

Hydrostratigraphic Database of West-Central Wisconsin



Site:	Hudson Sanitary Landfill
Location:	Hudson, St. Croix County, Wisconsin
Unit Evaluated:	Cambrian Tunnel City, Wonewoc

File includes excerpts from:

Braun Environmental Laboratories, 1990, Infield Conditions Report, Hudson Sanitary Landfill, Hudson, Wisconsin, on file at Wisconsin Department of Natural Resources.

- Text: geology and hydrogeology discussion (a normal fault is inferred)
- Figures: site plan, cross-sections, potentiometric surface maps
- Boring logs

SW90-003 INFIELD CONDITIONS REPORT
Hudson Sanitary Landfill
Hudson, WI



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1.0 INTRODUCTION

This report discusses work performed on the Hudson Sanitary Landfill between August, 1989 and April, 1990. Information and results of work performed previously on this SITE are included in the Groundwater Monitoring Plan (Braun) dated January 19, 1989 and attached as Appendix 1. In that plan is information required under sections (1) - (4) of NR508.20. This report contains the remaining information for the Infield Conditions Report requirements except for the gas monitoring requirements, which will be addressed at a later date.

1.1. Purpose of Work: Under contract to the City of Hudson, Braun conducted environmental testing to determine the hydrogeologic conditions at the landfill and determine possible response actions.

1.2. Scope of Services: The project's scope of services consisted of the following:

- Implementation of the approved work plan for groundwater monitoring - including soil borings, soil sampling and testing, and monitor well installation;
- Meetings with the City of Hudson and the Wisconsin Department of Natural Resources (DNR);
- Chemical analysis of samples from private residential water supply wells surrounding the landfill; and
- Preparation of this report to present the results of the described services.



be noted this lead level is below the federal Primary Drinking Water limit of 50 ug/L, and also under the 20 ug/L federal limit currently under consideration. Therefore, based on the above results, there is no indication that the landfill has impacted the local residential water supply.

4.0 DATA ANALYSIS

4.1 Geologic Interpretation: The subsurface investigation at the landfill site during August and September of 1989 aided in determining the various thicknesses of the Cambrian bedrock units and overlying Superior Lobe glacial deposits.

The thickness of each lithostratigraphic unit encountered during drilling appears consistent with the thicknesses shown in Figure 4 by Middleton. This data is also consistent with the lithostratigraphic units encountered at municipal well number 5 and 7 approximately 2300 feet southwest and 3400 feet west of the western landfill boundary, respectively. Plate 3 displays a cross section including the municipal wells. The cross section line is shown in Figure 3. The wells have been projected onto the line. A horizontal variation exists between MW-2 and MW-1, whereby the Franconia Formation is placed adjacent to and at the same elevation as the Ironston Formation. The placement of a dip-slip normal fault appears to be the likely mechanism to explain this horizontal inconsistency (see Plates 2 and 3). The displacement along the fault placed between MW-1 and MW-2 does agree with the measured vertical offset of 46 meters of identical lithostratigraphic units in Hudson and North Hudson (Middleton, 1989).

The placement of a dip-slip normal fault between MW-1 and MW-2 seems plausible based on occasional losses of large volume of drilling mud at various depths while drilling through the Cambrian bedrock geologic units. In particular, the loss of 165 gallons of drilling mud from the depth of 103.5 feet to 106.5 feet at MW-2 may be due to tension fractures associated with a normal fault. It is also possible that the occasional losses of drilling mud mark the transition from less permeable siltstone and shale units to more permeable sandstone units.

A surface cover of glacial outwash of varying thickness exists throughout the boundaries of the landfill where it has not been replaced by landfill debris. The thickness of this Superior Lobe, glacial outwash material varies from nearly 45 feet thick on the northern boundary of the landfill along Krattley Lane to 72 feet thick near the southwest corner of the landfill. This geologic unit thickens towards the west to a thickness of 115 feet and 140 feet at municipal wells number 5 and 7, respectively. These thicknesses may include alluvium carried by the St. Croix River and deposited in the vicinity of these two wells. As stated above, landfill debris was encountered while drilling at MW-4 from the surface to 10.5 feet below grade.

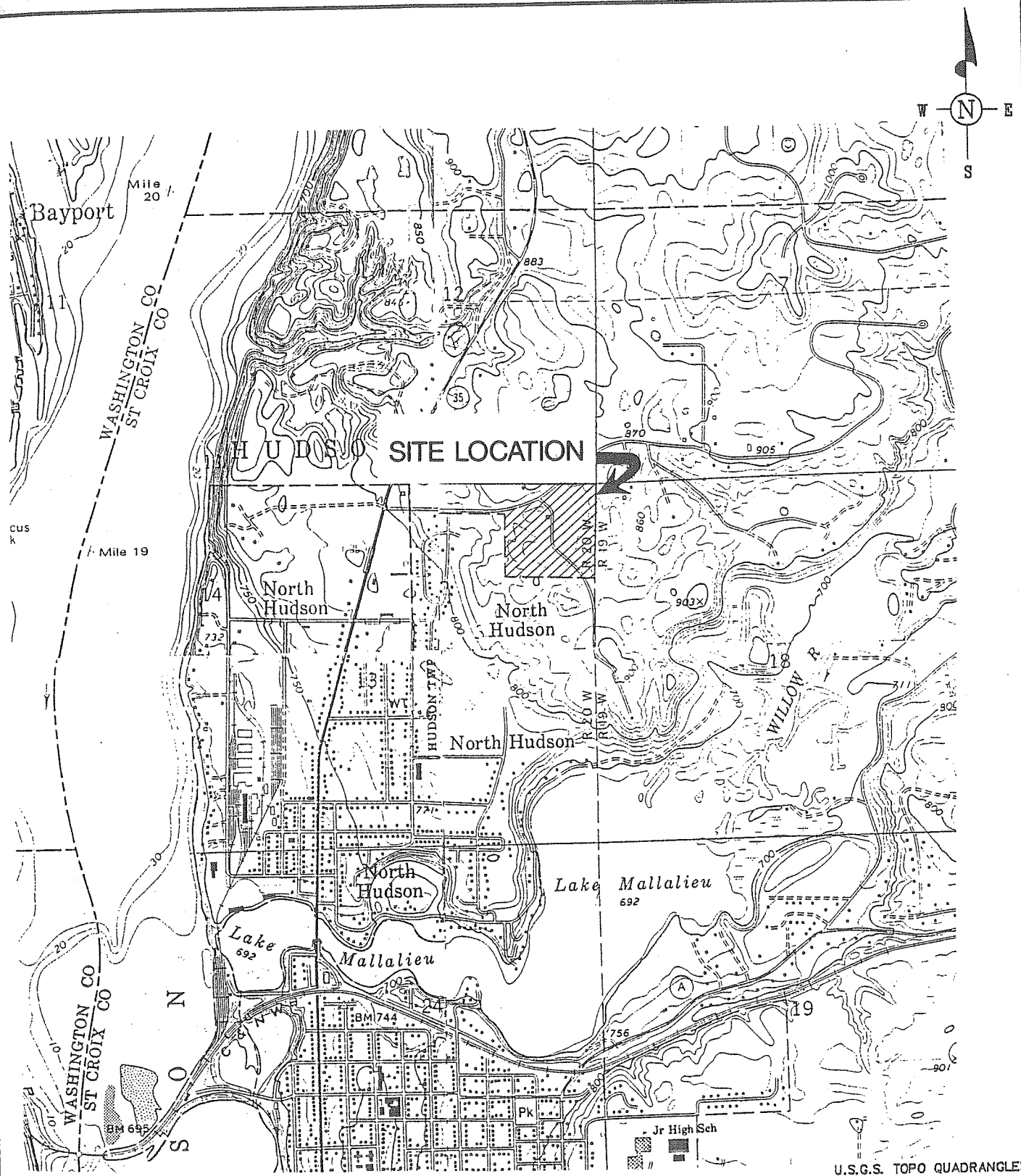
4.2 Groundwater Interpretation: Several wet to waterbearing zones were observed while drilling through the Franconia Formation. These wet to waterbearing zones appear to generally coincide with sandstone units, and therefore may represent perched layers above underlying shale beds. The saturated zone at MW-4 within the (Superior Lobe) glacial outwash material was identified at approximately 58 feet where a poorly-graded sand with silt was interbedded with gravel and cobble layers.

The transient water conditions (initial saturation followed by dry conditions) may reflect draining of localized perched zones. They may also be attributable to downward movement of saturated conditions in response to recharge events.

NR508 requires a water balance be performed for landfills as part of the In-Field Conditions Report. Similar to the methane monitoring, it is anticipated that the water balance would be included as part of developing final closure designs for the landfill.

4.3 Groundwater Standards: As discussed above, the analyses of groundwater from residential wells in the vicinity of the landfill did not appear to detect contaminants. Therefore, a discussion of groundwater standards is not relevant other than to indicate that some of the residential water supplies do exceed lead and iron levels specified in the Wisconsin Administrative Code (NR140.10).



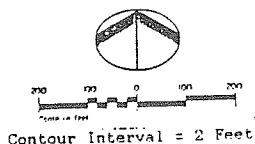
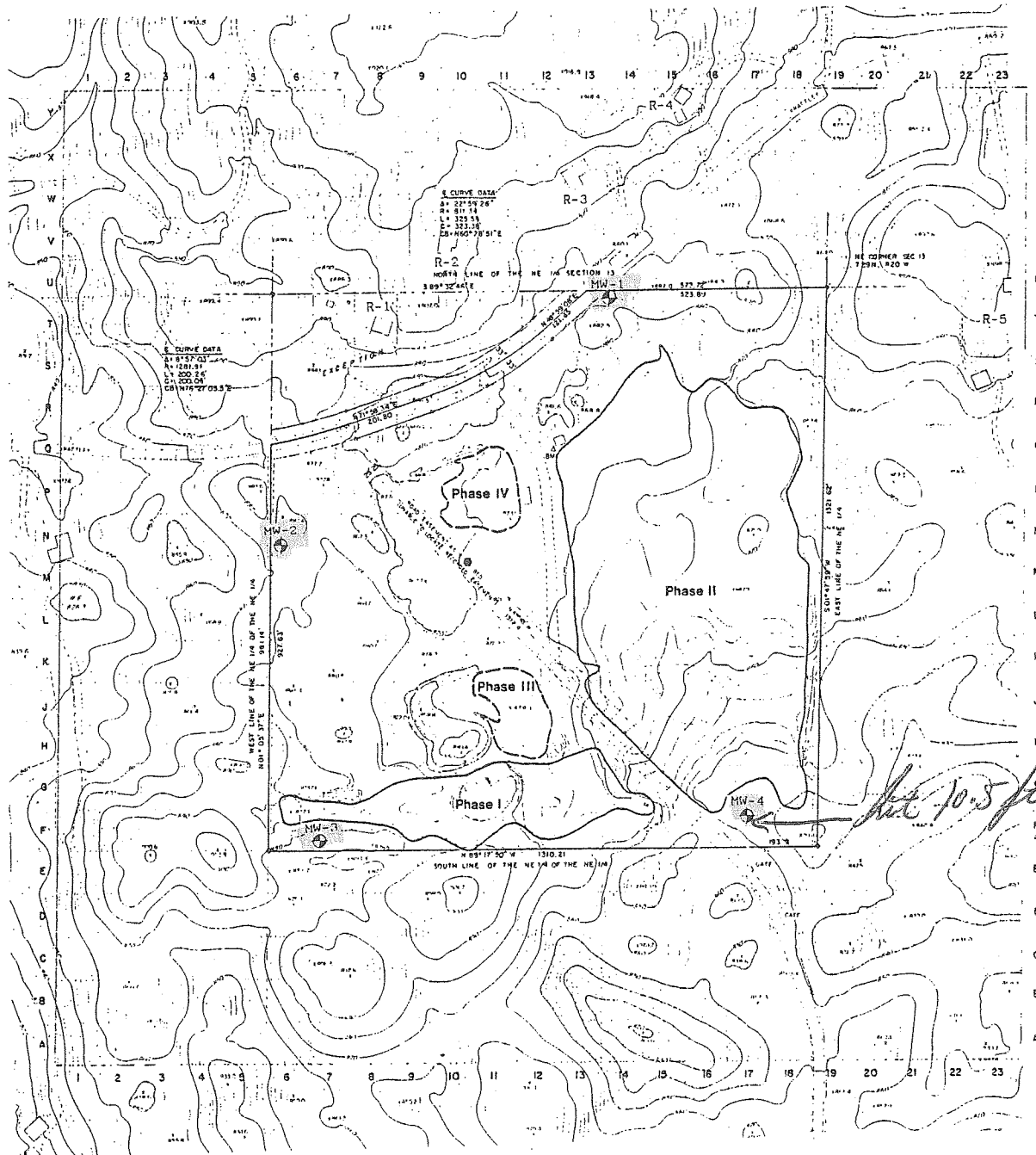


U.S.G.S. TOPO QUADRANGLES:
 Northline
 Somerset South
 Hudson
 Stillwater

BRAUN
 ENVIRONMENTAL LABORATORIES
 INCORPORATED

TITLE SITE LOCATION MAP Hudson Sanitary Landfill Hudson, Wisconsin		
DRAWN BY: LMH	DWG.No. SW90-003B	APP'D BY: LMH
	JOB I.D.# SW90-003	PLOT SCALE

REVISED		SHEET
DATE	INT	
		1
		OF 7
SCALE	1"=2000'	FIGURE# 1



**Bonestroo
Rosene
Anderlik &
Associates**

Engineers & Architects
St. Paul, Minnesota

Aerial Survey April 18, 1985
Ground Survey November 14, 1988

- Property Boundary
- Contour Line
- Active Fill Area
- Inactive Fill Area
- Road
- Building
- Treeline
- Benchmark
- Monitoring Well
- Residential Well
- Abandoned Well

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INCORPORATED

REDUCED SITE MAP
Hudson Sanitary Landfill
Hudson, Wisconsin

DRAWN BY: SMT

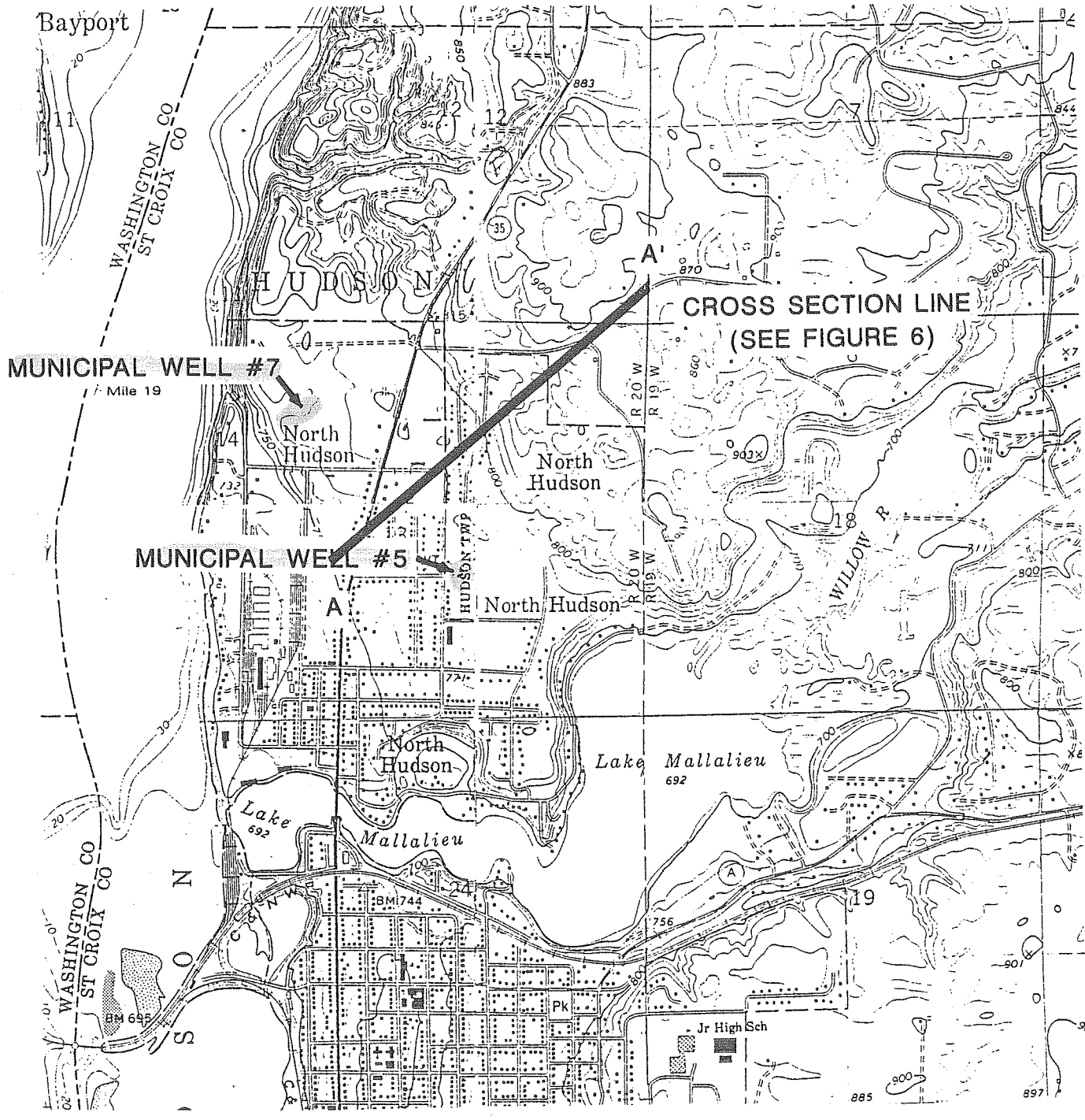
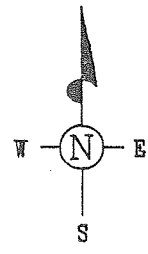
DWG. No. SW90-003

APP'D BY: LHM

JOB I.D.# SW90-03

PLOT SCALE 1:1

REVISED		SHEET
DATE	INT	
6-20-90	LMH	2
		OF 7
SCALE 1:24000		FIGURE# 2

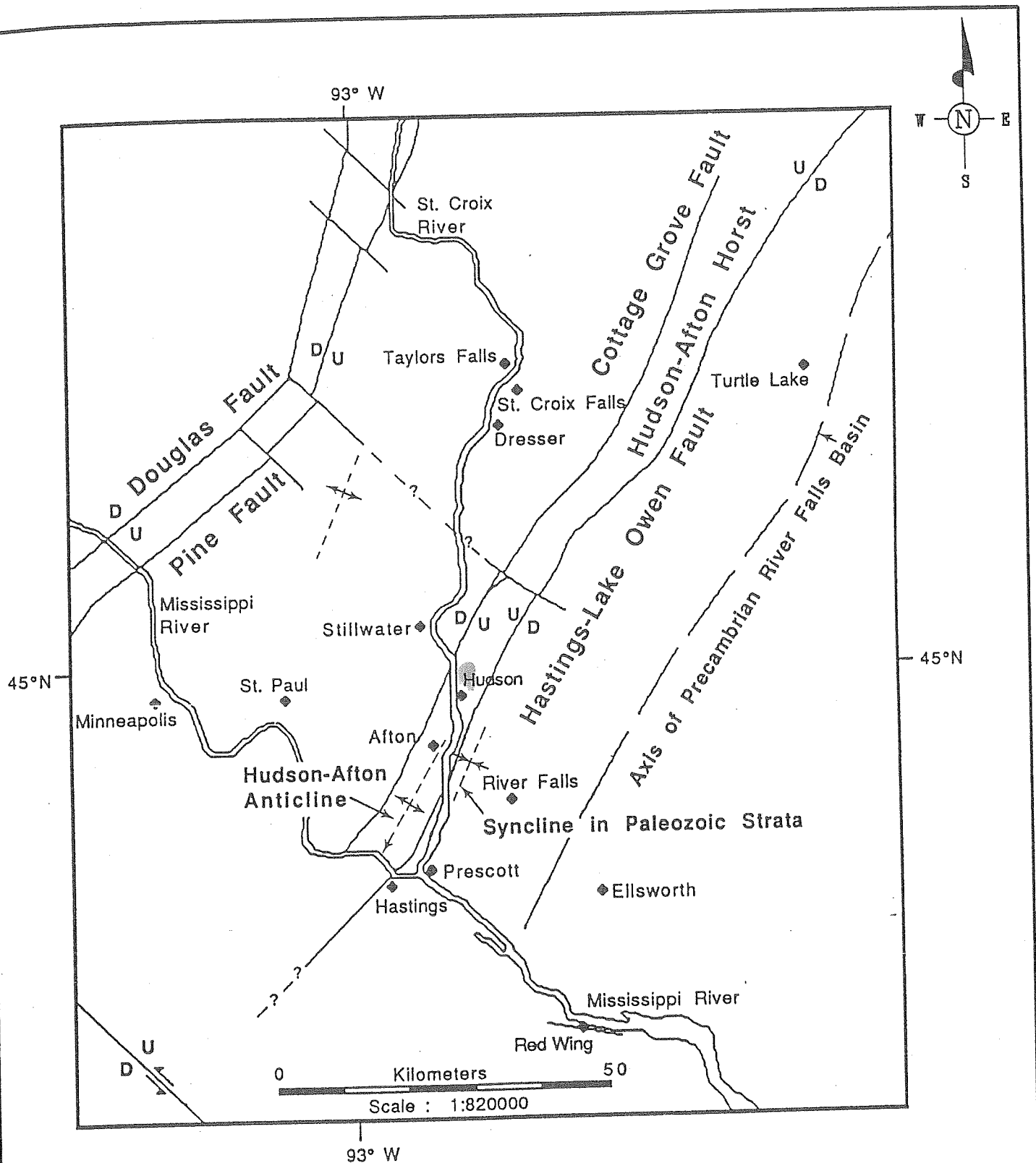


BRAUN
ENVIRONMENTAL LABORATORIES
INCORPORATED

TITLE MUNICIPAL WELL LOCATION (#5 AND #7)
Hudson Sanitary Landfill
Hudson, Wisconsin

DRAWN BY: LMH	DWG.No. SW90-003M	APP'D BY: LMH
	JOB I.D.# SW90-003	PLOT SCALE

REVISED		SHEET
DATE	INT	
		3
		OF
		7
SCALE		FIGURE# 3



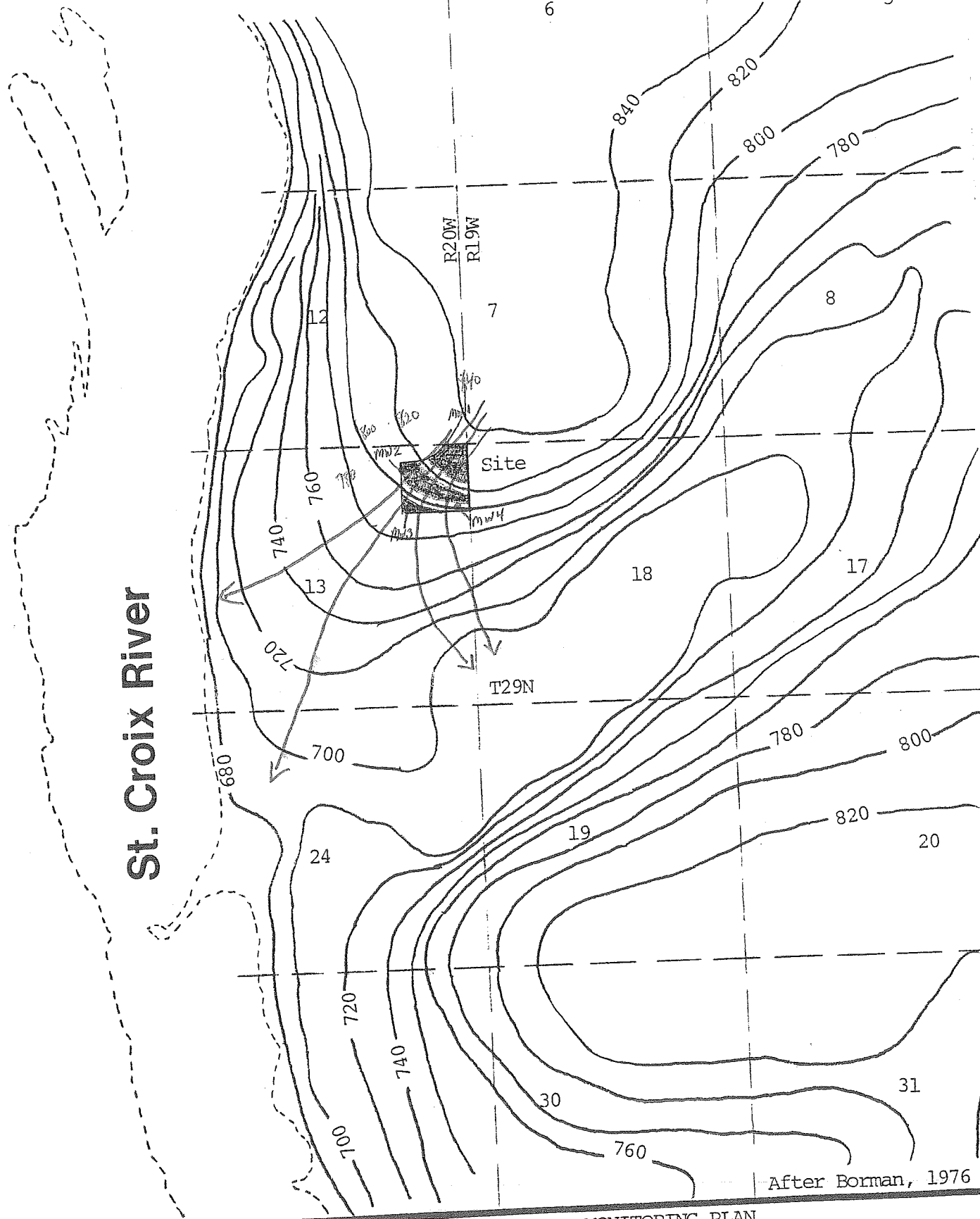
Part of the central structural region of the Midcontinental Rift system, based upon maps by Dutton and Bradley (1970), Morey and Mudrey (1972), Morey and Ojakangas (1982), Jirsa et al. (1986) and Mudrey et al. (1987).

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ENVIRONMENTAL LABORATORIES
INCORPORATED

TITLE STRUCTURAL MAP
Hudson Sanitary Landfill
Hudson, Wisconsin

DRAWN BY: LMH	DWG.No.SW90-003S	APP'D BY: LMH
	JOB I.D.# SW90-003	PLOT SCALE

REVISED		SHEET 5
DATE	INT	
		OF 7
SCALE		FIGURE# 4



After Borman, 1976

BRAUN

SW89-001 GROUNDWATER MONITORING PLAN
Hudson Sanitary Landfill
Hudson Township, WI
Groundwater Contour Map

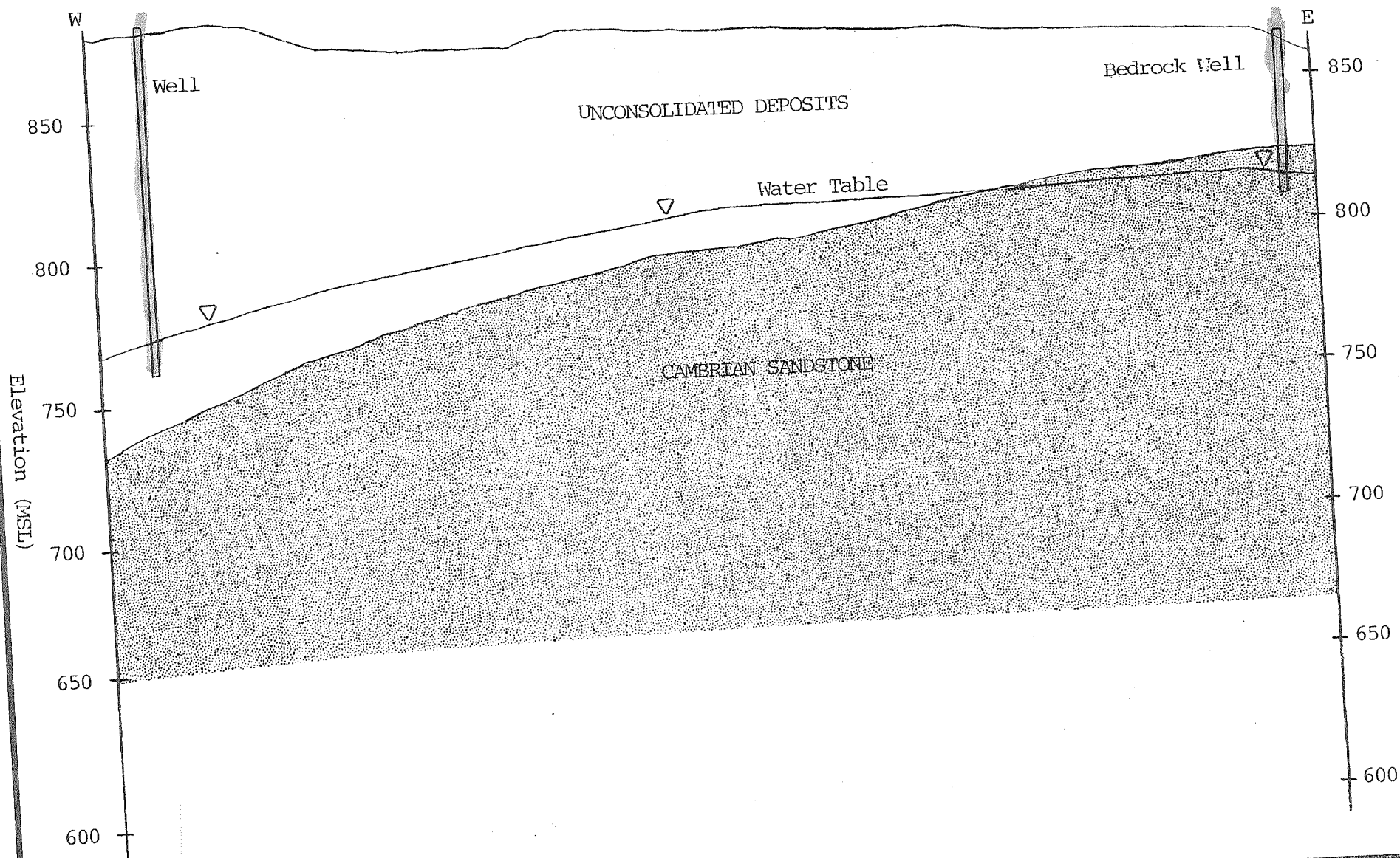
Date: 1-11-89

Revised:

Drawn: KNZ

Scale: 1:33,360

FIGURE 10



BRAUN

SW89-001 GROUNDWATER MONITORING PLAN
Hudson Sanitary Landfill
Hudson Township, Wisconsin
Inferred Geologic Cross Section

Date: 1-10-89

Revised:

Drawn: KNZ

Scale: Horiz: 1"=150'
Vert: 1"=50'
Vert. Exag. 3X

LOG OF BORING



PROJECT: SW90-003 Hudson Sanitary Landfill City of Hudson Hudson, Wisconsin	BORING: MW-1 LOCATION: See site plan. DATE: 8/28/89 SCALE: 1" = 4'
--	--

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
878.0	0.0					
877.0	1.0	SP SM SP	POORLY GRADED SAND with SILT, very fine- to fine-grained, with Roots, black, moist. (Topsoil)			
			POORLY GRADED SAND, fine- to medium-grained, with trace Gravel, red brown, moist, medium dense. (Glacial Outwash)	9		
			- layer of Cobbles at 12.5 feet.	14		
864.0	14.0	SP	POORLY GRADED SAND, fine- to medium-grained, with trace Gravel, red brown, moist, loose. (Glacial Outwash)	10		
			- brown, medium dense.	9		
				14		
849.0	29.0	SM	SILTY SAND, fine-grained, with Gravel, red brown, moist, very stiff. (Glacial Outwash)	21		
846.0	32.0					

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: **MW-1** (cont.)

LOCATION:

See site plan.

DATE: 8/28/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
		SM	SILTY SAND, fine-grained, with Gravel, red brown, <u>moist</u> , very stiff. (Glacial Outwash)			
839.0	39.0		- layer Gravel at 38.5 feet.			
		ML	SILT, with trace Gravel and lenses cemented Sand, yellow green, <u>moist</u> , very stiff. (Glacial Till)			
834.0	44.0		SANDSTONE, fine- to medium-grained, iron-stained yellow, <u>wet to waterbearing</u> , very dense. (Iron-ton Formation)			
				16/ 200/ 5"		
				200/ 5"		
				300/ 4"		
				400/ 3"		
815.0	63.0		END OF BORING			Monitoring well installed at 63.0 feet.

53.0

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING:

MW-2

LOCATION:

See site plan.

DATE: 8/24/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
874.0	0.0	SP SM	POORLY GRADED SAND with SILT, fine-grained, with trace Gravel and Cobbles, brown, <u>moist</u> , medium dense. (Glacial Outwash)			
			- with layer Cobbles.	11		
865.0	9.0	SP	POORLY GRADED SAND, medium- to coarse-grained, with Gravel, red brown, <u>wet</u> , medium dense. (Glacial Outwash)	20		
			- moist, loose	12		
				9		
850.0	24.0	SP SM	POORLY GRADED SAND with SILT, very fine- to fine-grained, with trace Gravel, red brown, <u>moist</u> , medium dense. (Glacial Outwash)	18		
842.0	32.0					

Auger to 28.5 feet.
Switch to mud rotary
drilling.

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-2 (cont.)

LOCATION:

See site plan.

DATE: 8/24/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
837.0	37.0	SP SM	POORLY GRADED SAND with SILT, very fine- to fine-grained, with trace Gravel, red brown, <u>moist</u> , medium dense. (Glacial Outwash)	15		
832.0	42.0	SP	POORLY GRADED SAND, medium- to coarse-grained, with trace Gravel, red brown, <u>moist</u> , medium dense. (Glacial Outwash)	27		
			SANDSTONE, very fine- to fine-grained, with trace Gravel, greenish brown to light green, <u>moist</u> , medium dense. (Franconia Formation)	26		
				16		
				33		
				65		
810.0	64.0			142		

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: **MW-2 (cont.)**

LOCATION:

See site plan.

DATE: 8/24/89

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
797.0	77.0		SILTY SANDSTONE, very fine-grained, light green, <u>moist</u> , very dense. (Franconia Formation)	300/ 3"		
787.0	87.0		SHALE, with lenses of very fine-grained cemented Sandstone, olive green, <u>moist</u> , hard. (Franconia Formation)	258 180/ 200/ 5"		
782.0	92.0		SANDSTONE, very fine-grained, cemented, with lenses of Siltstone, light brown, <u>moist</u> , very dense. (Franconia Formation)	200/ 1"		
778.0	96.0		SHALE, with lenses of very fine-grained, cemented Sandstone, olive green <u>mottled with rust</u> , <u>moist</u> , hard. (Franconia Formation)	135		

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-2 (cont.)

LOCATION:

See site plan.

DATE: 8/24/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
772.0	102.0		SHALE, with lenses of very fine-grained cemented Sandstone, olive green <u>mottled with rust, moist, hard.</u> (Franconia Formation)	70/ 175/ 5"		
			SANDSTONE and SHALE, very fine-grained, dark green, <u>moist</u> , very dense. (Franconia Formation)	150		
			- <u>mottled with rust.</u>	65/ 200/ 4"		
				400/ 4"		
				500/ 3"		
				500/ 2"		
747.0	127.0		SHALE, with lenses of very fine-grained	400/		

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: **MW-2 (cont.)**

LOCATION:

See site plan.

DATE: 8/24/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
			Sandstone, olive green, <u>wet to waterbearing</u> , hard. (Franconia Formation)	3"		
				400/ 2"		
737.0	137.0			400/ 2"		
			SILTY SANDSTONE, fine-grained, with lenses of Shale, yellowish brown, moist, very dense. (Iron-ton Formation)	500/ 2"		
732.0	142.0			500/ 2"		
			SANDSTONE and SILTSTONE, medium- to coarse-grained, iron stained, greenish yellow, wet to waterbearing, very dense. (Iron-ton Formation)	500/ 2"		
727.0	147.0			500/ 2"		
			SANDSTONE, fine- to medium-grained, with lenses of Shale, yellow to light green, wet to waterbearing, very dense. (Iron-ton Formation)	500/ 0"		
721.0	153.0					
			END OF BORING			
			Monitoring well installed at 152.0 feet.			

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING:

MW-3

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev. 882.0	Depth 0.0	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests	or	Notes
		SP	POORLY GRADED SAND, fine- to medium-grained, with trace Gravel and layer Cobbles, brown, moist, medium dense. (Glacial Outwash)					
				5				
				11				
868.5	13.5	SP	POORLY GRADED SAND, very fine- to fine-grained, brown, moist, medium dense. (Glacial Outwash)					
				12				
				11				
858.0	24.0	SP	POORLY GRADED SAND, fine- to medium-grained, with Gravel, brown, moist, loose. (Glacial Outwash)					
				8				
				18				
850.0	32.0		- medium dense.					

BRAUN

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-3 (cont.)

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
		SP	POORLY GRADED SAND, fine- to medium-grained, with Gravel, brown, moist, loose. (Glacial Outwash)	17		Auger to 40.5 feet. Switch to mud rotary drilling.
843.0	39.0	SM	SILTY SAND, fine- to medium-grained, with Gravel, red brown, moist, stiff. (Glacial Outwash)	13		
835.0	47.0	SP	POORLY GRADED SAND, fine- to medium-grained, with trace Gravel, brown, waterbearing, medium dense. (Glacial Outwash)	15		
			- dense.	26		
				50		
818.0	64.0			42		

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-3 (cont.)

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
		SP	POORLY GRADED SAND, fine- to medium-grained, with trace Gravel, brown, waterbearing, medium dense. (Glacial Outwash)	42		
810.0	72.0		SILTY SANDSTONE, very fine- to fine-grained, with layer of Cobbles, cemented, with lenses of Shale and Siltstone, dark green, wet, medium dense. (Franconia Formation)	28		
			- dark green, moist.	22		
				169		
794.0	88.0		SHALE, with lenses of fine- to medium-grained cemented Sandstone, olive green to light green, moist to wet, hard. (Franconia Formation)	400/ 3"		
				250/ 5"		
786.0	96.0					

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: **MW-3** (cont.)

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests	or	Notes
			SHALE, with lenses of fine- to medium-grained cemented Sandstone, olive green to light green, moist to wet, hard. (Franconia Formation)	320				
				75/ 200/ 2"				
			- light green.	500/ 0"				
				500/ 1"				
				500/ 3"				
				210/ 100/ 1"				
756.0	126.0							
754.0	128.0		SANDY SHALE, with lenses of very fine- to fine-grained cemented Sandstone, greenish brown, moist, hard. (Shale)	190/				

(See Report and Standard Plates for evaluation and descriptive terminology.)

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-3 (cont.)

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
			SANDY SHALE, with lenses of very fine- to fine-grained cemented Sandstone, greenish brown, moist, hard. (Franconia Formation)	100/ 0		
				170/ 100/ 1"		
				500/ 3"		
740.0	142.0					
			SANDSTONE and SILTSTONE, very fine- to fine-grained, cemented, iron stained, dark green, moist, hard. (Franconia Formation)	500/ 3"		
				500/ 2"		
				500/ 1"		
				500/ 2"		
722.0	160.0					

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-3 (cont.)

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
710.0	172.0		SANDSTONE and SILTSTONE, very fine- to fine-grained, cemented, iron stained, dark green, moist, hard. (Franconia Formation)	500/ 2"		
705.0	177.0		SILTY SANDSTONE, very fine-grained, light green, moist, very dense. (Franconia Formation)	500/ 1"		
700.0	182.0		SHALE, with lenses of very fine-grained Sandstone, dark green, moist, hard. (Franconia Formation)	500/ 1"		
695.0	187.0		SILTY SANDSTONE, fine- to medium-grained, brown, moist to wet, very dense. (Ironton Formation)	500/ 2"		
690.0	192.0		SILTY SANDSTONE and SHALE, very fine-grained, brown, wet to waterbearing, very dense. (Ironton Formation)	500/ 1"		

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: **MW-3 (cont.)**

LOCATION:

See site plan.

DATE: 9/18/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
			SILTY SANDSTONE and SHALE, very fine-grained, brown, very dense. (Ironton Formation)			No sample recovered.
				500/0"		No sample recovered.
679.0	203.0			1500/1"		
			SILTY SANDSTONE, fine- to medium-grained, iron stained brown, waterbearing, very dense. (Ironton Formation)			No sample recovered.
				1500/0"		
669.0	213.0					
			SILTY SANDSTONE, very fine-grained, brown, moist, very dense. (Ironton Formation)			
				1500/0"		
664.0	218.0					
			END OF BORING			
			Boring immediately tremie grouted to surface.			

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-4

LOCATION:

See site plan.

DATE: 8/30/89

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
847.0	0.0					
			FILL: POORLY GRADED SAND with SILT, fine- to medium-grained, with trace Gravel and Cobbles, with Landfill Debris (glass, metal, wood, plastic), brown black, moist. - loose.	9		No sample recovered.
				12		
836.5	10.5	SP	POORLY GRADED SAND, very fine- to fine-grained, red brown, moist, medium dense. (Glacial Outwash) - loose.	21		
				10		6" steel casing installed to 18.5 feet.
823.0	24.0	SW	WELL GRADED SAND, fine- to coarse-grained, with Gravel, brown, wet, loose. (Glacial Outwash) - moist, medium.	9		
				30		
815.0	32.0					

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-4 (cont.)

LOCATION:

See site plan.

DATE: 8/30/89

SCALE: 1" = 4'

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
		SP	POORLY GRADED SAND, medium- to coarse-grained, with Gravel, brown, moist, medium dense. (Glacial Outwash)	25		
800.0	47.0	SP	- layer Cobbles 40.5 - 43.0 feet.	25		Auger to 40.5 feet. Switch to mud rotary drilling.
		SP	POORLY GRADED SAND, very fine- to fine-grained, red brown, wet, medium dense. (Glacial Outwash)	40		
			- waterbearing, dense.	34		
785.0	62.0	SP	POORLY GRADED SAND, medium- to coarse-grained, with trace Gravel and Cobbles, brown, waterbearing, dense.	33		

LOG OF BORING



PROJECT: SW90-003

Hudson Sanitary Landfill
City of Hudson
Hudson, Wisconsin

BORING: MW-4 (cont.)

LOCATION:

See site plan.

DATE: 8/30/89

SCALE: 1" = 4'

Tests or Notes

(See Report and Standard Plates for evaluation and descriptive terminology.)

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488) (Glacial Outwash)	BPF	WL	Tests or Notes
779.0	68.0			43		
			END OF BORING			
			Monitoring well installed at 68.0 feet.			