Lawler, Matusky & Skelly Engineers LLP

Environmental Science & Engineering Consultants

JOHN P. LAWLER, P.E.
MICHAEL J. SKELLY, P.E.
KARIM A. ABOOD, P.E.
PATRICK J. LAWLER, P.E.
THOMAS L. ENGLERT, P.E.
PETER M. McGRODDY, P.E.
THOMAS E. PEASE, P.E.
THOMAS B. VANDERBEEK, P.E.

Principal
SUSAN G. METZGER, Ph.D.

ONE BLUE HILL PLAZA
P.O. BOX 1509
PEARL RIVER, NEW YORK 10965
(914) 735-8300
FACSIMILE (914) 735-7466

20-Jun-00
File No.: 650-471

William Shaw
New York State Department Of Environmental Conservation
Bureau of Hazardous Site Control
50 Wolf Road
Albany NY 12233

Re: Friedrichsohn Cooperage Inc. (546-NA)
Waterford, Saratoga County
Immediate Investigation Work Assignment (IIWA)
D002676-47

Dear Mr. Shaw:

Lawler, Matusky & Skelly Engineers LLP (LMS) is pleased to submit this letter report documenting the monitoring well installation conducted at the above referenced site on 10 April through 18 April 2000. The original scope of work for this IIWA included the installation and development of 7 bedrock monitoring wells, and a site survey. As requested by NYSDEC two additional monitoring wells were added to the field program of the IIWA. A total of nine wells consisting of six bedrock wells (MW-1 through MW-6) and three overburden wells (MW-1s, -5s, and –6s) were installed by American Auger & Ditching of Constantia NY. Monitoring well locations are shown on Figure 1.

The bedrock wells were installed by first cementing a 4-in. diameter PVC casing in a 5-ft rock socket using a cement/bentonite grout to seal off the overburden. Air rotary drilling techniques were used to drill the overburden and rock sockets for MW-1, -2, -3, and –4. Temporary 6-in. diameter steel casing was needed to keep the borehole open while installing the 4-in. PVC casing since the depth to bedrock was greater than anticipated and the saturated overburden materials are prone to collapse. The 6-in. steel casing dropped below grade on MW-1 and was left in place. The borehole for MW-4 was initially advance to 37-ft bgs (bedrock at 33-ft bgs), however, the borehole collapsed and the temporary steel casing could not be advanced past 22.5-ft bgs due to the presence of cobbles. The boring was offset north of the original location and set in the center of the old towpath (Figure 1). Bedrock in the offset hole was encountered at a significantly shallower depth of 16-ft bgs. Due to the difficulties encountered using air rotary and temporary casing to set the 4-in. PVC casings into bedrock, the PVC casings for MW-4, -5, and –6 were installed using mud rotary drilling techniques with Revert® as the drilling additive.

All bedrock wells with the exception of MW-1 were fitted with a loose 10-ft length of screen (30-ft at MW-4) and riser to the ground surface in the event that a bedrock fragment shifted that would block the well rendering it inaccessible. The construction and depths of the bedrock wells are summarized in Table 1.

MW-5 was constructed with a filter pack surrounding the screen and riser up to the bottom of the rock socket. A bentonite seal was then installed up to the ground surface. This construction was performed to insure that an adequate seal was in place at the junction of the rock sock and PVC casing since grout was observed washing out when drilling first commenced after setting the casing. Well construction logs are presented in Attachment A.

Since a significant thickness of saturated overburden was found above the bedrock, the scope of the IIWA was modified to include the installation of overburden wells at the site. One overburden well was installed adjacent to MW-1 as a background well and adjacent to MW-5 and MW-6 as downgradient wells. The overburden wells were installed using 4-in diameter spin casing. Specific overburden monitoring well details are shown on Table 2 and the well construction logs are presented in Attachment A.

Development was completed on MW-2 and MW-3 with turbidities less than 50 nephlometric units. Development was partially completed on MW-4, 5s, and –6. MW-4, and 6 were pumped dry several times but were still turbid. MW-5s was bailed to remove some sediment, but was not pumped. Development was halted on MW-6s due to the presence of what appeared to be product (mineral spirit). MW-1, 1s, and –5 were not developed. NYSDEC plans on completing the remaining well development before sampling the wells. Development logs are presented in Attachment B.

During the drilling operations several areas of the parking area at Northeast Health Care were damaged since the parking area was constructed with only a skin coat of asphalt. An LMS subcontractor repaired the damaged on 11 May 2000 as requested by the NYSDEC.

LMS has also finalized the scope of the site survey with our subconsultant, MJ Engineering & Surveying. The site survey will include relevant features of the site including the well locations, building locations, roadways, waterways, and each of the other soil and sediment sampling locations. The survey will not include the property boundaries in the area since title and ownership bounds are complicated due to the presence of the old Champlain Canal. The specific sampling locations will be identified for the surveyor during the upcoming NYSDEC sampling effort.

Let me know if you require any additional assistance with this IIWA and if you have any questions on the monitoring well installation program, please contact Mr. John Thornburg or me.

Sincerely,

Edward A. Maikish, P.E.
Program Manager

TABLE 1
BEDROCK WELL CONSTRUCTION DETAILS
FRIEDRICHSOHN COOPERAGE

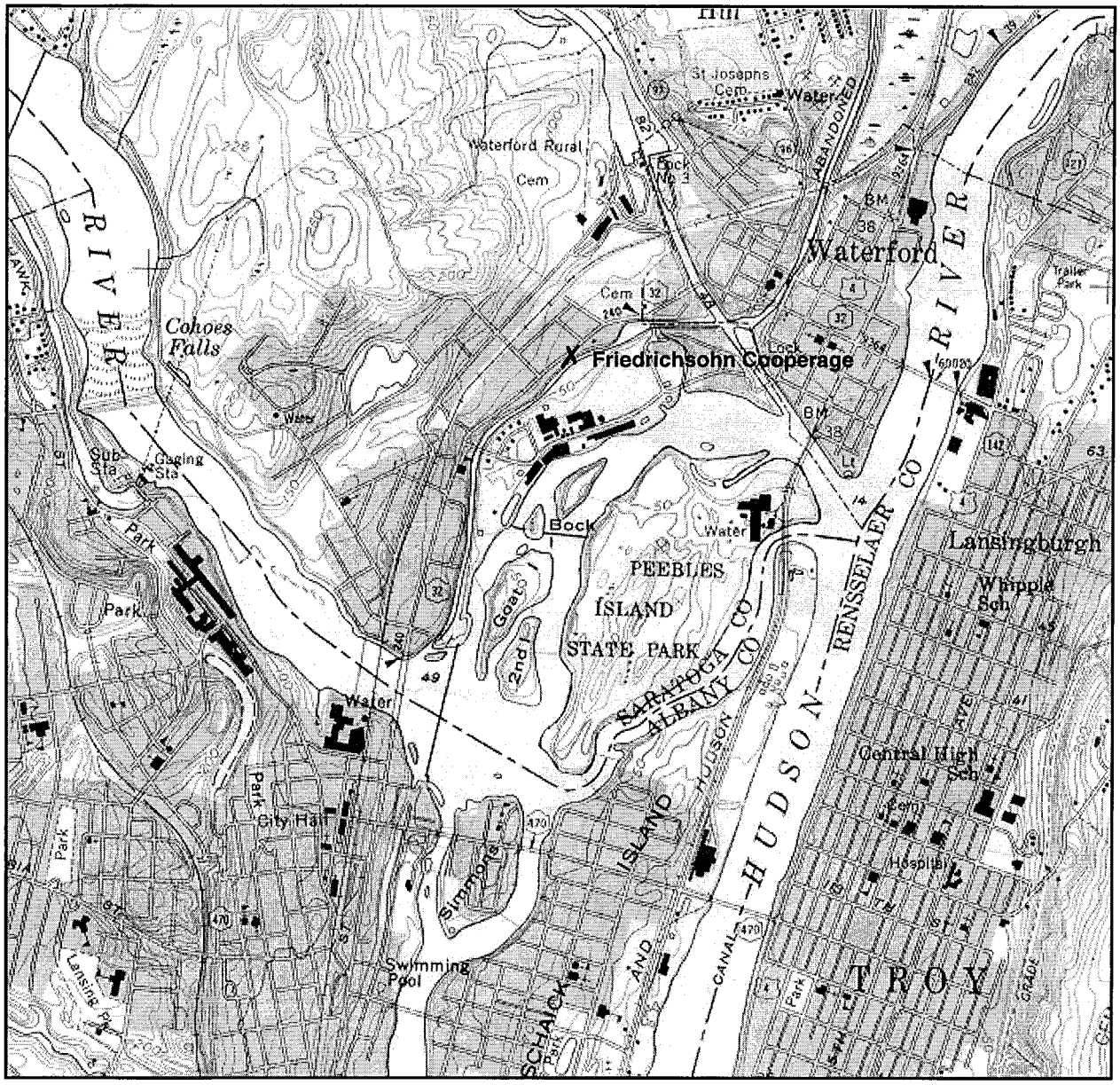
Well Number	Temp. 6-in. Casing	Depth to Bedrock (ft)	Depth 4-in. Casing (ft)	Depth of Rock Socket (ft)	Length of Well Screen (ft)	Total Depth (ft)
MW-1	30 ft (left in place)	31	35	35	None	200
MW-2	13 ft (left in place)	13.7	18.7	18.7	10	43
MW-3	13 ft	14	20	20	10	50
MW-4	22 ft	16	17	20	30	60
MW-5	NA	13.5	17	20	10	70
MW-6	NA	18	23	23	10	49

TABLE 2
OVERBURDEN WELL CONSTRUCTION DETAILS
FRIEDRICHSOHN COOPERAGE

Well Number	Depth to Bedrock (ft)	Overburden Well Depth (ft)	Screened Interval (ft)
MW-1s	29.5	29.5	19.5 - 29.5
MW-5s	14	14	12 – 14.5
MW-6s	21	21	18.5 - 21

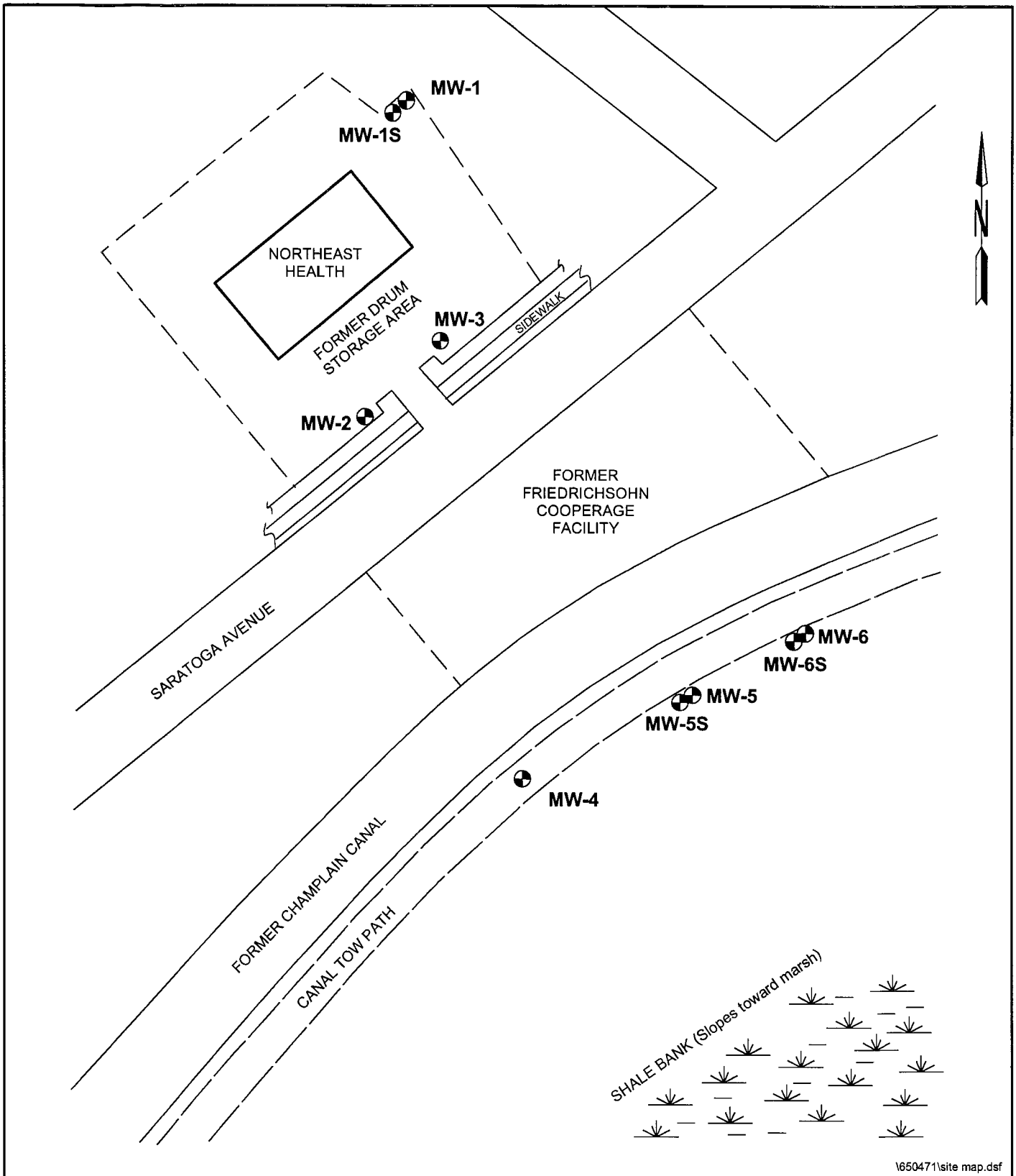
of a foot at each monitoring well location and tied to a common benchmark: the "ground" elevation at the intersection of the protective casing and the concrete drainage pad; and the "height" elevation of the PVC well riser pipe (with the cover/cap off). Elevation measurements will be used to evaluate the groundwater flow conditions at and near the site.

SITE LOCATION



Troy North Quadrangle
New York
1974 Edition

North



\650471\site map.dsf

LEGEND

Approximate monitoring well location

NOT TO SCALE

Figure 1

Site Plan

FRIEDRICHSOHN COOPERAGE

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

ATTACHMENT A

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

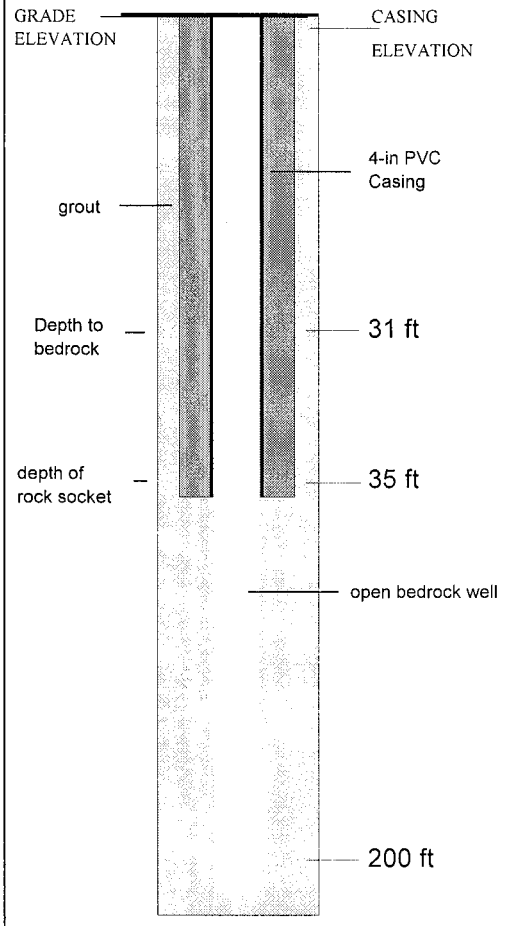
WELL No.: MW-1

CLIENT: NYSDEC

LOCATION: NW corner of parking area at Northeast Health Care

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
11-Apr-00	N/A	17-Apr-00

DEVELOPING METHOD: N/A



NOT TO SCALE

INSPECTOR: John Thornburg

DRILLING CONTRACTOR: American Auger

TYPE OF WELL: Bedrock monitoring well

STATIC WATER LEVEL: NR — DATE:

MEASURING POINT: TOC — TOTAL DEPTH OF WELL: ~200 ft — TOTAL DEPTH OF BORING: 200 ft

DRILLING METHOD — TYPE: Air rotary

DIAMETER: 4-in. — CASING: 4-in. PVC

CASING TYPE — TYPE: PVC

DIAMETER: 4.0-in. — INTERVAL: 0-35.0 ft

RISER PIPE LEFT IN PLACE — MATERIAL: N/A

DIAMETER: — LENGTH: — JOINT TYPE:

SCREEN — MATERIAL: N/A

INTERVAL: — DIAMETER:

STRATIGRAPHIC UNITS SCREENED: Canajoharie Shale — SLOT SIZE:

FILTER PACK — GRADE: N/A

SAND: — GRAVEL: — NATURAL:

AMOUNT: — INTERVAL:

SEAL(s)

Portland Cement	INTERVAL:	AMOUNT:
Bentonite Slurry	INTERVAL:	AMOUNT:
Bentonite Pellets	INTERVAL:	AMOUNT:
Other: 4-in. PVC casing grouted in.	INTERVAL: 0-39 ft	AMOUNT:

NOTES:

Well producing very little water. Set packer and pumped water in at 600 psi to frac well. Well taking ~12 gpm under pressure.

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

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MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

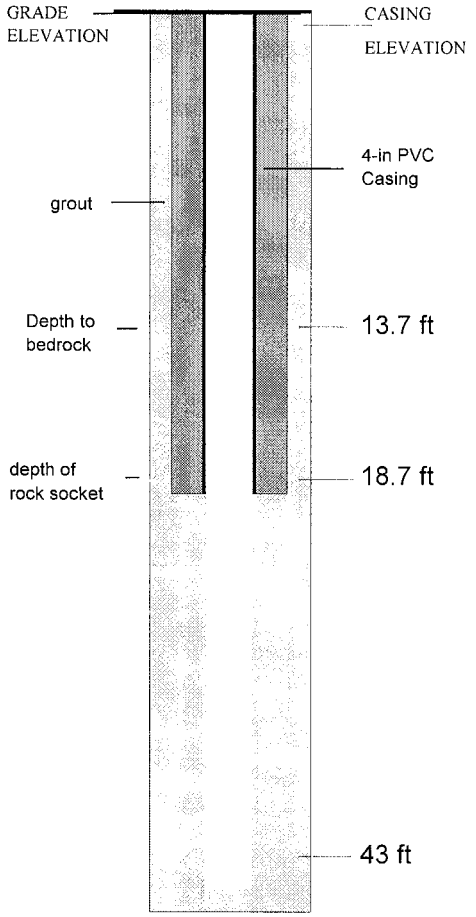
WELL No.: MW-2

CLIENT: NYSDEC

LOCATION: Southeast corner or Northeast Health parking area

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
10-Apr-00	17-Apr-00	17-Apr-00

DEVELOPING METHOD: Grundfos pump (see development logs)



NOT TO SCALE

INSPECTOR: John Thornburg

DRILLING CONTRACTOR: American Auger

TYPE OF WELL: Bedrock monitoring well

STATIC WATER LEVEL: 12.59 ft DATE: 4/17/00

MEASURING POINT: TOC TOTAL DEPTH OF WELL: ~43 ft TOTAL DEPTH OF BORING: 43 ft

DRILLING METHOD TYPE: Air rotary

DIAMETER: 4-in. CASING: 4-in. PVC

CASING TYPE TYPE: PVC

DIAMETER: 4.0-in. INTERVAL: 0-18.7 ft

RISER PIPE LEFT IN PLACE MATERIAL: N/A

DIAMETER: 2-in. LENGTH: 23 ft JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 23-43 ft DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: Canajoharie Shale SLOT SIZE: 0.01

FILTER PACK GRADE: N/A

SAND: GRAVEL: NATURAL:

AMOUNT: INTERVAL:

SEAL(s)

Portland Cement	INTERVAL:	AMOUNT:
Bentonite Slurry	INTERVAL:	AMOUNT:
Bentonite Pellets	INTERVAL:	AMOUNT:
Other: 4-in. PVC casing grouted in.	INTERVAL: 0-18.7 ft	AMOUNT:

NOTES:

Well easily pumped dry. Yield less than 1 gpm

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

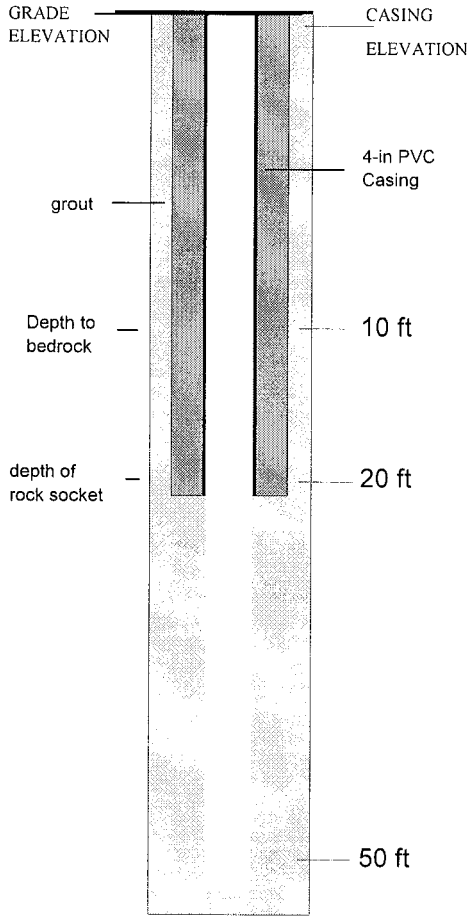
WELL No.: MW-3

CLIENT: NYSDEC

LOCATION: Northeast corner of Northeast Health parking area

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
11-Apr-00	17-Apr-00	17-Apr-00

DEVELOPING METHOD: Grundfos pump (see development logs)



NOT TO SCALE

INSPECTOR: John Thornburg

DRILLING CONTRACTOR: American Auger

TYPE OF WELL: Bedrock monitoring well

STATIC WATER LEVEL: 8.69 DATE: 4/17/00

MEASURING POINT: TOC TOTAL DEPTH OF WELL: ~50 ft TOTAL DEPTH OF BORING: 50 ft

DRILLING METHOD TYPE: Air rotary

DIAMETER: 4-in. CASING: 4-in. PVC

CASING TYPE TYPE: PVC

DIAMETER: 4.0-in. INTERVAL: 0-20 ft

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 2-in. LENGTH: 30 ft JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 30-50 ft DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: Canajoharie Shale SLOT SIZE: 0.01

FILTER PACK GRADE: N/A

SAND: GRAVEL: NATURAL:

AMOUNT: INTERVAL:

SEAL(s)

Portland Cement	INTERVAL:		AMOUNT:	
Bentonite Slurry	INTERVAL:		AMOUNT:	
Bentonite Pellets	INTERVAL:		AMOUNT:	
Other: 4-in. PVC casing grouted in.	INTERVAL:	0-20 ft	AMOUNT:	

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

NOTES:

Competent bedrock at 14.0 ft.
6-in. soft fracture zone at 44.0 ft
Well yielding about 4 gpm
Strong sulfur odor

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

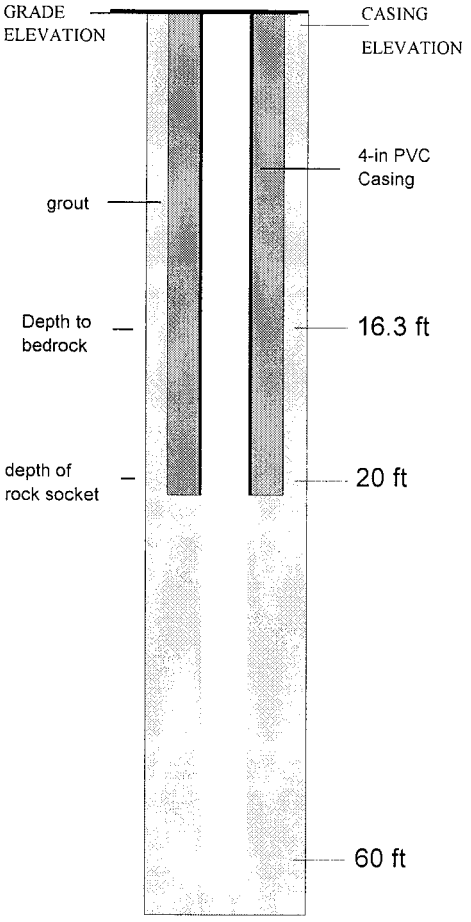
WELL No.: MW-4

CLIENT: NYSDEC

LOCATION: Placed in center of Canal path and buried.

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
11-Apr-00	N/A	17-Apr-00

DEVELOPING METHOD: N/A



NOT TO SCALE

INSPECTOR: John Thornburg

DRILLING CONTRACTOR: American Auger

TYPE OF WELL: Bedrock monitoring well

STATIC WATER LEVEL: ~8.0 ft bgs

DATE: 4/18/00

MEASURING POINT: BGS

TOTAL DEPTH OF WELL: ~60 ft

TOTAL DEPTH OF BORING: 60 ft

DRILLING METHOD TYPE: Mud rotary (revert)/Air rotary

DIAMETER: 4-in.

CASING: 4-in. PVC

CASING TYPE TYPE: PVC

DIAMETER: 4.0-in.

INTERVAL: 0-17.0 ft

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 2-in.

LENGTH: 30 ft

JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 30-60 ft

DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: Canajoharie Shale

SLOT SIZE: 0.01

FILTER PACK GRADE: N/A

SAND:

GRAVEL:

NATURAL:

AMOUNT:

INTERVAL:

SEAL(s)

Portland Cement	INTERVAL:	AMOUNT:
Bentonite Slurry	INTERVAL:	AMOUNT:
Bentonite Pellets	INTERVAL:	AMOUNT:
Other: 4-in. PVC casing grouted in.	INTERVAL: 0-20 ft	AMOUNT:

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

NOTES:

Offset from original hole . Bedrock on first hole at 33 ft bgs.
Hole caving, casing set at 17 ft
Yield <2 gpm
Slight chemical/sulfur odor

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

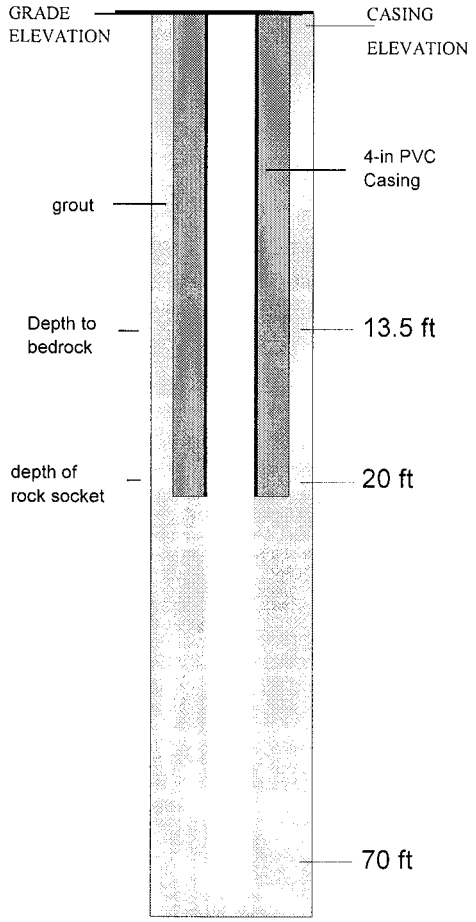
WELL No.: MW-5

CLIENT: NYSDEC

LOCATION: East side of Canal path

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
10-Apr-00	18-Apr-00	18-Apr-00

DEVELOPING METHOD: N/A



NOT TO SCALE

INSPECTOR: John Thornburg

DRILLING CONTRACTOR: American Auger

TYPE OF WELL: Bedrock monitoring well

STATIC WATER LEVEL: 6.07 DATE: 4/18/00

MEASURING POINT: TOC TOTAL DEPTH OF WELL: ~70 ft TOTAL DEPTH OF BORING: 70 ft

DRILLING METHOD TYPE: Mud rotary (revert)/Air rotary

DIAMETER: 4-in. CASING: 4-in. PVC

CASING TYPE TYPE: PVC

DIAMETER: 4.0-in. INTERVAL: 0-17.0 ft

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 2-in. LENGTH: 50 ft JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 50-70 ft DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: Canajoharie Shale SLOT SIZE: 0.01

FILTER PACK GRADE: #1

SAND: X GRAVEL: NATURAL:

AMOUNT: INTERVAL: 28-70 ft

SEAL(s)

Portland Cement	INTERVAL:		AMOUNT:	
Bentonite Slurry	INTERVAL:		AMOUNT:	
Bentonite Pellets	INTERVAL:	0-28 ft	AMOUNT:	5 gal
Other: 4-in. PVC casing grouted in.	INTERVAL:		AMOUNT:	

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

NOTES:

Hole caving, casing set at 17 ft.
Grout washing out on 13 April. Stopped drilling to let grout cure completely.
Fracture producing water at 67 ft bgs.
Strong sulfur and slight chemical odor.
Grundfos pump burnt out, development not completed.
Bentonite seal installed

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

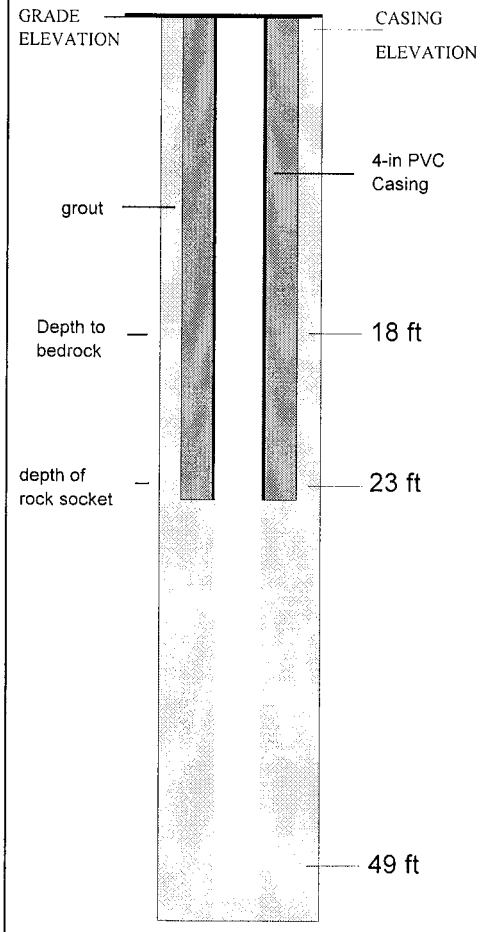
WELL No.: MW-6

CLIENT: NYSDEC

LOCATION: Waterford, New York

DATE DRILLED:	DATE DEVELOPED:	WELL CONSTRUCTION COMPLETED:
12-Apr-00	18-Apr-00	17-Apr-00

DEVELOPING METHOD: Grundfos pump



NOT TO SCALE

INSPECTOR: John Thornburg

DRILLING CONTRACTOR: American Auger

TYPE OF WELL: Bedrock monitoring well

STATIC WATER LEVEL: 6.82 DATE: 4/18/00

MEASURING POINT: TOC TOTAL DEPTH OF WELL: ~49 ft TOTAL DEPTH OF BORING: 49 ft

DRILLING METHOD TYPE: Mud rotary (revert)/Air rotary

DIAMETER: 4-in. CASING: 4-in. PVC

CASING TYPE TYPE: PVC

DIAMETER: 4.0-in. INTERVAL: 0-23.0 ft

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 2-in. LENGTH: 29 ft JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 29-49 ft DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: Canajoharie Shale SLOT SIZE: 0.01

FILTER PACK GRADE: N/A

SAND: GRAVEL: NATURAL:

AMOUNT: INTERVAL:

SEAL(s)

Portland Cement	INTERVAL:	0-23 ft	AMOUNT:	
Bentonite Slurry	INTERVAL:		AMOUNT:	
Bentonite Pellets	INTERVAL:		AMOUNT:	
Other: 4-in. PVC casing grouted in.	INTERVAL:		AMOUNT:	

LOCKING CASING: [X] YES [ ] NO KEY NO: 2402

NOTES:

Well yield < 1 gpm

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

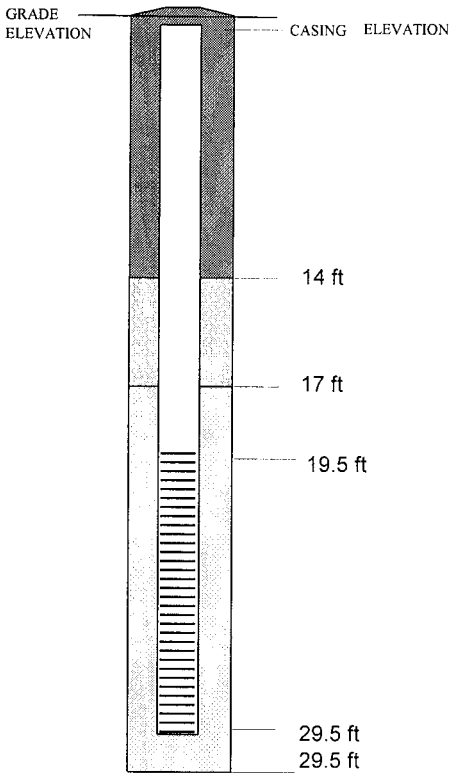
WELL No.: MW-1s

CLIENT: NYSDEC

LOCATION: NW corner of parking area at Northeast Health Care

DATE DRILLED: 17-Apr-00 | DATE DEVELOPED: N/A | WELL CONSTRUCTION COMPLETED: 17-Apr-00

DEVELOPING METHOD: N/A



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: American Auger & Ditching

TYPE OF WELL: Overburden monitoring well

STATIC WATER LEVEL: not recorded | DATE:

MEASURING POINT: TOC | TOTAL DEPTH OF WELL: 29.5 ft | TOTAL DEPTH OF BORING: 29.5 ft

DRILLING METHOD | TYPE: Air rotary

DIAMETER: 4-in. | CASING: 4-in. spin

SAMPLING METHOD | TYPE: N/A

DIAMETER: | WEIGHT:

FALL: | INTERVAL:

RISER PIPE LEFT IN PLACE | MATERIAL: PVC

DIAMETER: 2-in. | LENGTH: 19.5 | JOINT TYPE: Flush

SCREEN | MATERIAL: PVC

INTERVAL: 19.5-29.5 | DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: till | SLOT SIZE: 0.01"

FILTER PACK | GRADE: #1

SAND: X | GRAVEL: | NATURAL:

AMOUNT: 100 lbs | INTERVAL: 17.0 29.5 ft

SEAL(s)

Portland Cement	INTERVAL:	0-14.0	AMOUNT:	
Bentonite Slurry	INTERVAL:		AMOUNT:	
Bentonite Pellets	INTERVAL:	14.0-17.0	AMOUNT:	
Other:	INTERVAL:		AMOUNT:	

NOTES: Overburden Well
Pairer with MW-1
Bedrock at ~29.5 ft

LOCKING CASING: [X] YES [ ] NO KEY NO:

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

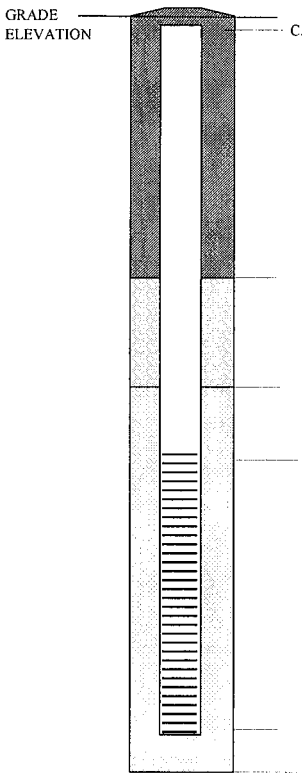
WELL No.: MW-5s

CLIENT: NYSDEC

LOCATION: East side of Canal path

DATE DRILLED: 17-Apr-00 | DATE DEVELOPED: 18-Apr-00 | WELL CONSTRUCTION COMPLETED: 17-Apr-00

DEVELOPING METHOD: Bailer



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: American Auger & Ditching

TYPE OF WELL: Overburden monitoring well

STATIC WATER LEVEL: 10.21 DATE: 4/18/00

MEASURING POINT: TOC | TOTAL DEPTH OF WELL: 14.5 ft | TOTAL DEPTH OF BORING: 14.5 ft

DRILLING METHOD TYPE: Air rotary

DIAMETER: 4-in. CASING: 4-in. spin

SAMPLING METHOD TYPE: N/A

DIAMETER: WEIGHT:

FALL: INTERVAL:

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 2-in. LENGTH: 12.0 ft JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 12.0-14.5 DIAMETER: 2-in.

SLOT SIZE: 0.01"

STRATIGRAPHIC UNITS SCREENED: till/fill

FILTER PACK GRADE: #1

SAND: X GRAVEL: NATURAL:

AMOUNT: ~25 lbs INTERVAL: 11.0-14.5

SEAL(s)

Portland Cement	INTERVAL:	0-8.2 ft	AMOUNT:	
Bentonite Slurry	INTERVAL:		AMOUNT:	
Bentonite Pellets	INTERVAL:	8.2-11.0 ft	AMOUNT:	
Other:	INTERVAL:		AMOUNT:	

LOCKING CASING: [X] YES [ ] NO KEY NO:

NOTES:
- Overburden Well
- Bedrock at ~ 14.5 ft
- Well yield >1 gpm based on little draw down during bailing
- Mineral spirit odor
- 2.5 ft screen
- Paired with MW-5
- Water foaming

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

MONITORING WELL COMPLETION LOG

PROJECT NUMBER: 650-471

PROJECT NAME: Friedrichsohn Copperage

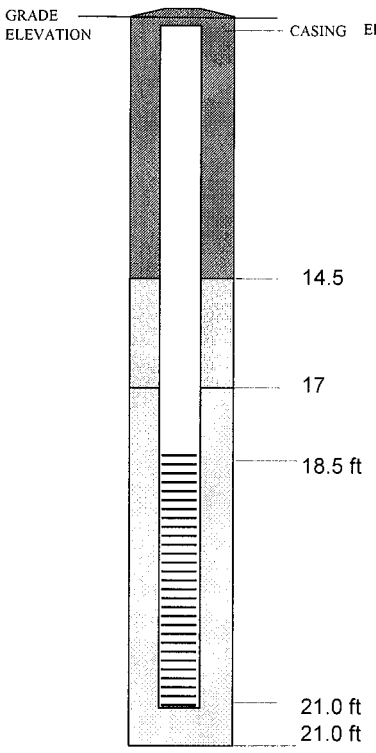
WELL No.: MW-6s

CLIENT: NYSDEC

LOCATION: East side of Canal path

DATE DRILLED: 17-Apr-00 | DATE DEVELOPED: 18-Apr-00 | WELL CONSTRUCTION COMPLETED: 17-Apr-00

DEVELOPING METHOD: Bailer/Grundfos pump



NOT TO SCALE

INSPECTOR: J. Thornburg

DRILLING CONTRACTOR: American Auger & Ditching

TYPE OF WELL: Overburden monitoring well

STATIC WATER LEVEL: 4.35 DATE: 4/18/00

MEASURING POINT: TOC | TOTAL DEPTH OF WELL: ~21.0 ft | TOTAL DEPTH OF BORING: 21.0 ft

DRILLING METHOD TYPE: Air rotary

DIAMETER: 4-in. CASING: 4-in. spin

SAMPLING METHOD TYPE: N/A

DIAMETER: WEIGHT:

FALL: INTERVAL:

RISER PIPE LEFT IN PLACE MATERIAL: PVC

DIAMETER: 2-in. | LENGTH: 18.5 ft | JOINT TYPE: Flush

SCREEN MATERIAL: PVC

INTERVAL: 18.5-21.0 DIAMETER: 2-in.

STRATIGRAPHIC UNITS SCREENED: SLOT SIZE: 0.01

FILTER PACK GRADE: #1

SAND: X | GRAVEL: | NATURAL:

AMOUNT: ~ 25 lbs INTERVAL: 17.0-21.0 ft

SEAL(s)

Portland Cement	INTERVAL:	0-14.5 ft	AMOUNT:	
Bentonite Slurry	INTERVAL:		AMOUNT:	
Bentonite Pellets	INTERVAL:	14.5-17.0	AMOUNT:	
Other:	INTERVAL:		AMOUNT:	

LOCKING CASING: [X] YES [ ] NO KEY NO:

NOTES:
- Overburden well
- Paired with MW-6
- Bedrock at ~ 21 ft
- Well yields > 3 gpm
- Strong mineral spirit odor
- Water foaming
- 2.5 ft screen

LMS LAWLER, MATUSKY & SKELLY ENGINEERS LLP

ATTACHMENT B

Date: 4-17-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JET	WELL DEVELOPMENT LOG	Cond. Meter: TLC #10
Job No: 650-741	WELL No. MW-2	Therm: TLC # 10
Site: Friedrichsburg		Turb. Meter: 21PE

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
1135	12.69	0	7.7	15.2	815	200+	
1146		20	7.7	14.2	857	200+	Dry @ 1146
1222			7.9	15.4	877	200+	resume pumping
1232		40	7.7	14.0	932	20	Dry @ 1236
1208		48	7.7	13.6	918	45	resume pumping
1318		68	7.7	14.0	943	25	

Depth of Well: Start:_____ End:_____

Date: 4-17-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JET	WELL DEVELOPMENT LOG	Cond. Meter: TLC #10
Job No: 650-741	WELL No. MW-3	Therm: TLC #10
Site: Friedrichsohn		Turb. Meter: 21PE

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
	8.69	0	7.1	13.4	921	200 +	
		10	7.5	14.4	878	200 +	
1006		20	7.5	14.2	875	80	Strong sulfur odor
1016		60	7.5	14.3	888	40	
1026		100	7.5	14.5	899	30	Surged well.
1036		140	7.5	14.5	897	45	
1046		180	7.5	15.1	902	15	
1056		220	7.5	14.6	902	15	

Depth of Well: Start:_____ End:_____

Date: 4-18-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JBT	WELL DEVELOPMENT LOG	Cond. Meter: TLC #10
Job No: 650-741	WELL No. MW-4	Therm: TLC #10
Site: Friedrichsohn		Turb. Meter: 21PE

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
1045	~8.08	0	7.7	13.2	1080	200+	pumping ~ 2 gpm
1055		20	7.7	11.6	1070	200+	
1105		40	7.5	12.5	1060	200+	
1115	Dry	60	7.5	12.2	1037	200+	Dry @ 112#
1145		78	7.4	12.3	1000	200+	Resumed pumping
1155		98	7.4	12.6	1014	200+	pump cut back to 1gpm
1210		1	7.4	13.1	1010	200+	
1222	Dry						Dry
1234							Surge well
1238	Dry						well dry.
							Completed development
							DEC will continue
							to develop.

Depth of Well: Start:_____ End:_____

Date: 4-18-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JET	WELL DEVELOPMENT LOG	Cond. Meter: TCL #10
Job No: 650-741	WELL No. MW-55	Therm: TLC #10
Site: Friedrichsohn		Turb. Meter: 2IPE

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
1328	10.21	0	8.1	8.2	1533	200+	Bailing well
1346		10	7.7	8.9	1371	200+	
1356		20	7.7	8.1	1289	200+	
1412		30	7.5	8.3	1171	200+	
1423		40	7.5	8.2	1067	200+	Stopped bailing, wait for pump. ORC will complete development.

Depth of Well: Start:_____ End:_____

Date: 4-18-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JRT	WELL DEVELOPMENT LOG	Cond. Meter: TLC#10
Job No: 650-741	WELL No. MW-5	Therm: TLC#10
Site: Friedrichsha		Turb. Meter: 21PR

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
0945		0	8.7	11.1	1230	200+	
1343	6.07	0	7.1	12.3	1224	200+	
1351		24					pump burnt out. DEC will complete development.

Depth of Well: Start:_____ End:_____

Date: 4-18-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JET	WELL DEVELOPMENT LOG	Cond. Meter: TLC #10
Job No: 650-741	WELL No. MW-6S	Therm: TLC # 10
Site: Friedrichsohn		Turb. Meter: 2IPE

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
0830	4.35	0	9.2	6.2	2820	200+	
0835		15	9.7	10.2	3520	200+	
0840		30	9.7	10.4	3550	200+	
0850		60	9.7	10.4	3590	200+	Stopped development Possible product Mineral spirits ?

Depth of Well: Start:_____ End:_____

Date: 4-18-00	LMS Lawler, Matusky & Skelly Engineers LLP	pH Meter: 99-05
Crew: JET	WELL DEVELOPMENT LOG	Cond. Meter: TLC-10
Job No: 650-741	WELL No. MW-6	Therm: TLC-10
Site: Friedrichsohn		Turb. Meter: PE21

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
0910	6.82	0	12.5	13.9	3690	200+	pumping 3 gpm
0920		30	11.8	12.4	3750	200+	
0930		60	12.1	11.5	3330	200+	0936 Dry
1000		78	12.0	8.5	2310	200+	1005 Dry
							NEC will continue
							to develop.

Depth of Well: Start:_____ End:_____