyl chloride	ND	ug/L	5000	820	3000
meta,para-Xylene	ND	ug/L	5000	1300	4400
MTBE	ND	ug/L	5000	720	2400
Isopropyl ether	ND	ug/L	5000	670	2200
Dibromofluoromethane (SURR**)	102%				
Toluene-d8 (SURR**)	105%				
1-Bromo-4-Fluorobenzene (SURR**)	100%				

Check standard recovery was outside QC limits for Bromomethane at 72%.

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358938 **MW-4** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	500	58	190
Bromobenzene	ND	ug/L	500	64	210
Bromochloromethane	ND	ug/L	500	55	180
Bromodichloromethane	ND	ug/L	500	95	350
Bromoform	ND	ug/L	500	51	170
Bromomethane	ND	ug/L	500	160	500
n-Butylbenzene	ND	ug/L	500	93	350
sec-Butylbenzene	ND	ug/L	500	79	260
tert-Butylbenzene	ND	ug/L	500	70	230
Carbon Tetrachloride	ND	ug/L	500	77	260
Chlorobenzene	ND	ug/L	500	95	340
Chloroethane	ND	ug/L	500	340	1200
Chloroform	ND	ug/L	500	61	200
Chloromethane	ND	ug/L	500	61	200
2-Chlorotoluene	ND	ug/L	500	63	210
4-Chlorotoluene	ND	ug/L	500	66	220
Dibromochloromethane	ND	ug/L	500	82	270
1,2-Dibromo-3-Chloropropane	ND	ug/L	500	120	420
1,2-Dibromoethane	ND	ug/L	500	81	270
Dibromomethane	ND	ug/L	500	78	290
1,2-Dichlorobenzene	ND	ug/L	500	63	230
1,3-Dichlorobenzene	ND	ug/L	500	52	170
1,4-Dichlorobenzene	ND	ug/L	500	97	320
Dichlorodifluoromethane	ND	ug/L	500	77	260
1,1-Dichloroethane	ND	ug/L	500	66	220
1,2-Dichloroethane	ND	ug/L	500	66	220
1,1-Dichloroethene	ND	ug/L	500	120	440
cis-1,2-Dichloroethene	ND	ug/L	500	66	220
trans-1,2-Dichloroethene	ND	ug/L	500	54	180
1,2-Dichloropropane	ND	ug/L	500	63	210
1,3-Dichloropropane	ND	ug/L	500	74	250
2,2-Dichloropropane	ND	ug/L	500	82	270
1,1-Dichloropropene	ND	ug/L	500	86	290
cis-1,3-Dichloropropene	ND	ug/L	500	100	390
trans-1,3-Dichloropropene	ND	ug/L	500	73	240
Ethylbenzene	ND	ug/L	500	71	230
Hexachlorobutadiene	ND	ug/L	500	120	440
Isopropylbenzene	ND	ug/L	500	61	200
p-Isopropyltoluene	ND	ug/L	500	58	190
Methylene chloride	ND	ug/L	500	52	170
Naphthalene	ND	ug/L	500	82	300
n-Propylbenzene	ND	ug/L	500	85	280
ortho-Xylene	ND	ug/L	500	67	220
Styrene	ND	ug/L	500	70	230
1,1,1,2-Tetrachloroethane	ND	ug/L	500	82	270
1,1,2,2-Tetrachloroethane	ND	ug/L	500	100	330
Tetrachloroethene	2500	ug/L	500	67	220
Toluene	ND	ug/L	500	100	390

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358938 **MW-4** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	500	87	320
1,2,4-Trichlorobenzene	ND	ug/L	500	53	190
1,1,1-Trichloroethane	ND	ug/L	500	72	240
1,1,2-Trichloroethane	ND	ug/L	500	69	230
Trichloroethene	10000	ug/L	500	59	190
Trichlorofluoromethane	ND	ug/L	500	73	240
1,2,3-Trichloropropane	ND	ug/L	500	110	380
1,2,4-Trimethylbenzene	ND	ug/L	500	72	240
1,3,5-Trimethylbenzene	ND	ug/L	500	61	200
Vinyl chloride	ND	ug/L	500	82	300
meta,para-Xylene	ND	ug/L	500	130	440
MTBE	ND	ug/L	500	72	240
Isopropyl ether	ND	ug/L	500	67	220
Dibromofluoromethane (SURR**)	100%				
Toluene-d8 (SURR**)	96%				
1-Bromo-4-Fluorobenzene (SURR**)	92%				

Check standard recovery was outside QC limits for Bromomethane at 72%.

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358939 **MW-4A** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	6.0	ug/L	1	0.12	0.38
Bromobenzene	ND	ug/L	1	0.13	0.42
Bromochloromethane	ND	ug/L	1	0.11	0.37
Bromodichloromethane	ND	ug/L	1	0.19	0.70
Bromoform	ND	ug/L	1	0.10	0.34
Bromomethane	ND	ug/L	1	0.32	1.0
n-Butylbenzene	ND	ug/L	1	0.19	0.70
sec-Butylbenzene	ND	ug/L	1	0.16	0.52
tert-Butylbenzene	ND	ug/L	1	0.14	0.47
Carbon Tetrachloride	ND	ug/L	1	0.15	0.51
Chlorobenzene	ND	ug/L	1	0.19	0.68
Chloroethane	ND	ug/L	1	0.68	2.5
Chloroform	ND	ug/L	1	0.12	0.41
Chloromethane	ND	ug/L	1	0.12	0.41
2-Chlorotoluene	ND	ug/L	1	0.13	0.42
4-Chlorotoluene	ND	ug/L	1	0.13	0.44
Dibromochloromethane	ND	ug/L	1	0.16	0.55
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.25	0.83
1,2-Dibromoethane	ND	ug/L	1	0.16	0.54
Dibromomethane	ND	ug/L	1	0.16	0.57
1,2-Dichlorobenzene	ND	ug/L	1	0.13	0.46
1,3-Dichlorobenzene	ND	ug/L	1	0.10	0.34
1,4-Dichlorobenzene	ND	ug/L	1	0.19	0.64
Dichlorodifluoromethane	[0.49]	ug/L	1	0.15	0.51
1,1-Dichloroethane	ND	ug/L	1	0.13	0.44
1,2-Dichloroethane	ND	ug/L	1	0.13	0.44
1,1-Dichloroethene	ND	ug/L	1	0.24	0.88
cis-1,2-Dichloroethene	0.89	ug/L	1	0.13	0.44
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.36
1,2-Dichloropropane	ND	ug/L	1	0.13	0.42
1,3-Dichloropropane	ND	ug/L	1	0.15	0.49
2,2-Dichloropropane	ND	ug/L	1	0.16	0.55
1,1-Dichloropropene	ND	ug/L	1	0.17	0.57
cis-1,3-Dichloropropene	ND	ug/L	1	0.21	0.78
trans-1,3-Dichloropropene	ND	ug/L	1	0.15	0.49
Ethylbenzene	ND	ug/L	1	0.14	0.47
Hexachlorobutadiene	ND	ug/L	1	0.23	0.88
Isopropylbenzene	ND	ug/L	1	0.12	0.41
p-Isopropyltoluene	ND	ug/L	1	0.12	0.39
Methylene chloride	ND	ug/L	1	0.10	0.34
Naphthalene	ND	ug/L	1	0.16	0.60
n-Propylbenzene	ND	ug/L	1	0.17	0.56
ortho-Xylene	ND	ug/L	1	0.13	0.44
Styrene	ND	ug/L	1	0.14	0.47
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.16	0.55
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.20	0.67
Tetrachloroethene	7.1	ug/L	1	0.13	0.45
Toluene	[0.25]	ug/L	1	0.20	0.77

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358939 **MW-4A** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	1	0.17	0.64
1,2,4-Trichlorobenzene	ND	ug/L	1	0.11	0.37
1,1,1-Trichloroethane	ND	ug/L	1	0.14	0.48
1,1,2-Trichloroethane	ND	ug/L	1	0.14	0.46
Trichloroethene	23	ug/L	2	0.23	0.78
Trichlorofluoromethane	ND	ug/L	1	0.15	0.49
1,2,3-Trichloropropane	ND	ug/L	1	0.23	0.76
1,2,4-Trimethylbenzene	ND	ug/L	1	0.14	0.48
1,3,5-Trimethylbenzene	ND	ug/L	1	0.12	0.41
Vinyl chloride	ND	ug/L	1	0.16	0.61
meta,para-Xylene	ND	ug/L	1	0.26	0.88
MTBE	ND	ug/L	1	0.14	0.48
Isopropyl ether	ND	ug/L	1	0.13	0.45
Dibromofluoromethane (SURR**)	98%				
Toluene-d8 (SURR**)	101%				
1-Bromo-4-Fluorobenzene (SURR**)	96%				

Check standard recovery was outside QC limits for Bromomethane at 72%.

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W Printed: 12/30/2004 09:14**

Sample: 358940 MW-5 **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	1	0.12	0.38
Bromobenzene	ND	ug/L	1	0.13	0.42
Bromochloromethane	ND	ug/L	1	0.11	0.37
Bromodichloromethane	ND	ug/L	1	0.19	0.70
Bromoform	ND	ug/L	1	0.10	0.34
Bromomethane	ND	ug/L	1	0.32	1.0
n-Butylbenzene	ND	ug/L	1	0.19	0.70
sec-Butylbenzene	ND	ug/L	1	0.16	0.52
tert-Butylbenzene	ND	ug/L	1	0.14	0.47
Carbon Tetrachloride	ND	ug/L	1	0.15	0.51
Chlorobenzene	ND	ug/L	1	0.19	0.68
Chloroethane	ND	ug/L	1	0.68	2.5
Chloroform	ND	ug/L	1	0.12	0.41
Chloromethane	ND	ug/L	1	0.12	0.41
2-Chlorotoluene	ND	ug/L	1	0.13	0.42
4-Chlorotoluene	ND	ug/L	1	0.13	0.44
Dibromochloromethane	ND	ug/L	1	0.16	0.55
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.25	0.83
1,2-Dibromoethane	ND	ug/L	1	0.16	0.54
Dibromomethane	ND	ug/L	1	0.16	0.57
1,2-Dichlorobenzene	ND	ug/L	1	0.13	0.46
1,3-Dichlorobenzene	ND	ug/L	1	0.10	0.34
1,4-Dichlorobenzene	ND	ug/L	1	0.19	0.64
Dichlorodifluoromethane	ND	ug/L	1	0.15	0.51
1,1-Dichloroethane	ND	ug/L	1	0.13	0.44
1,2-Dichloroethane	ND	ug/L	1	0.13	0.44
1,1-Dichloroethene	ND	ug/L	1	0.24	0.88
cis-1,2-Dichloroethene	[0.21]	ug/L	1	0.13	0.44
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.36
1,2-Dichloropropane	ND	ug/L	1	0.13	0.42
1,3-Dichloropropane	ND	ug/L	1	0.15	0.49
2,2-Dichloropropane	ND	ug/L	1	0.16	0.55
1,1-Dichloropropene	ND	ug/L	1	0.17	0.57
cis-1,3-Dichloropropene	ND	ug/L	1	0.21	0.78
trans-1,3-Dichloropropene	ND	ug/L	1	0.15	0.49
Ethylbenzene	ND	ug/L	1	0.14	0.47
Hexachlorobutadiene	ND	ug/L	1	0.23	0.88
Isopropylbenzene	ND	ug/L	1	0.12	0.41
p-Isopropyltoluene	ND	ug/L	1	0.12	0.39
Methylene chloride	ND	ug/L	1	0.10	0.34
Naphthalene	ND	ug/L	1	0.16	0.60
n-Propylbenzene	ND	ug/L	1	0.17	0.56
ortho-Xylene	ND	ug/L	1	0.13	0.44
Styrene	ND	ug/L	1	0.14	0.47
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.16	0.55
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.20	0.67
Tetrachloroethene	2.3	ug/L	1	0.13	0.45
Toluene	ND	ug/L	1	0.20	0.77

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358940 **MW-5** **Collected: 12/16/04** **Analyzed: 12/28/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	1	0.17	0.64
1,2,4-Trichlorobenzene	ND	ug/L	1	0.11	0.37
1,1,1-Trichloroethane	ND	ug/L	1	0.14	0.48
1,1,2-Trichloroethane	ND	ug/L	1	0.14	0.46
Trichloroethene	1.2	ug/L	1	0.12	0.39
Trichlorofluoromethane	ND	ug/L	1	0.15	0.49
1,2,3-Trichloropropane	ND	ug/L	1	0.23	0.76
1,2,4-Trimethylbenzene	ND	ug/L	1	0.14	0.48
1,3,5-Trimethylbenzene	ND	ug/L	1	0.12	0.41
Vinyl chloride	ND	ug/L	1	0.16	0.61
meta,para-Xylene	ND	ug/L	1	0.26	0.88
MTBE	ND	ug/L	1	0.14	0.48
Isopropyl ether	ND	ug/L	1	0.13	0.45
Dibromofluoromethane (SURR**)	102%				
Toluene-d8 (SURR**)	107%				
1-Bromo-4-Fluorobenzene (SURR**)	99%				

Check standard recovery was outside QC limits for Bromomethane at 72%.

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358941 **Dup-1** **Collected: 12/16/04** **Analyzed: 12/29/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	500	58	190
Bromobenzene	ND	ug/L	500	64	210
Bromochloromethane	ND	ug/L	500	55	180
Bromodichloromethane	ND	ug/L	500	95	350
Bromoform	ND	ug/L	500	51	170
Bromomethane	ND	ug/L	500	160	500
n-Butylbenzene	ND	ug/L	500	93	350
sec-Butylbenzene	ND	ug/L	500	79	260
tert-Butylbenzene	ND	ug/L	500	70	230
Carbon Tetrachloride	ND	ug/L	500	77	260
Chlorobenzene	ND	ug/L	500	95	340
Chloroethane	ND	ug/L	500	340	1200
Chloroform	ND	ug/L	500	61	200
Chloromethane	ND	ug/L	500	61	200
2-Chlorotoluene	ND	ug/L	500	63	210
4-Chlorotoluene	ND	ug/L	500	66	220
Dibromochloromethane	ND	ug/L	500	82	270
1,2-Dibromo-3-Chloropropane	ND	ug/L	500	120	420
1,2-Dibromoethane	ND	ug/L	500	81	270
Dibromomethane	ND	ug/L	500	78	290
1,2-Dichlorobenzene	ND	ug/L	500	63	230
1,3-Dichlorobenzene	ND	ug/L	500	52	170
1,4-Dichlorobenzene	ND	ug/L	500	97	320
Dichlorodifluoromethane	ND	ug/L	500	77	260
1,1-Dichloroethane	ND	ug/L	500	66	220
1,2-Dichloroethane	ND	ug/L	500	66	220
1,1-Dichloroethene	ND	ug/L	500	120	440
cis-1,2-Dichloroethene	ND	ug/L	500	66	220
trans-1,2-Dichloroethene	ND	ug/L	500	54	180
1,2-Dichloropropane	ND	ug/L	500	63	210
1,3-Dichloropropane	ND	ug/L	500	74	250
2,2-Dichloropropane	ND	ug/L	500	82	270
1,1-Dichloropropene	ND	ug/L	500	86	290
cis-1,3-Dichloropropene	ND	ug/L	500	100	390
trans-1,3-Dichloropropene	ND	ug/L	500	73	240
Ethylbenzene	ND	ug/L	500	71	230
Hexachlorobutadiene	ND	ug/L	500	120	440
Isopropylbenzene	ND	ug/L	500	61	200
p-Isopropyltoluene	ND	ug/L	500	58	190
Methylene chloride	ND	ug/L	500	52	170
Naphthalene	ND	ug/L	500	82	300
n-Propylbenzene	ND	ug/L	500	85	280
ortho-Xylene	ND	ug/L	500	67	220
Styrene	ND	ug/L	500	70	230
1,1,1,2-Tetrachloroethane	ND	ug/L	500	82	270
1,1,2,2-Tetrachloroethane	ND	ug/L	500	100	330
Tetrachloroethene	2300	ug/L	500	67	220
Toluene	ND	ug/L	500	100	390

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358941 **Dup-1** **Collected: 12/16/04** **Analyzed: 12/29/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	500	87	320
1,2,4-Trichlorobenzene	ND	ug/L	500	53	190
1,1,1-Trichloroethane	ND	ug/L	500	72	240
1,1,2-Trichloroethane	ND	ug/L	500	69	230
Trichloroethene	8900	ug/L	500	59	190
Trichlorofluoromethane	ND	ug/L	500	73	240
1,2,3-Trichloropropane	ND	ug/L	500	110	380
1,2,4-Trimethylbenzene	ND	ug/L	500	72	240
1,3,5-Trimethylbenzene	ND	ug/L	500	61	200
Vinyl chloride	ND	ug/L	500	82	300
meta,para-Xylene	ND	ug/L	500	130	440
MTBE	ND	ug/L	500	72	240
Isopropyl ether	ND	ug/L	500	67	220
Dibromofluoromethane (SURR**)	100%				
Toluene-d8 (SURR**)	101%				
1-Bromo-4-Fluorobenzene (SURR**)	94%				

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358942 **Trip Blank** **Collected: 12/16/04** **Analyzed: 12/24/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
Benzene	ND	ug/L	1	0.12	0.38
Bromobenzene	ND	ug/L	1	0.13	0.42
Bromochloromethane	ND	ug/L	1	0.11	0.37
Bromodichloromethane	ND	ug/L	1	0.19	0.70
Bromoform	ND	ug/L	1	0.10	0.34
Bromomethane	ND	ug/L	1	0.32	1.0
n-Butylbenzene	ND	ug/L	1	0.19	0.70
sec-Butylbenzene	ND	ug/L	1	0.16	0.52
tert-Butylbenzene	ND	ug/L	1	0.14	0.47
Carbon Tetrachloride	ND	ug/L	1	0.15	0.51
Chlorobenzene	ND	ug/L	1	0.19	0.68
Chloroethane	ND	ug/L	1	0.68	2.5
Chloroform	ND	ug/L	1	0.12	0.41
Chloromethane	ND	ug/L	1	0.12	0.41
2-Chlorotoluene	ND	ug/L	1	0.13	0.42
4-Chlorotoluene	ND	ug/L	1	0.13	0.44
Dibromochloromethane	ND	ug/L	1	0.16	0.55
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.25	0.83
1,2-Dibromoethane	ND	ug/L	1	0.16	0.54
Dibromomethane	ND	ug/L	1	0.16	0.57
1,2-Dichlorobenzene	ND	ug/L	1	0.13	0.46
1,3-Dichlorobenzene	ND	ug/L	1	0.10	0.34
1,4-Dichlorobenzene	ND	ug/L	1	0.19	0.64
Dichlorodifluoromethane	ND	ug/L	1	0.15	0.51
1,1-Dichloroethane	ND	ug/L	1	0.13	0.44
1,2-Dichloroethane	ND	ug/L	1	0.13	0.44
1,1-Dichloroethene	ND	ug/L	1	0.24	0.88
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.44
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.36
1,2-Dichloropropane	ND	ug/L	1	0.13	0.42
1,3-Dichloropropane	ND	ug/L	1	0.15	0.49
2,2-Dichloropropane	ND	ug/L	1	0.16	0.55
1,1-Dichloropropene	ND	ug/L	1	0.17	0.57
cis-1,3-Dichloropropene	ND	ug/L	1	0.21	0.78
trans-1,3-Dichloropropene	ND	ug/L	1	0.15	0.49
Ethylbenzene	ND	ug/L	1	0.14	0.47
Hexachlorobutadiene	ND	ug/L	1	0.23	0.88
Isopropylbenzene	ND	ug/L	1	0.12	0.41
p-Isopropyltoluene	ND	ug/L	1	0.12	0.39
Methylene chloride	ND	ug/L	1	0.10	0.34
Naphthalene	ND	ug/L	1	0.16	0.60
n-Propylbenzene	ND	ug/L	1	0.17	0.56
ortho-Xylene	ND	ug/L	1	0.13	0.44
Styrene	ND	ug/L	1	0.14	0.47
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.16	0.55
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.20	0.67
Tetrachloroethene	ND	ug/L	1	0.13	0.45
Toluene	ND	ug/L	1	0.20	0.77

ANALYTICAL RESULTS: VOC's by EPA 8260 - Water - (Saturn 2)

Customer: NewFields Companies LLC **NLS Project: 86494**
Project Description: Thomas Ft. Atkinson
Project Title: 0451-002 **Template: SAT2W** **Printed: 12/30/2004 09:14**

Sample: 358942 **Trip Blank** **Collected: 12/16/04** **Analyzed: 12/24/04 -**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ
1,2,3-Trichlorobenzene	ND	ug/L	1	0.17	0.64
1,2,4-Trichlorobenzene	ND	ug/L	1	0.11	0.37
1,1,1-Trichloroethane	ND	ug/L	1	0.14	0.48
1,1,2-Trichloroethane	ND	ug/L	1	0.14	0.46
Trichloroethene	ND	ug/L	1	0.12	0.39
Trichlorofluoromethane	ND	ug/L	1	0.15	0.49
1,2,3-Trichloropropane	ND	ug/L	1	0.23	0.76
1,2,4-Trimethylbenzene	ND	ug/L	1	0.14	0.48
1,3,5-Trimethylbenzene	ND	ug/L	1	0.12	0.41
Vinyl chloride	ND	ug/L	1	0.16	0.61
meta,para-Xylene	ND	ug/L	1	0.26	0.88
MTBE	ND	ug/L	1	0.14	0.48
Isopropyl ether	ND	ug/L	1	0.13	0.45
Dibromofluoromethane (SURR**)	98%				
Toluene-d8 (SURR**)	104%				
1-Bromo-4-Fluorobenzene (SURR**)	97%				

** Surrogates are used to evaluate a method's Quality Control.

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services

400 North Lake Avenue • Crandon, WI 54520-1298

Tel: (715) 478-2777 • Fax: (715) 478-3060

Wisconsin Lab Cert. No. 721026460

WI DATCP 105-000330

CLIENT	NewFields
ADDRESS	2110 Luann Ln Ste 101
CITY / STATE / ZIP	Madison / WI / 53713
PROJECT DESCRIPTION / NO.	Thomas-Ft.Atkinson 0451-002
QUOTATION NO.	
DNR FID #	
DNR LICENSE #	
CONTACT	Mark McCulloch
PHONE	608-442-5223
PURCHASE ORDER NO.	
FAX	608-442-9013

MATRIX:
SW = surface water
WW = waste water
GW = groundwater
DW = drinking water
TIS = tissue
AIR = air
SOIL = soil
SED = sediment
PROD = product
SL = sludge
OTHER

NO. 73938

ITEM NO.	NLS LAB NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX (See above)	ANALYZE PER ORDER OF ANALYSIS: VOCs (8260) 12G	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	358934	MW-1	12/16/04	1000	GW	X	
2.	358935	MW-2		0900			
3.	358936	MW-2 DUP		0915			
4.	358937	MW-3		1015			
5.	358938	MW-4		1100			
6.	358939	MW-4A		1045			
7.	358940	MW-5		0800			
8.	358941	Dup-1		1130			
9.	358942	Trip Blank					
10.							

ONE SAMPLE PER LINE

COLLECTED BY (signature)	CUSTODY SEAL NO. (IF ANY)	DATE/TIME
RELINQUISHED BY (signature)	RECEIVED BY (signature): Dunham Express	DATE/TIME
DISPATCHED BY (signature)	METHOD OF TRANSPORT	DATE/TIME

REPORT TO: Mark McCulloch

INVOICE TO: Same

RECEIVED AT NLS BY (signature): Dorothy Goldson	DATE/TIME: 12/17/04 10:15	CONDITION: on ice	TEMP.
COOLER # 70-74	REMARKS & OTHER INFORMATION		
	WDNR FACILITY NUMBER	E-MAIL ADDRESS	

PRESERVATIVE: N = nitric acid; OH = sodium hydroxide; NP = no preservative; Z = zinc acetate; HA = hydrochloric & ascorbic acid; S = sulfuric acid; M = methanol; HI = hydrochloric acid

IMPORTANT:

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM **MUST** BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
2. PLEASE USE ONE LINE PER SAMPLE, **NOT** PER BOTTLE.
3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT TO** AND LISTED AS **INVOICE TO** AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

PLEASE COPY

APPENDIX C

IN-SITU HYDRAULIC CONDUCTIVITY TEST RESULTS

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-1 (trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

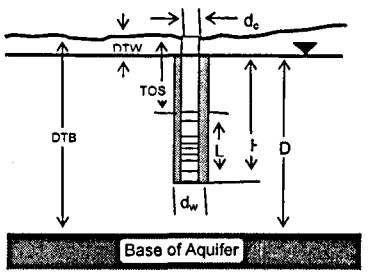
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8.58 Feet
Depths to:	
water level (DTW)	12.77 Feet
top of screen (TOS)	12.77 Feet
Base of Aquifer (DTB)	22 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

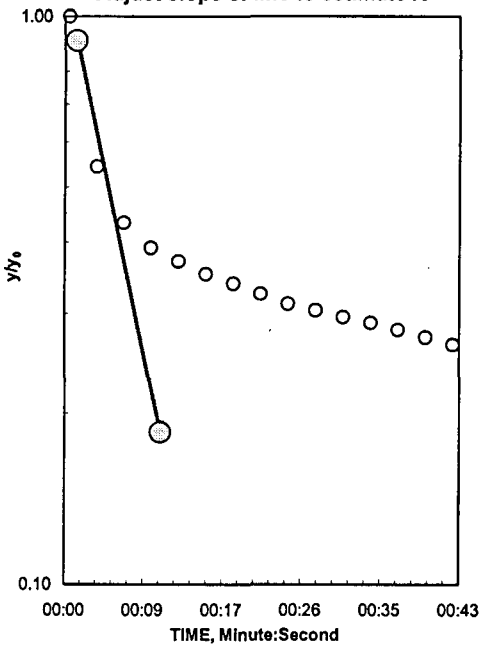
L_{wetted}	8.58 Feet
D =	9.23 Feet
H =	8.58 Feet
L/r_w =	24.96
$y_{0\text{-DISPLACEMENT}}$ =	0.86 Feet
$y_{0\text{-SLUG}}$ =	0.84 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.363
B =	0.383
ln(Re/rw) =	2.240
Re =	3.23 Feet
Slope =	0.074636552 $\log_{10}$/sec
$t_{90\%}$ recovery =	13 sec

Input is consistent.

K =	10.00 Feet/Day
K =	1.16E-04 Feet/sec
K =	3.53E-03 cm/sec



Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-1 (trial #1)
Completed by NewFields on 12/16/2004

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:26.6	6.55
2	0:00:32.6	7.04
3	0:00:38.6	7.09
4	0:00:44.6	7.12
5	0:00:50.6	7.14
6	0:00:56.6	7.16
7	0:01:02.6	7.17
8	0:01:08.6	7.18
9	0:01:14.6	7.20
10	0:01:20.6	7.20
11	0:01:26.6	7.21
12	0:01:32.7	7.22
13	0:01:38.7	7.23
14	0:01:44.7	7.24
15	0:01:50.7	7.25
16	0:01:56.7	7.25
17	0:02:02.7	7.26
18	0:02:08.7	7.26
19	0:02:14.7	7.27
20	0:02:20.7	7.28
21	0:02:26.7	7.28
22	0:02:32.7	7.29
23	0:02:38.7	7.29
24	0:02:44.7	7.30
25	0:02:50.7	7.30
26	0:02:56.7	7.30
27	0:03:02.7	7.31
28	0:03:08.7	7.31
29	0:03:14.7	7.32
30	0:03:20.7	7.32
31	0:03:26.7	7.32
32	0:03:32.7	7.32
33	0:03:38.7	7.33
34	0:03:44.7	7.33
35	0:03:50.7	7.33
36	0:03:56.8	7.34
37	0:04:02.8	7.34
38	0:04:08.8	7.34
39	0:04:14.8	7.34
40	0:04:20.8	7.34
41	0:04:26.8	7.35
42	0:04:32.8	7.35
43	0:04:38.8	7.35
44	0:04:44.8	7.35
45	0:04:50.8	7.35

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-1 (trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

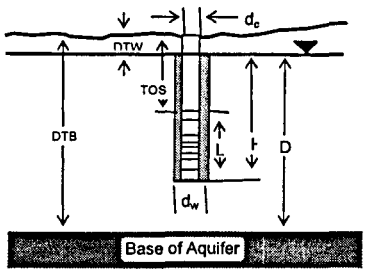
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8.58 Feet
Depths to:	
water level (DTW)	12.77 Feet
top of screen (TOS)	12.77 Feet
Base of Aquifer (DTB)	22 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

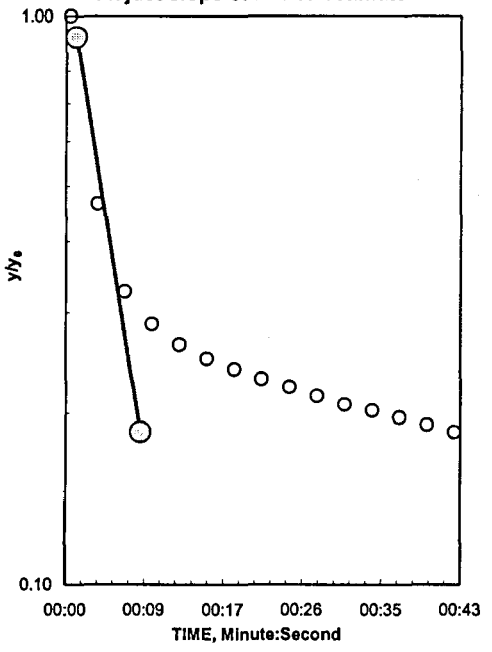
L_{wetted}	8.58 Feet
D =	9.23 Feet
H =	8.58 Feet
L/r_w =	24.96
$y_{0\text{-DISPLACEMENT}}$ =	1.23 Feet
$y_{0\text{-SLUG}}$ =	1.13 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.363
B =	0.383
ln(Re/rw) =	2.240
Re =	3.23 Feet
Slope =	0.098097335 $\log_{10}$/sec
$t_{90\%}$ recovery =	10 sec

Input is consistent.

K =	20.00 Feet/Day
K =	2.31E-04 Feet/sec
K =	7.06E-03 cm/sec



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:27.0	6.18
2	0:00:33.1	7.01
3	0:00:39.1	7.08
4	0:00:45.1	7.11
5	0:00:51.1	7.13
6	0:00:57.1	7.15
7	0:01:03.1	7.17
8	0:01:09.1	7.18
9	0:01:15.1	7.19
10	0:01:21.1	7.20
11	0:01:27.1	7.21
12	0:01:33.1	7.22
13	0:01:39.1	7.23
14	0:01:45.1	7.24
15	0:01:51.1	7.24
16	0:01:57.1	7.25
17	0:02:03.1	7.26
18	0:02:09.1	7.26
19	0:02:15.1	7.27
20	0:02:21.1	7.27
21	0:02:27.1	7.28
22	0:02:33.1	7.28
23	0:02:39.1	7.29
24	0:02:45.1	7.29
25	0:02:51.1	7.30
26	0:02:57.2	7.30
27	0:03:03.2	7.31
28	0:03:09.2	7.31
29	0:03:15.2	7.31
30	0:03:21.2	7.32
31	0:03:27.2	7.32
32	0:03:33.2	7.32
33	0:03:39.2	7.33
34	0:03:45.2	7.33
35	0:03:51.2	7.33
36	0:03:57.2	7.33
37	0:04:03.2	7.34
38	0:04:09.2	7.34
39	0:04:15.2	7.34
40	0:04:21.2	7.35
41	0:04:27.2	7.35
42	0:04:33.2	7.35
43	0:04:39.2	7.35
44	0:04:45.2	7.35
45	0:04:51.2	7.36

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-1 (trial #2)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-2 (trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

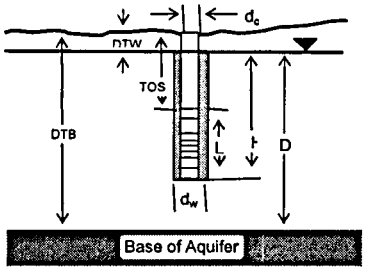
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	4.59 Feet
Depths to:	
water level (DTW)	10.59 Feet
top of screen (TOS)	10.59 Feet
Base of Aquifer (DTB)	16 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

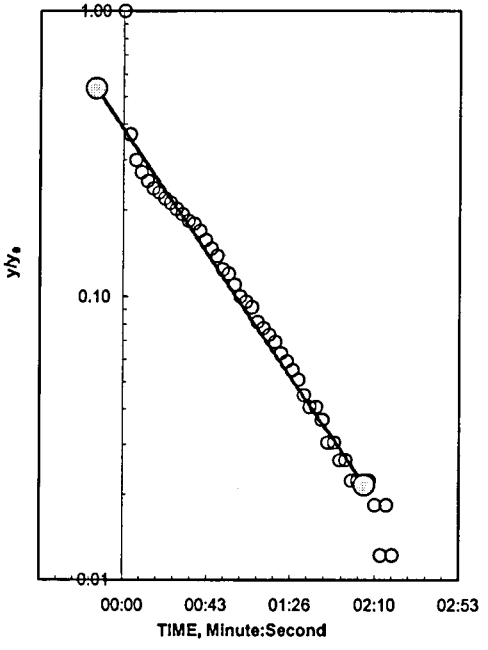
L_{wetted}	4.59 Feet
D =	5.41 Feet
H =	4.59 Feet
L/r_w =	13.35
$y_{0\text{-DISPLACEMENT}}$ =	0.49 Feet
$y_{0\text{-SLUG}}$ =	0.56 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.011
B =	0.299
ln(Re/rw) =	1.682
Re =	1.85 Feet
Slope =	0.010077614 $\log_{10}$/sec
$t_{90\%}$ recovery =	99 sec

Input is consistent.

K =	3.00 Feet/Day
K =	3.47E-05 Feet/sec
K =	1.06E-03 cm/sec



Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-2 (trial #1)
Completed by NewFields on 12/16/2004

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:23.8	3.98
2	0:00:26.8	4.29
3	0:00:29.8	4.32
4	0:00:32.8	4.34
5	0:00:35.8	4.35
6	0:00:38.8	4.35
7	0:00:41.8	4.36
8	0:00:44.8	4.36
9	0:00:47.8	4.37
10	0:00:50.8	4.37
11	0:00:53.8	4.37
12	0:00:56.8	4.38
13	0:00:59.8	4.38
14	0:01:02.8	4.39
15	0:01:05.8	4.39
16	0:01:08.8	4.40
17	0:01:11.8	4.40
18	0:01:14.8	4.41
19	0:01:17.8	4.41
20	0:01:20.8	4.42
21	0:01:23.8	4.42
22	0:01:26.8	4.42
23	0:01:29.8	4.42
24	0:01:32.8	4.43
25	0:01:35.8	4.43
26	0:01:38.8	4.43
27	0:01:41.8	4.44
28	0:01:44.8	4.44
29	0:01:47.8	4.44
30	0:01:50.8	4.44
31	0:01:53.8	4.44
32	0:01:56.8	4.45
33	0:01:59.8	4.45
34	0:02:02.8	4.45
35	0:02:05.8	4.45
36	0:02:08.8	4.45
37	0:02:11.8	4.45
38	0:02:14.8	4.46
39	0:02:17.9	4.46
40	0:02:20.9	4.46
41	0:02:23.9	4.46
42	0:02:26.9	4.46
43	0:02:29.9	4.46
44	0:02:32.9	4.46
45	0:02:35.9	4.46

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-2 (trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

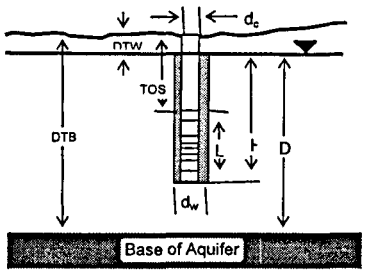
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	4.59 Feet
Depths to:	
water level (DTW)	10.59 Feet
top of screen (TOS)	10.59 Feet
Base of Aquifer (DTB)	16 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

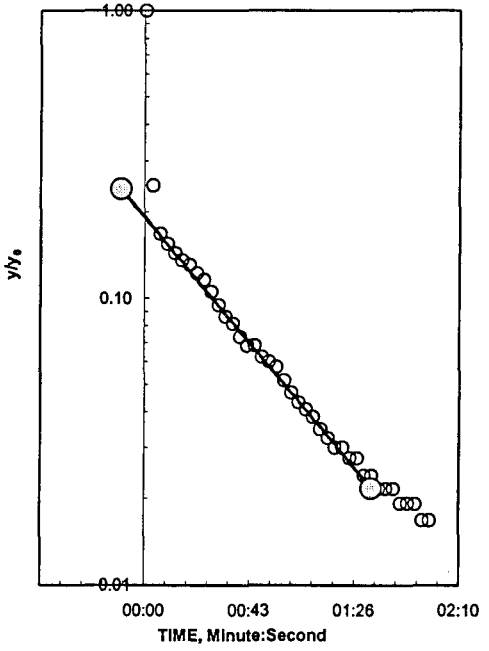
L_{wetted}	4.59 Feet
D =	5.41 Feet
H =	4.59 Feet
L/r_w =	13.35
$y_{0\text{-DISPLACEMENT}}$ =	0.83 Feet
$y_{0\text{-SLUG}}$ =	0.84 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.011
B =	0.299
ln(Re/rw) =	1.682
Re =	1.85 Feet
Slope =	0.010129738 $\log_{10}$/sec
$t_{90\%}$ recovery =	99 sec

Input is consistent.

K =	3.00 Feet/Day
K =	3.47E-05 Feet/sec
K =	1.06E-03 cm/sec



Adjust slope of line to estimate K



Bouwer and Rice analysis of slug test, WRR 1976

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:24.2	3.65
2	0:00:27.2	4.28
3	0:00:30.2	4.34
4	0:00:33.2	4.36
5	0:00:36.2	4.36
6	0:00:39.2	4.37
7	0:00:42.2	4.38
8	0:00:45.2	4.38
9	0:00:48.2	4.39
10	0:00:51.2	4.40
11	0:00:54.2	4.41
12	0:00:57.2	4.41
13	0:01:00.2	4.42
14	0:01:03.2	4.42
15	0:01:06.2	4.43
16	0:01:09.2	4.43
17	0:01:12.2	4.43
18	0:01:15.2	4.43
19	0:01:18.2	4.44
20	0:01:21.2	4.44
21	0:01:24.2	4.45
22	0:01:27.2	4.45
23	0:01:30.2	4.45
24	0:01:33.2	4.45
25	0:01:36.2	4.46
26	0:01:39.2	4.46
27	0:01:42.2	4.46
28	0:01:45.2	4.46
29	0:01:48.2	4.46
30	0:01:51.2	4.46
31	0:01:54.2	4.46
32	0:01:57.2	4.46
33	0:02:00.2	4.47
34	0:02:03.2	4.47
35	0:02:06.2	4.47
36	0:02:09.2	4.47
37	0:02:12.2	4.47
38	0:02:15.2	4.47
39	0:02:18.2	4.47
40	0:02:21.2	4.47

REMARKS:

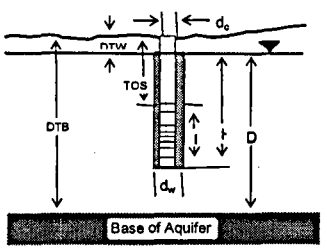
DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-2 (trial #2)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-2A (Trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8 Feet
Depths to:	
water level (DTW)	10.76 Feet
top of screen (TOS)	31.95 Feet
Base of Aquifer (DTB)	45 Feet
Annular Fill:	
across screen -- Coarse Sand	
above screen -- Bentonite	
Aquifer Material -- Medium Sand	



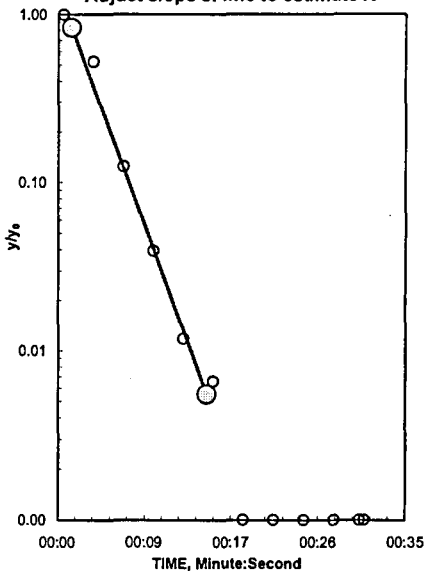
COMPUTED

L_{wetted}	8 Feet
D =	34.24 Feet
H =	29.19 Feet
L/r_w =	23.27
$y_{0\text{-DISPLACEMENT}}$ =	0.76 Feet
$y_{0\text{-SLUG}}$ =	0.70 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.312
B =	0.371
ln(Re/rw) =	2.565
Re =	4.47 Feet
Slope =	0.16071 $\log_{10}$/sec
$t_{90\%}$ recovery =	6 sec

Input is consistent.

K =	40 Feet/Day
K =	5.56E-04 Feet/sec
K =	1.69E-02 cm/sec

Adjust slope of line to estimate K



Reduced Data

Entry	Time, Hr:Min:Sec	Water Level
1	0:00:23.5	21.88
2	0:00:26.5	22.24
3	0:00:29.5	22.55
4	0:00:32.5	22.61
5	0:00:35.5	22.63
6	0:00:38.5	22.64
7	0:00:41.5	22.64
8	0:00:44.5	22.64
9	0:00:47.5	22.64
10	0:00:50.5	22.64
11	0:00:53.5	22.64

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

IDB Oaks Facility, Fort Atkinson, Wisconsin.
MW-2A (trial #1)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-2A (Trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

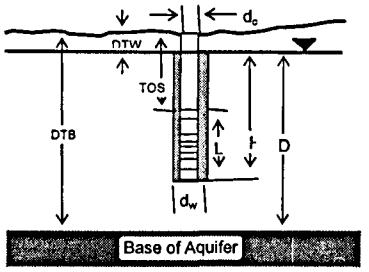
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8 Feet
Depths to:	
water level (DTW)	10.76 Feet
top of screen (TOS)	31.95 Feet
Base of Aquifer (DTB)	45 Feet
Annular Fill:	
across screen -- Coarse Sand	
above screen -- Bentonite	
Aquifer Material -- Medium Sand	

COMPUTED

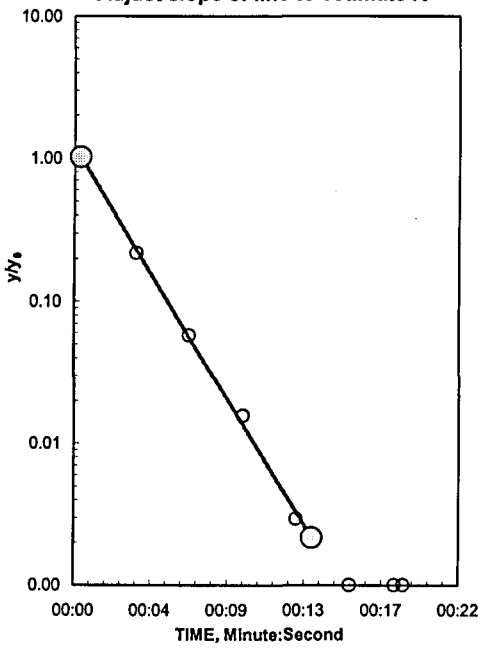
L_{wetted}	8 Feet
D =	34.24 Feet
H =	29.19 Feet
L/r_w =	23.27
$y_{0\text{-DISPLACEMENT}}$ =	1.02 Feet
$y_{0\text{-SLUG}}$ =	0.84 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.312
B =	0.371
ln(Re/rw) =	2.565
Re =	4.47 Feet
Slope =	0.204807 $\log_{10}$/sec
$t_{90\%}$ recovery =	5 sec

Input is consistent.

K =	50 Feet/Day
K =	5.79E-04 Feet/sec
K =	1.76E-02 cm/sec



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:23.6	21.62
2	0:00:26.6	22.42
3	0:00:29.6	22.58
4	0:00:32.6	22.62
5	0:00:35.6	22.64
6	0:00:38.6	22.64
7	0:00:41.6	22.64

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

IDB Oaks Facility, Fort Atkinson, Wisconsin.
MW-2A (trial #2)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-3 (trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

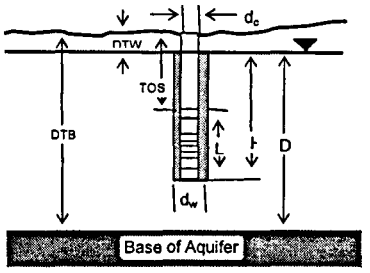
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8.3 Feet
Depths to:	
water level (DTW)	7.09 Feet
top of screen (TOS)	7.09 Feet
Base of Aquifer (DTB)	16 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

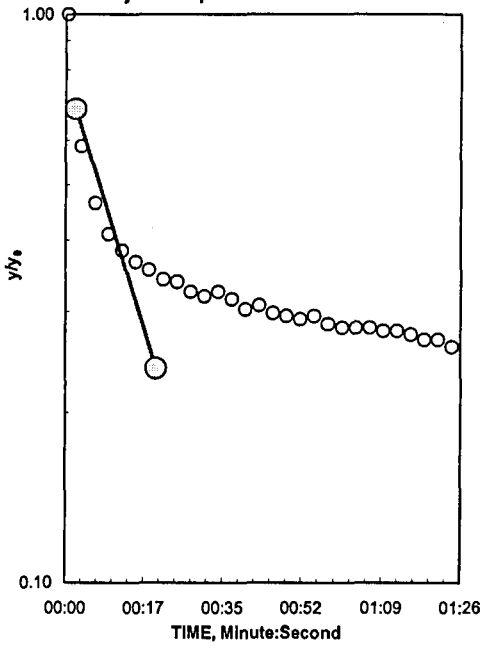
L_{wetted}	8.3 Feet
D =	8.91 Feet
H =	8.3 Feet
L/r_w =	24.15
$y_{0\text{-DISPLACEMENT}}$ =	0.53 Feet
$y_{0\text{-SLUG}}$ =	0.56 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.339
B =	0.378
ln(Re/rw) =	2.216
Re =	3.15 Feet
Slope =	0.025440598 $\log_{10}$/sec
$t_{90\%}$ recovery =	39 sec

Input is consistent.

K =	5.00 Feet/Day
K =	5.79E-05 Feet/sec
K =	1.76E-03 cm/sec



Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-3 (trial #1)
Completed by NewFields on 12/16/2004

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:32.1	6.94
2	0:00:38.1	7.22
3	0:00:44.1	7.26
4	0:00:50.1	7.28
5	0:00:56.1	7.29
6	0:01:02.1	7.30
7	0:01:08.1	7.30
8	0:01:14.1	7.30
9	0:01:20.2	7.31
10	0:01:26.2	7.31
11	0:01:32.2	7.32
12	0:01:38.2	7.32
13	0:01:44.2	7.32
14	0:01:50.2	7.33
15	0:01:56.2	7.33
16	0:02:02.2	7.33
17	0:02:08.2	7.33
18	0:02:14.2	7.33
19	0:02:20.2	7.34
20	0:02:26.2	7.34
21	0:02:32.2	7.34
22	0:02:38.2	7.34
23	0:02:44.2	7.35
24	0:02:50.2	7.35
25	0:02:56.2	7.35
26	0:03:02.2	7.35
27	0:03:08.2	7.35
28	0:03:14.2	7.35
29	0:03:20.2	7.35
30	0:03:26.2	7.35
31	0:03:32.2	7.36
32	0:03:38.2	7.36
33	0:03:44.3	7.36
34	0:03:50.3	7.37
35	0:03:56.3	7.37
36	0:04:02.3	7.37
37	0:04:08.3	7.37
38	0:04:14.3	7.37
39	0:04:20.3	7.37
40	0:04:26.3	7.37
41	0:04:32.3	7.37
42	0:04:38.3	7.37
43	0:04:44.3	7.37
44	0:04:50.3	7.37
45	0:04:56.3	7.37

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-3 (trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

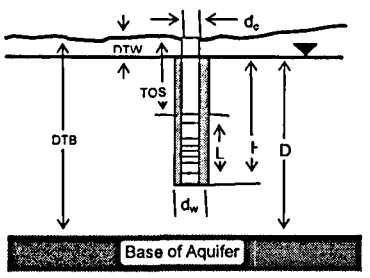
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8.3 Feet
Depths to:	
water level (DTW)	7.09 Feet
top of screen (TOS)	7.09 Feet
Base of Aquifer (DTB)	16 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

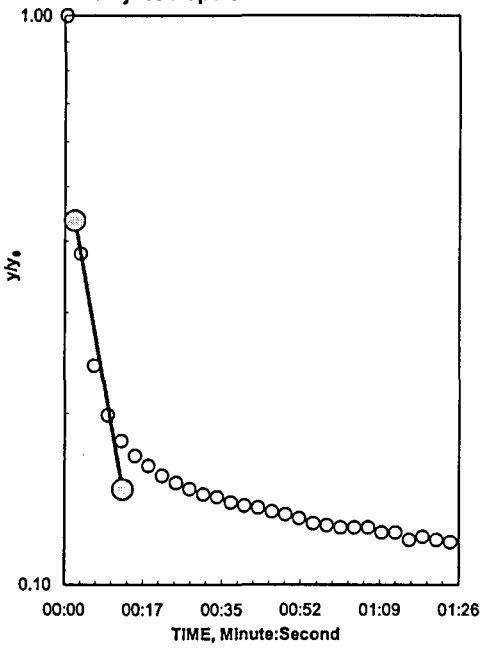
L_{wetted}	8.3 Feet
D =	8.91 Feet
H =	8.3 Feet
L/r_w =	24.15
$y_{0\text{-DISPLACEMENT}}$ =	1.90 Feet
$y_{0\text{-SLUG}}$ =	1.69 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.339
B =	0.378
ln(Re/rw) =	2.216
Re =	3.15 Feet
Slope =	0.044320235 $\log_{10}$/sec
$t_{90\%}$ recovery =	23 sec

Input is consistent.

K =	8.00 Feet/Day
K =	9.26E-05 Feet/sec
K =	2.82E-03 cm/sec



Adjust slope of line to estimate K



Bouwer and Rice analysis of slug test, WRR 1976

REMARKS:

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-3 (trial #2)
Completed by NewFields on 12/16/2004

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:32.9	5.59
2	0:00:38.9	7.03
3	0:00:44.9	7.15
4	0:00:50.9	7.18
5	0:00:56.9	7.20
6	0:01:02.9	7.22
7	0:01:08.9	7.23
8	0:01:14.9	7.23
9	0:01:20.9	7.24
10	0:01:27.0	7.25
11	0:01:33.0	7.25
12	0:01:39.0	7.25
13	0:01:45.0	7.26
14	0:01:51.0	7.26
15	0:01:57.0	7.27
16	0:02:03.0	7.27
17	0:02:09.0	7.27
18	0:02:15.0	7.28
19	0:02:21.0	7.28
20	0:02:27.0	7.29
21	0:02:33.0	7.29
22	0:02:39.0	7.29
23	0:02:45.0	7.29
24	0:02:51.0	7.29
25	0:02:57.0	7.30
26	0:03:03.0	7.30
27	0:03:09.0	7.30
28	0:03:15.0	7.30
29	0:03:21.0	7.31
30	0:03:27.0	7.31
31	0:03:33.0	7.31
32	0:03:39.0	7.31
33	0:03:45.0	7.32
34	0:03:51.1	7.32
35	0:03:57.1	7.32
36	0:04:03.1	7.32
37	0:04:09.1	7.32
38	0:04:15.1	7.32
39	0:04:21.1	7.32
40	0:04:27.1	7.33
41	0:04:33.1	7.33
42	0:04:39.1	7.33
43	0:04:45.1	7.33
44	0:04:51.1	7.33
45	0:04:57.1	7.34

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-4 (trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

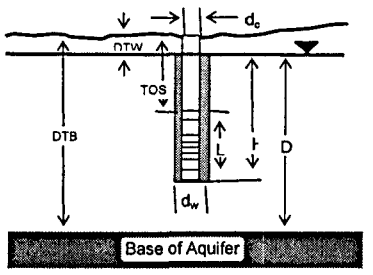
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	9.04 Feet
Depths to:	
water level (DTW)	8.11 Feet
top of screen (TOS)	8.11 Feet
Base of Aquifer (DTB)	18 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

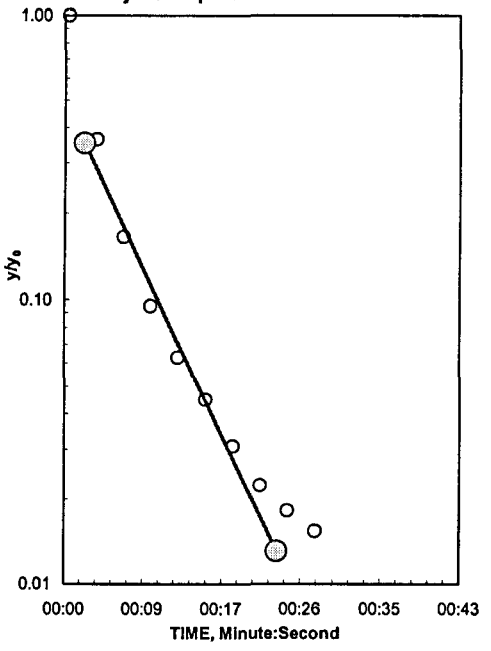
L_{wetted}	9.04 Feet
D =	9.89 Feet
H =	9.04 Feet
L/r_w =	26.30
$y_{0\text{-DISPLACEMENT}}$ =	0.72 Feet
$y_{0\text{-SLUG}}$ =	0.84 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.401
B =	0.392
ln(Re/rw) =	2.266
Re =	3.32 Feet
Slope =	0.067602041 $\log_{10}$/sec
$t_{90\%}$ recovery =	15 sec

Input is consistent.

K =	10.00 Feet/Day
K =	1.16E-04 Feet/sec
K =	3.53E-03 cm/sec



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:34.3	7.66
2	0:00:37.4	8.11
3	0:00:40.4	8.25
4	0:00:43.4	8.30
5	0:00:46.4	8.33
6	0:00:49.4	8.34
7	0:00:52.4	8.35
8	0:00:55.4	8.36
9	0:00:58.4	8.36
10	0:01:01.4	8.36
11	0:01:04.4	8.37
12	0:01:07.4	8.37
13	0:01:10.4	8.37
14	0:01:13.4	8.37
15	0:01:16.4	8.37
16	0:01:19.4	8.37
17	0:01:22.4	8.37
18	0:01:25.4	8.37
19	0:01:28.4	8.37
20	0:01:31.4	8.37
21	0:01:34.4	8.37
22	0:01:37.4	8.37
23	0:01:40.4	8.37
24	0:01:43.4	8.37
25	0:01:46.4	8.37
26	0:01:49.4	8.37
27	0:01:52.4	8.37
28	0:01:55.4	8.37
29	0:01:58.4	8.37
30	0:02:01.4	8.37
31	0:02:04.4	8.37
32	0:02:07.4	8.37
33	0:02:10.4	8.37
34	0:02:13.4	8.37
35	0:02:16.4	8.37

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-4 (trial #1)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-4 (trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

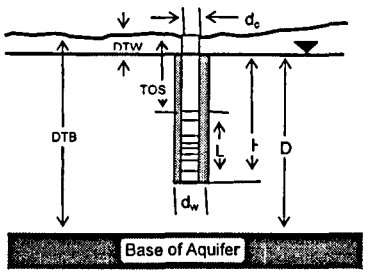
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	9.04 Feet
Depths to:	
water level (DTW)	8.11 Feet
top of screen (TOS)	8.11 Feet
Base of Aquifer (DTB)	18 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

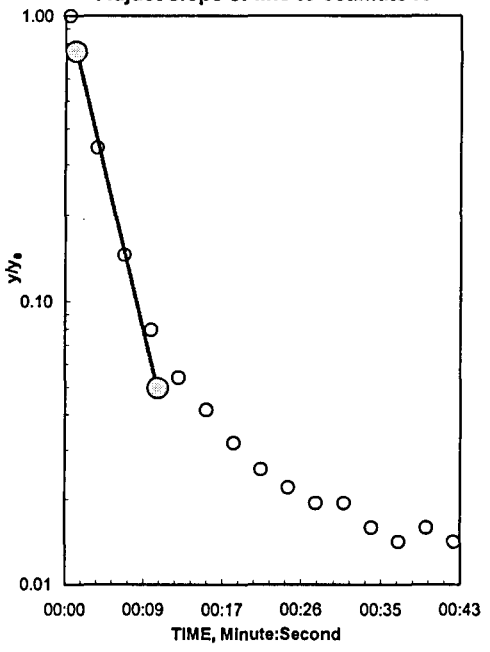
L_{wetted}	9.04 Feet
D =	9.89 Feet
H =	9.04 Feet
L/r_w =	26.30
$y_{0\text{-DISPLACEMENT}}$ =	1.13 Feet
$y_{0\text{-SLUG}}$ =	0.98 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.401
B =	0.392
ln(Re/rw) =	2.266
Re =	3.32 Feet
Slope =	0.129960317 $\log_{10}$/sec
$t_{90\%}$ recovery =	8 sec

Input is consistent.

K =	20.00 Feet/Day
K =	2.31E-04 Feet/sec
K =	7.06E-03 cm/sec



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:34.6	7.25
2	0:00:37.6	8.00
3	0:00:40.6	8.22
4	0:00:43.6	8.30
5	0:00:46.6	8.32
6	0:00:49.6	8.34
7	0:00:52.6	8.35
8	0:00:55.6	8.36
9	0:00:58.6	8.36
10	0:01:01.6	8.36
11	0:01:04.6	8.36
12	0:01:07.6	8.37
13	0:01:10.6	8.37
14	0:01:13.6	8.37
15	0:01:16.6	8.37
16	0:01:19.6	8.37
17	0:01:22.6	8.37
18	0:01:25.6	8.37
19	0:01:28.6	8.37
20	0:01:31.6	8.37
21	0:01:34.6	8.37
22	0:01:37.6	8.37
23	0:01:40.6	8.37
24	0:01:43.6	8.37
25	0:01:46.6	8.37
26	0:01:49.6	8.37
27	0:01:52.6	8.37
28	0:01:55.6	8.38
29	0:01:58.6	8.37
30	0:02:01.6	8.37
31	0:02:04.6	8.37
32	0:02:07.6	8.37
33	0:02:10.6	8.37
34	0:02:13.6	8.37
35	0:02:16.6	8.37

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-4 (trial #2)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-4A (Trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

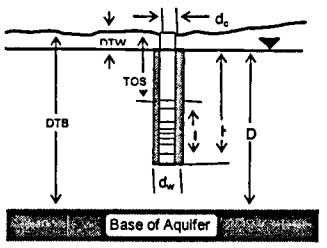
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8 Feet
Depths to:	
water level (DTW)	7.99 Feet
top of screen (TOS)	33.05 Feet
Base of Aquifer (DTB)	45 Feet
Annular Fill:	
across screen – Coarse Sand	
above screen – Bentonite	
Aquifer Material – Medium Sand	

COMPUTED

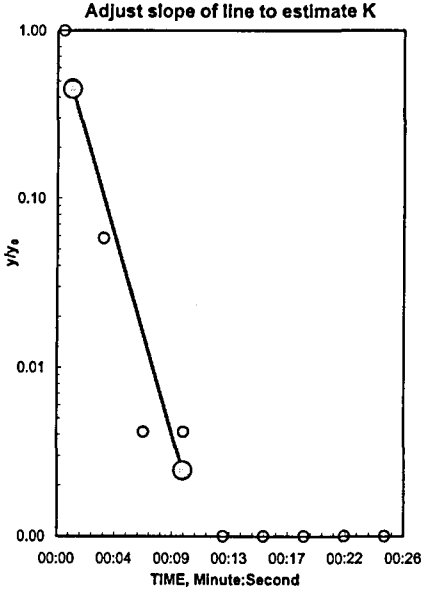
L_{wetted}	8 Feet
D =	37.01 Feet
H =	33.06 Feet
L/r_w =	23.27
$y_{0\text{-DISPLACEMENT}}$ =	1.21 Feet
$y_{0\text{-SLUG}}$ =	1.13 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.312
B =	0.371
ln(Re/rw) =	2.637
Re =	4.80 Feet
Slope =	0.273196 $\log_{10}$/sec
$t_{90\%}$ recovery =	4 sec

Input is consistent.

K =	60 Feet/Day
K =	8.33E-04 Feet/sec
K =	2.54E-02 cm/sec



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:35.3	27.43
2	0:00:38.3	28.57
3	0:00:41.3	28.63
4	0:00:44.3	28.63
5	0:00:47.3	28.64
6	0:00:50.3	28.64
7	0:00:53.3	28.64
8	0:00:56.3	28.64
9	0:00:59.3	28.64
10	0:01:02.3	28.64
11	0:01:05.3	28.64
12	0:01:08.3	28.64
13	0:01:11.3	28.64
14	0:01:14.3	28.64
15	0:01:17.3	28.65

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

IDB Oaks Facility, Fort Atkinson, Wisconsin.
MW-4A (trial #1)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-4A (Trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

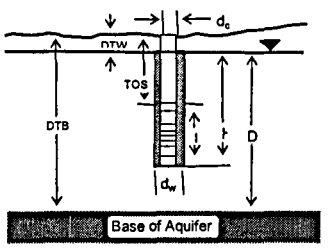
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8 Feet
Depths to:	
water level (DTW)	7.99 Feet
top of screen (TOS)	33.05 Feet
Base of Aquifer (DTB)	45 Feet
Annular Fill:	
across screen -- Coarse Sand	
above screen -- Bentonite	
Aquifer Material -- Medium Sand	

COMPUTED

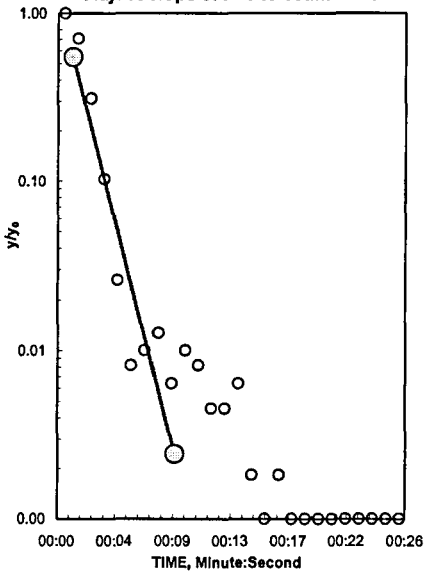
L_{wetted}	8 Feet
D =	37.01 Feet
H =	33.06 Feet
L/r_w =	23.27
$y_{0\text{-DISPLACEMENT}}$ =	1.10 Feet
$y_{0\text{-SLUG}}$ =	1.13 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.312
B =	0.371
ln(Re/rw) =	2.637
Re =	4.80 Feet
Slope =	0.309343 $\log_{10}$/sec
$t_{90\%}$ recovery =	3 sec

Input is consistent.

K =	70 Feet/Day
K =	9.72E-04 Feet/sec
K =	2.96E-02 cm/sec



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:35.4	27.58
2	0:00:36.4	27.89
3	0:00:37.4	28.33
4	0:00:38.4	28.56
5	0:00:39.4	28.64
6	0:00:40.4	28.66
7	0:00:41.4	28.66
8	0:00:42.4	28.66
9	0:00:43.4	28.66
10	0:00:44.4	28.66
11	0:00:45.4	28.66
12	0:00:46.4	28.67
13	0:00:47.4	28.67
14	0:00:48.4	28.66
15	0:00:49.4	28.67
16	0:00:50.4	28.67
17	0:00:51.4	28.67
18	0:00:52.4	28.67
19	0:00:53.4	28.67
20	0:00:54.4	28.67
21	0:00:55.4	28.67
22	0:00:56.4	28.67
23	0:00:57.4	28.67
24	0:00:58.4	28.67
25	0:00:59.4	28.67
26	0:01:00.4	28.67
27	0:01:01.4	28.67

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

IDB Oaks Facility, Fort Atkinson, Wisconsin.
MW-4A (trial #2)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-4A (Trial #3)
Date: 12/16/2004
Time: 0:00

INPUT

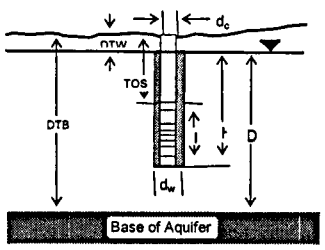
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	8 Feet
Depths to:	
water level (DTW)	7.99 Feet
top of screen (TOS)	33.05 Feet
Base of Aquifer (DTB)	45 Feet
Annular Fill:	
across screen -- Coarse Sand	
above screen -- Bentonite	
Aquifer Material -- Medium Sand	

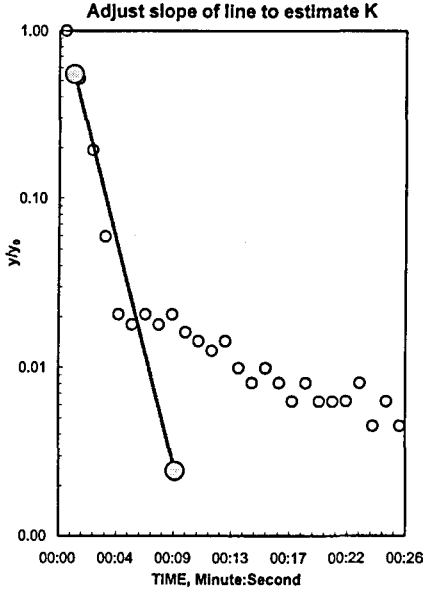
COMPUTED

L_{wetted}	8 Feet
D =	37.01 Feet
H =	33.06 Feet
L/r_w =	23.27
$y_{0\text{-DISPLACEMENT}}$ =	1.11 Feet
$y_{0\text{-SLUG}}$ =	1.13 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.312
B =	0.371
ln(Re/rw) =	2.637
Re =	4.80 Feet
Slope =	0.309343 $\log_{10}$/sec
$t_{90\%}$ recovery =	3 sec

Input is consistent.

K =	70 Feet/Day
K =	9.72E-04 Feet/sec
K =	2.96E-02 cm/sec





Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:35.5	27.57
2	0:00:36.5	28.11
3	0:00:37.5	28.46
4	0:00:38.5	28.61
5	0:00:39.5	28.66
6	0:00:40.5	28.66
7	0:00:41.5	28.66
8	0:00:42.5	28.66
9	0:00:43.5	28.66
10	0:00:44.5	28.66
11	0:00:45.5	28.66
12	0:00:46.5	28.67
13	0:00:47.5	28.66
14	0:00:48.5	28.67
15	0:00:49.5	28.67
16	0:00:50.5	28.67
17	0:00:51.5	28.67
18	0:00:52.5	28.67
19	0:00:53.5	28.67
20	0:00:54.5	28.67
21	0:00:55.5	28.67
22	0:00:56.5	28.67
23	0:00:57.5	28.67
24	0:00:58.5	28.67
25	0:00:59.5	28.67
26	0:01:00.5	28.67
27	0:01:01.5	28.68
28	0:01:02.5	28.67
29	0:01:03.5	28.67
30	0:01:04.5	28.68

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

IDB Oaks Facility, Fort Atkinson, Wisconsin.
MW-4A (trial #3)
Completed by NewFields on 12/16/2004

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-5 (trial #1)
Date: 12/16/2004
Time: 0:00

INPUT

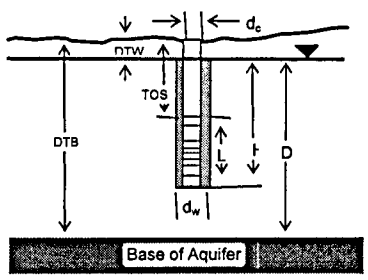
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	6.77 Feet
Depths to:	
water level (DTW)	7.83 Feet
top of screen (TOS)	7.83 Feet
Base of Aquifer (DTB)	16 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

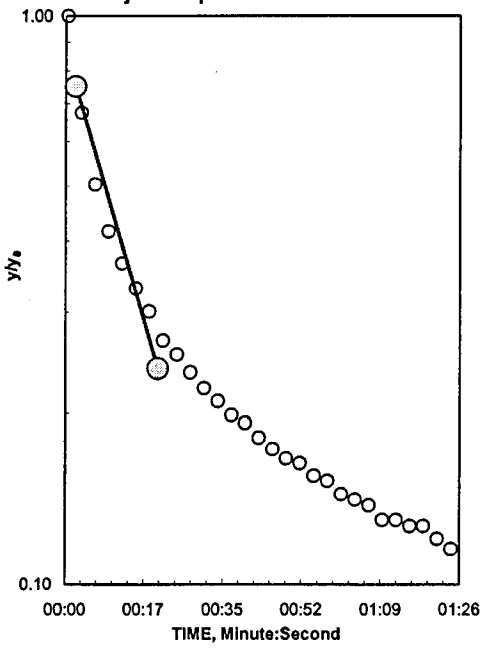
L_{wetted}	6.77 Feet
D =	8.17 Feet
H =	6.77 Feet
L/r_w =	19.69
$y_{0\text{-DISPLACEMENT}}$ =	0.62 Feet
$y_{0\text{-SLUG}}$ =	0.56 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.191
B =	0.343
ln(Re/rw) =	1.981
Re =	2.49 Feet
Slope =	0.027262156 $\log_{10}$/sec
$t_{90\%}$ recovery =	37 sec

Input is consistent.

K =	6.00 Feet/Day
K =	6.94E-05 Feet/sec
K =	2.12E-03 cm/sec



Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-5 (trial #1)
Completed by NewFields on 12/16/2004

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:28.1	7.58
2	0:00:31.1	7.79
3	0:00:34.1	7.89
4	0:00:37.1	7.95
5	0:00:40.1	7.98
6	0:00:43.1	8.00
7	0:00:46.1	8.02
8	0:00:49.2	8.04
9	0:00:52.2	8.05
10	0:00:55.2	8.06
11	0:00:58.2	8.07
12	0:01:01.2	8.08
13	0:01:04.2	8.08
14	0:01:07.2	8.09
15	0:01:10.2	8.09
16	0:01:13.2	8.10
17	0:01:16.2	8.10
18	0:01:19.2	8.10
19	0:01:22.2	8.11
20	0:01:25.2	8.11
21	0:01:28.2	8.12
22	0:01:31.2	8.12
23	0:01:34.2	8.12
24	0:01:37.2	8.13
25	0:01:40.2	8.13
26	0:01:43.2	8.13
27	0:01:46.2	8.13
28	0:01:49.2	8.13
29	0:01:52.2	8.13
30	0:01:55.2	8.14
31	0:01:58.2	8.14
32	0:02:01.2	8.14
33	0:02:04.2	8.14
34	0:02:07.2	8.14
35	0:02:10.2	8.14
36	0:02:13.2	8.15
37	0:02:16.2	8.15
38	0:02:19.2	8.15
39	0:02:22.2	8.15
40	0:02:25.2	8.15
41	0:02:28.2	8.15
42	0:02:31.2	8.15
43	0:02:34.2	8.15
44	0:02:37.2	8.16
45	0:02:40.2	8.15

WELL ID: DB OAKS, FORT ATKINSON

Local ID: MW-5 (trial #2)
Date: 12/16/2004
Time: 0:00

INPUT

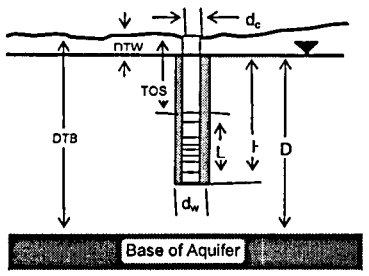
Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	6.77 Feet
Depths to:	
water level (DTW)	7.83 Feet
top of screen (TOS)	7.83 Feet
Base of Aquifer (DTB)	16 Feet
Annular Fill:	
across screen --	Medium Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand

COMPUTED

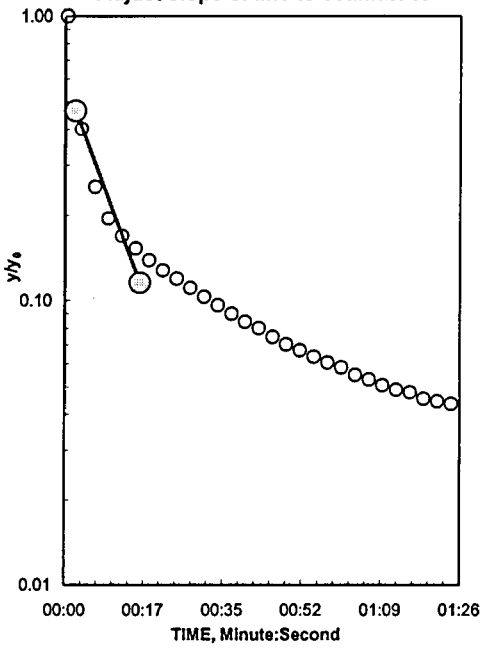
L_{wetted}	6.77 Feet
D =	8.17 Feet
H =	6.77 Feet
L/r_w =	19.69
$y_{0\text{-DISPLACEMENT}}$ =	2.09 Feet
$y_{0\text{-SLUG}}$ =	1.83 Feet
From look-up table using L/r_w	
Partial penetrate A =	2.191
B =	0.343
ln(Re/rw) =	1.981
Re =	2.49 Feet
Slope =	0.042438272 $\log_{10}$/sec
$t_{90\%}$ recovery =	24 sec

Input is consistent.

K =	9.00 Feet/Day
K =	1.04E-04 Feet/sec
K =	3.18E-03 cm/sec



Adjust slope of line to estimate K



Bouwer and Rice analysis of slug test, WRR 1976

REMARKS:

DB Oaks Facility, Fort Atkinson, Wisconsin.
MW-5 (trial #2)
Completed by NewFields on 12/16/2004

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:28.5	6.12
2	0:00:31.5	7.37
3	0:00:34.5	7.68
4	0:00:37.5	7.80
5	0:00:40.5	7.85
6	0:00:43.5	7.89
7	0:00:46.5	7.92
8	0:00:49.5	7.94
9	0:00:52.5	7.96
10	0:00:55.5	7.98
11	0:00:58.5	7.99
12	0:01:01.5	8.01
13	0:01:04.5	8.02
14	0:01:07.5	8.03
15	0:01:10.5	8.04
16	0:01:13.5	8.05
17	0:01:16.5	8.06
18	0:01:19.5	8.07
19	0:01:22.5	8.07
20	0:01:25.5	8.08
21	0:01:28.5	8.08
22	0:01:31.5	8.09
23	0:01:34.5	8.10
24	0:01:37.5	8.10
25	0:01:40.5	8.10
26	0:01:43.5	8.11
27	0:01:46.5	8.11
28	0:01:49.5	8.11
29	0:01:52.5	8.12
30	0:01:55.5	8.12
31	0:01:58.5	8.12
32	0:02:01.5	8.13
33	0:02:04.5	8.13
34	0:02:07.5	8.13
35	0:02:10.5	8.13
36	0:02:13.5	8.13
37	0:02:16.5	8.14
38	0:02:19.5	8.14
39	0:02:22.5	8.14
40	0:02:25.5	8.14
41	0:02:28.5	8.15
42	0:02:31.5	8.15
43	0:02:34.5	8.15
44	0:02:37.5	8.15
45	0:02:40.5	8.15