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ANNUAL GROUNDWATER REPORT
FREEMAN CHEMICAL CORPORATION
SAUKVILLE, WISCONSIN

1988?

Prepared by:

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Richmond, Virginia
Job No. 0001-003

December 16, 1988

INTRODUCTION

The current program at Freeman Chemical Corporation's Saukville Plant consisted of quarterly groundwater monitoring for December 1987, April 1988, July 1988, and October 1988. The July 1988 sampling period represents the annual sampling event. Water quality test results (EPA Method 624 HSL volatile organics) and also water level data have been submitted previously to USEPA and WDNR on a quarterly basis. Quarterly results since the July 1988 sampling have also been submitted to WDNR by Freeman Chemical Corporation on forms provided by WDNR. This will be continued for all future quarterly rounds of sampling. The intent of this annual report is to summarize the data collected during the past year and to make pertinent evaluations and recommendations.

GROUNDWATER MONITORING

Water level readings have been recorded for each monitoring well in the current sampling program. These water level readings have been used to construct quarterly potentiometric surface maps for both the glacial aquifer and the Dolomite aquifer. These maps are included in Appendix A. During the sampling period, a number of the glacial wells were dry and they are listed in Table 1. Freeman Chemical Corporation also maintains a daily record of running times of various pumping wells and this information is presented in Table 2.

Examination of the potentiometric maps for the glacial aquifer shows that groundwater gradients beyond the limits of the three Ranney collectors are generally to the east toward the Milwaukee River. Deflections in the contours represent the impact of pumping associated with the Ranney collectors. As indicated in Table 2, pumping of the Ranney collectors has not been continuous and this is attributed to declining water levels in the glacial aquifer. Further explanation is presented later in the Evaluation section of the report.

TABLE 1
LIST OF DRY GLACIAL WELLS

<u>Quarter</u>	<u>Dry Wells</u>
December 1987	16A, 43, 44, 45, and 48
April 1988	16A, 43, 44, 45, and 48
July 1988	4A, 16A, 41, 43, 44, 45, 46, and 48
October 1988	4A, 16A, 41, 43, 44, 45, 46, and 48

Note: Monitoring wells 4A and 16A are sampled annually.
Water level measurements were, however, taken during
quarterly odor monitoring at these two locations.

drywell.tab

Table 2
Summary of Well Running Times

Below is a summary for the well operation (running times) of the various dolomite wells, shallow wells, and Ranney Collectors since timers were installed in mid-November, 1987. This information has been compiled by Freeman Chemical Corporation in conjunction with their frequent monitoring (daily during the working week) of the systems.

<u>WELL I.D.</u>	<u>TOTAL RUNNING TIME</u>	<u>WEEKLY AVERAGE</u>	<u>DAILY AVERAGE</u>	<u>LAST DATE OPERATION</u>	<u>COMMENT</u>
W28	246 hr.54 min.	5 hr.30 min.	48 min.	9/20/88	Intermittent Pumping
W24	4293 hr.30 min.	97 hr.30 min.	13 hr.19 min.	10/1/88	Presently runs 24 hr./day, since 4/10/88
W21	657 hr.48 min.	14 hr.54 min.	2 hr.6 min.	9/21/88	Few minutes a week since 4/4/88
W29	36 hr.6 min.	48 min.	6 min.	10/1/88	Fairly consistent
RC1	343 hr.12 min.	7 hr.42 min.	1 hr.6min.	9/9/88	Not run for month despite rainfall
RC2	2745 hr.12 min.	62 hr.18 min.	8 hr.54 min.	5/16/88	Not run since May. Thus it ran 15 hr. average per day until then.
W31	0 min.	0 min.	0 min.	Never	Never ran
W32	0 min.	0 min.	0 min.	Never	Never ran
W33	15 hr.30 min.	18 min.	3 min.	9/26/88	Ran once since June 1
W34	92 hr.	2 hr.	18 min.	10/1/88	Fairly true. Drop since 5/15/88.

<u>WELL ID.</u>	<u>TOTAL RUNNING TIME</u>	<u>WEEKLY AVERAGE</u>	<u>DAILY AVERAGE</u>	<u>LAST DATE OPERATION</u>	<u>COMMENT</u>
W35	8 hr. 24 min.	12 min.	1 min. 30 s.	6/2/88	No time since June 1.
RC3	1197 hr.12 min.	27 hr.12 m.	3 hr.54 min.	10/1/88	Sporadic operation. Runs much. Then limited.
W37	186 hr.18 min.	4 hr.12 min.	36 min.	10/1/88	Significant drop since April 4 in average time.

- NOTE: 1) The wells were listed as to Dolomite (28, 24, 21, 29), and Ranney collectors and associated shallow wells (RC1; RC2 + W31, W32, W33, W34, W35; RC3 + W37)
- 2) The total running time represents the time since mid-November, 1987 until October 1, 1988. Running times are recorded daily and reported appropriately.
 - 3) The weekly average accounts for the 44-week period since last November.
 - 4) The daily average represents the 308 days elapsed since last November.
 - 5) The last date of operation represents the last known date a respective timer registered running time for the particular well.

It is important to understand that the above averages are under the "ideal" notion that there is running time each week and/or day. However, the above facts bear out that this is not the case. Many wells have not run at all, have run intermittently, or have stopped running after previously operating.

The potentiometric maps for the Dolomite aquifer clearly demonstrate the influence of pumping Well W-30, as gradients are toward this pumping center. Shallow dolomite wells W-21, W-24, W-28 and W-29 also have some local influence on the water table, however, they are not pumped as continuously or at as great a capacity as W-30. As indicated in Table 2, their pumping periods are considerably less than W-30, which is pumped continuously at approximately 400 gpm.

WATER QUALITY DATA

Water quality data generated for the past year has been summarized in table form for each well monitored and is included in Appendix B. Testing was for 624 HSL volatile organics. Information presented in Appendix B is also provided on total volatile organics concentration maps for both the glacial aquifer and the Dolomite aquifer. This data is included in Appendix C. It is important to note that VOC maps for the glacial aquifer do not include data for the Ranney collectors. Results reported for these three wells actually represent results for composite samples of groundwater collected from the various Ranney collection lines each of which discharges to a control sump in each system. Consequently, water quality cannot be accurately represented on the maps for these three wells.

Review of the water quality data for the glacial wells indicates a general reduction in total VOCs in the vicinity of RC-1 and RC-3. Significant VOC concentrations were detected in RC-2, W-37, W-42, and W-47, perhaps indicating movement of contaminants toward the nearest collector well. No distinct trends can be identified in the remaining wells either due to variations in VOC concentrations or because wells were dry and, thus, could not be sampled.

Data for the dolomite wells indicates significant reduction in total VOC concentrations for Wells W-21A, W-29, W-30, W-38, and W-40. It is believed that this reduction demonstrates the effectiveness of the remediation as a result of pumping Well

W-30. Non-detectable results were reported for Village wells, MW-1, MW-2, and MW-3. Data was obtained for MW-4 only for the Summer quarter and total VOC concentrations of 5.7 µg/l were detected.

EVALUATION

The movement of the plume in the glacial aquifer appears to be effected by seasonal fluctuations in the water table. This, in turn, effects the efficiency of the Ranney collectors. However, there is not enough data available at this time to delineate trends. Both the potentiometric contours and the concentration isopleths appear to cross the Ranney collector lines at right angles indicating that the more porous materials in the Ranney collector trenches are inducing groundwater/contaminant flow towards the collector points.

The pumping of the present remedial dolomite wells appears to be minimizing the downgradient migration of the plume in the Dolomite aquifer. This appears to be primarily related to the shift in gradient induced by the high pumping rate at Well W-30. There is not enough data available at present to accurately predict the rate of remediation in the Dolomite aquifer.

Data presented in this annual report reflects the impact of the recently implemented remediation system. Generally, it appears that the systems are working as intended, particularly, the pumping of the Dolomite aquifer. It is evident that insufficient data has been developed to date from a number of the glacial wells because they have been dry. In order to more accurately monitor and understand the remediation system, it will be necessary to develop a better understanding of the local groundwater regime. Of particular interest, is whether or not there is hydraulic interaction between the Dolomite aquifer and the overlying glacial aquifer. This information can be developed once the aquifer test program proposed in the December 16, 1988, Task 3A, 3B, 3C, Work Plan is implemented. It is obvious that pumps will have to be lowered in a number of the dry wells, where

possible, in order to obtain water samples. Pumps will also have to be lowered in those shallow dolomite wells that are pumping only intermittently. Determination of the proper pump depths will be made after completion and evaluation of the aquifer test program.

Existence of dry glacial wells is attributed to several factors. First, an extensive drought was experienced in the State of Wisconsin this past year. The lower water level readings and dry wells may reflect the impact of this drought. Second, it is possible that the extensive pumping of the Dolomite aquifer by Well W-30 may, in fact, be lowering both the glacial aquifer, as well as, the Dolomite aquifer. This assumes that the Dolomite aquifer and overlying glacial aquifer are hydraulically interconnected and that with long-term pumping, dewatering of the overburden is actually occurring. Again, this will be more accurately evaluated upon completion of the proposed aquifer test.

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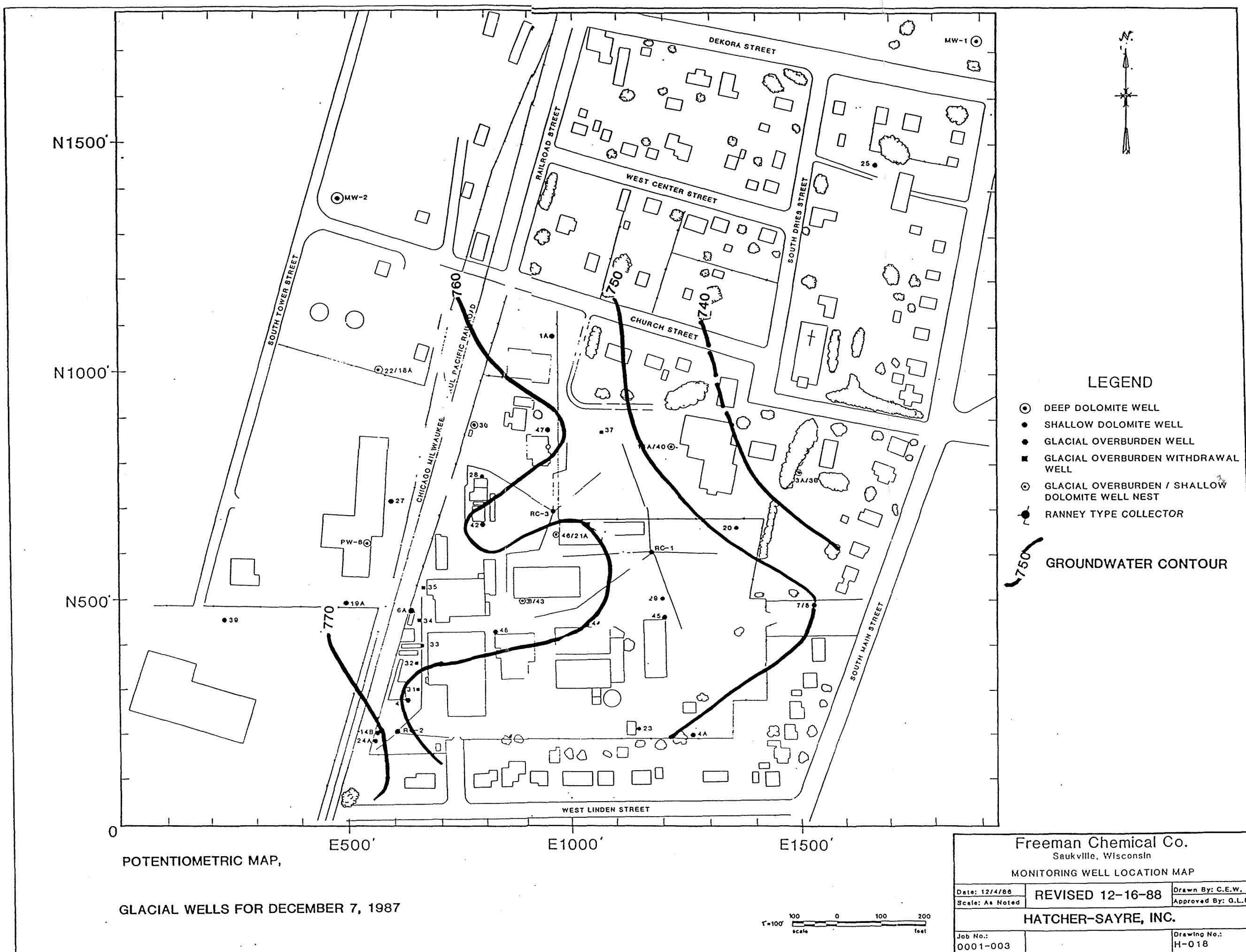
**APPENDIX A
POTENTIOMETRIC MAPS**

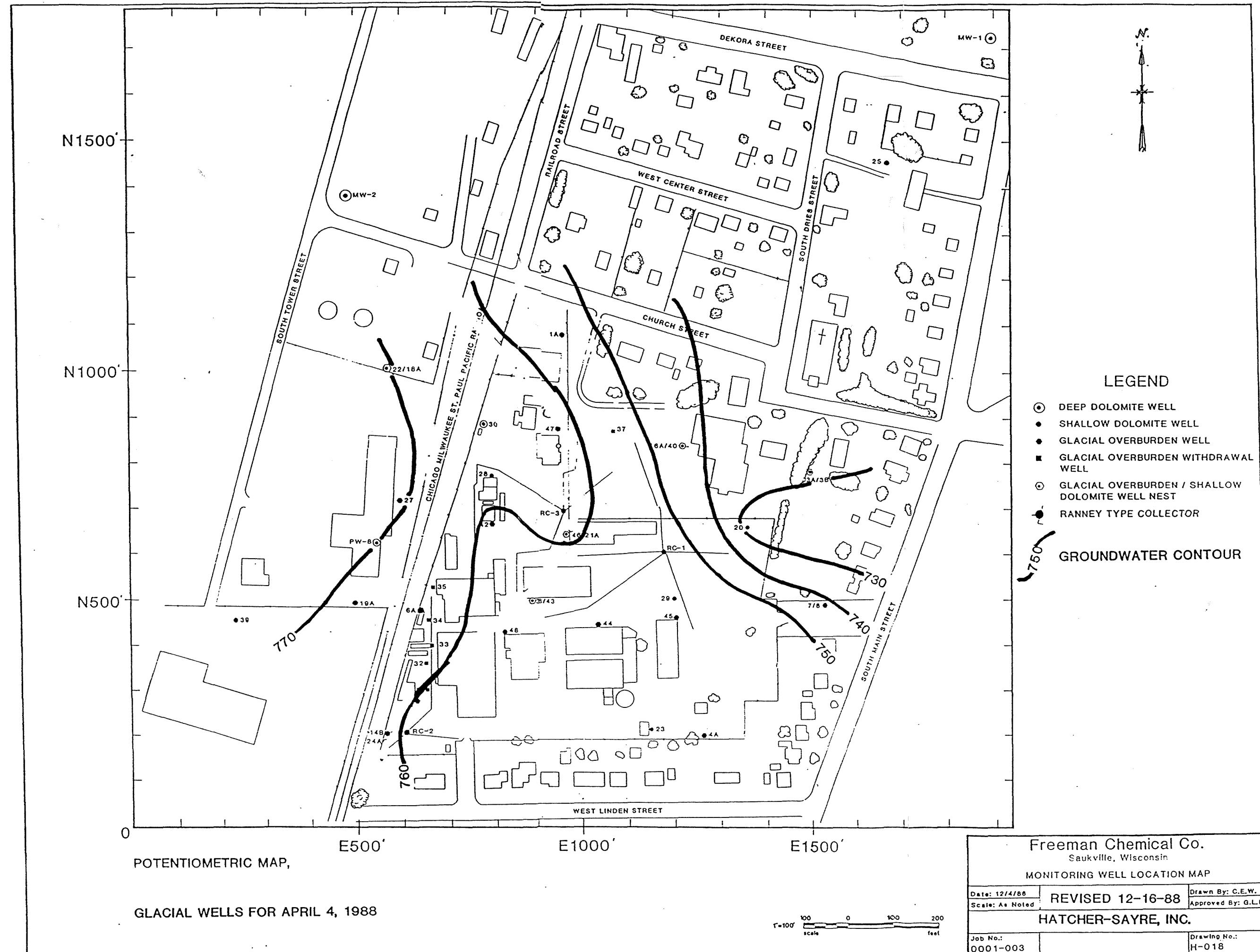
Glacial Aquifer

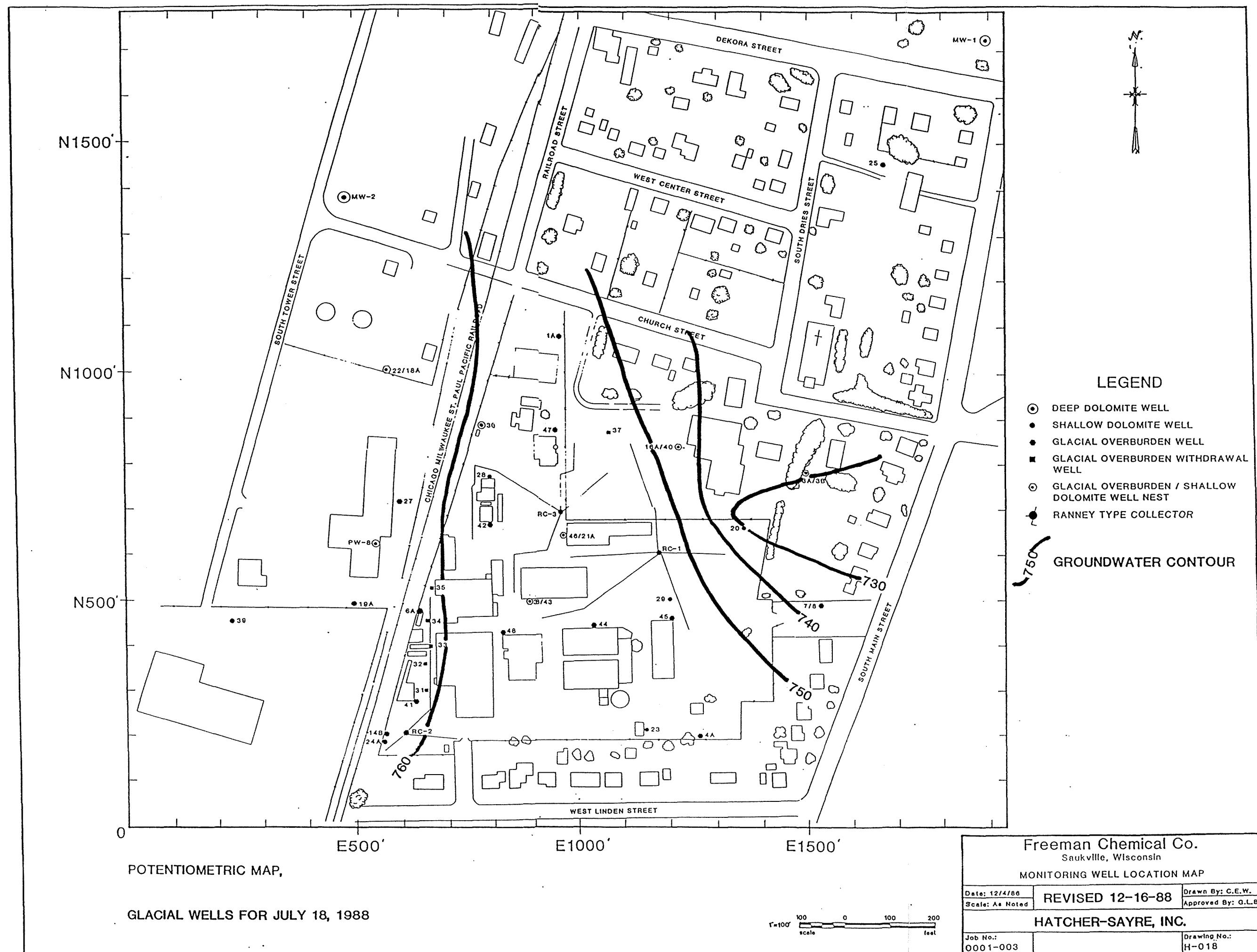
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- 2) April 4, 1988**
- 3) July 18, 1988**
- 4) October 11, 1988**

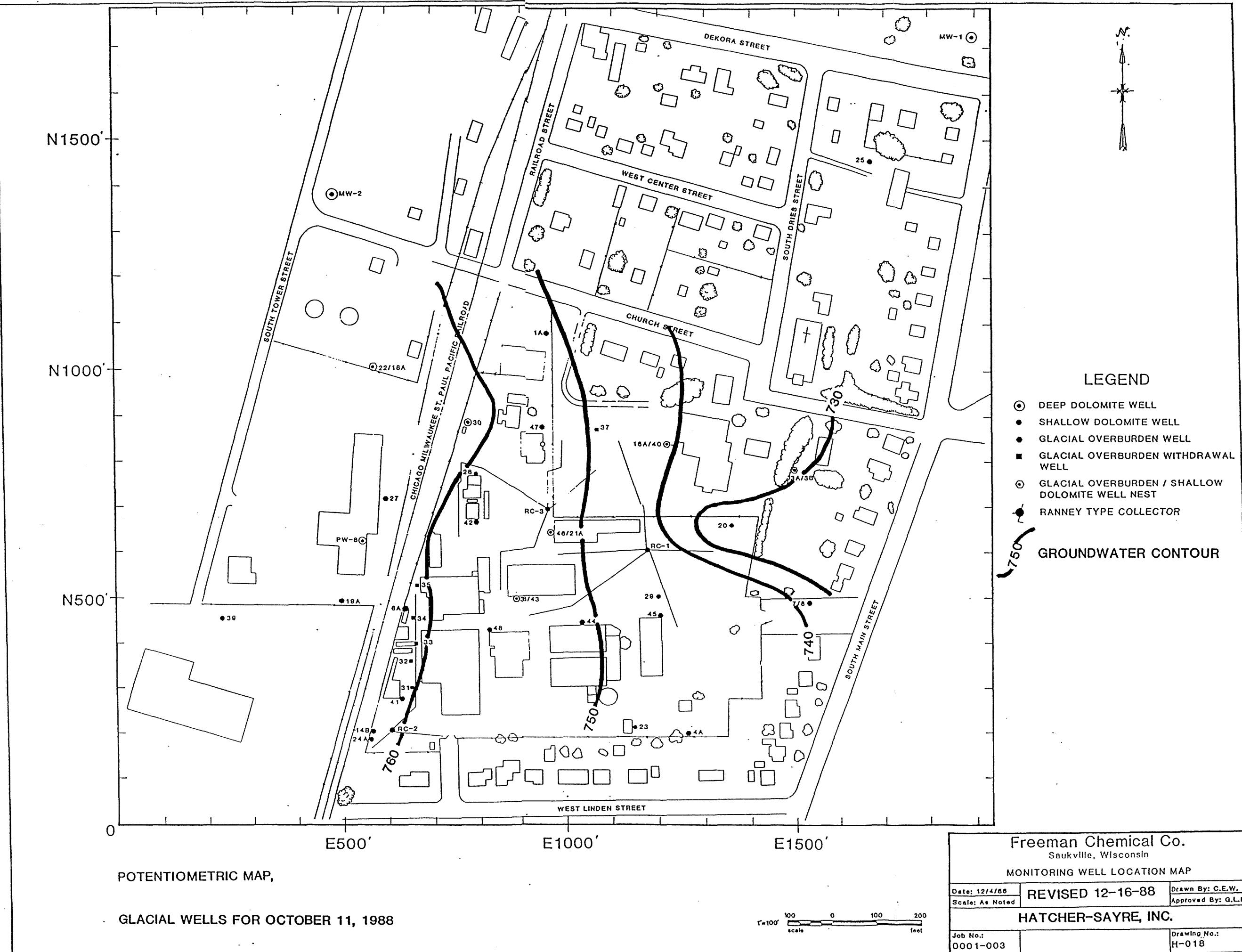
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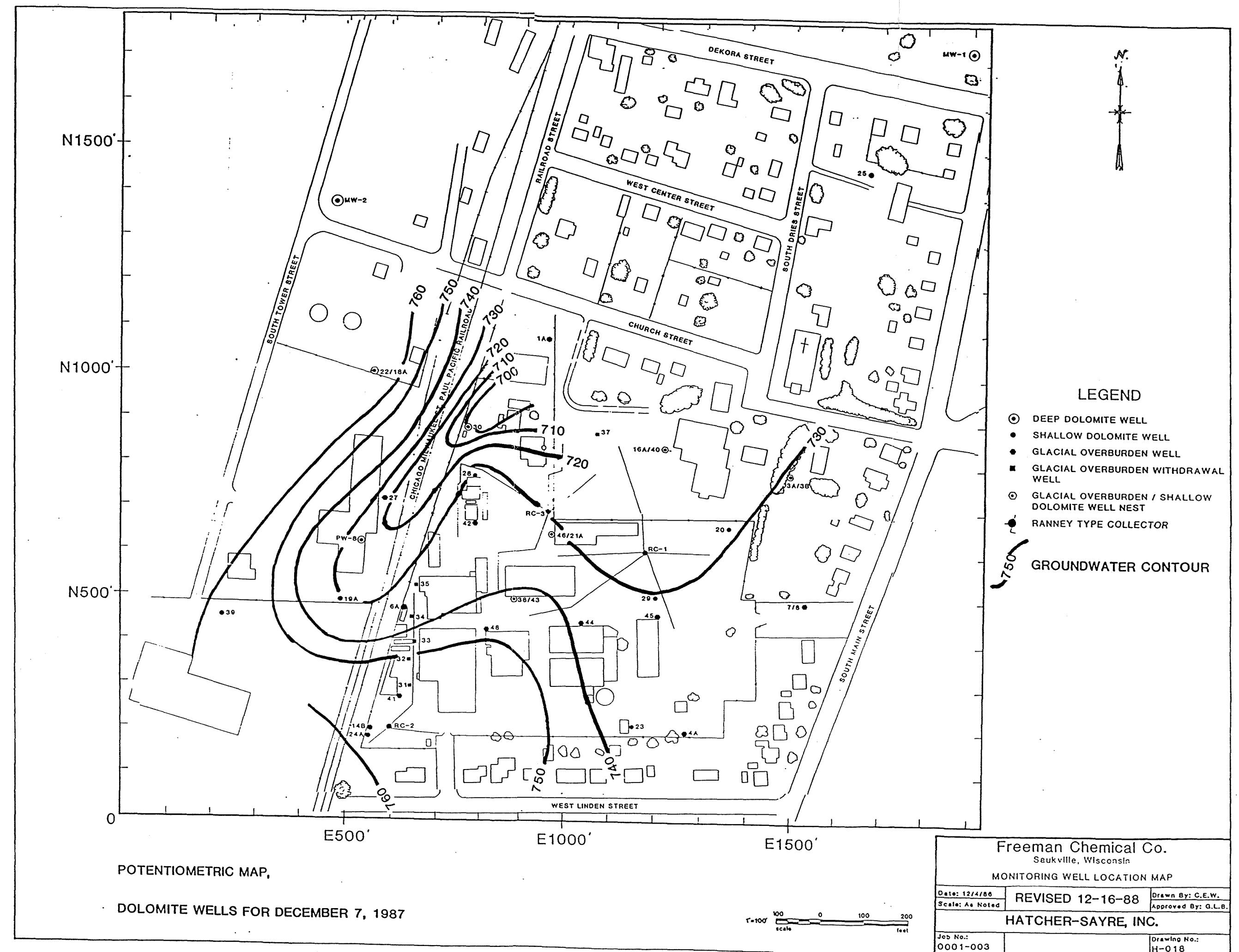
- 1) December 7, 1987**
- 2) April 4, 1988**
- 3) July 18, 1988**
- 4) October 11, 1988**

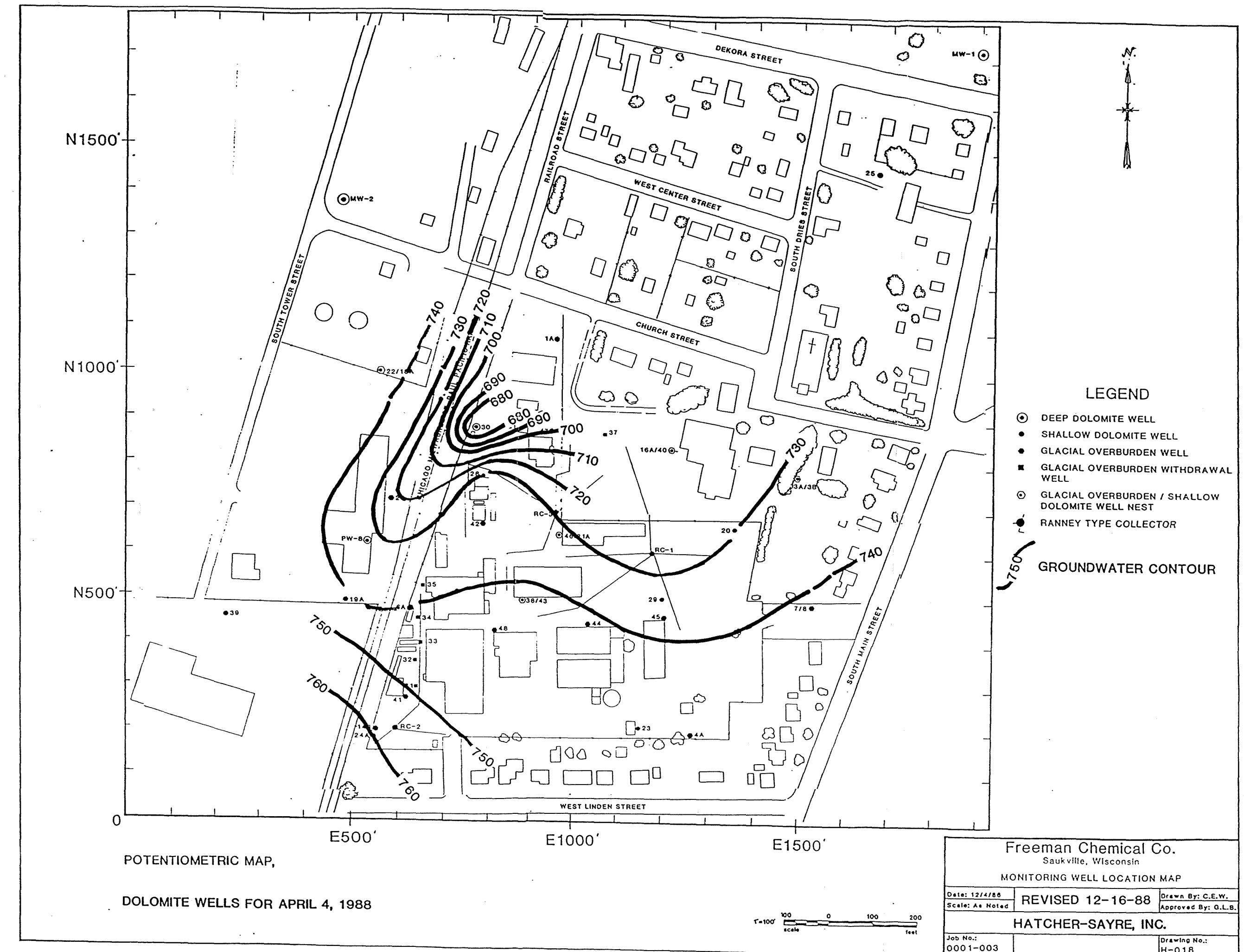


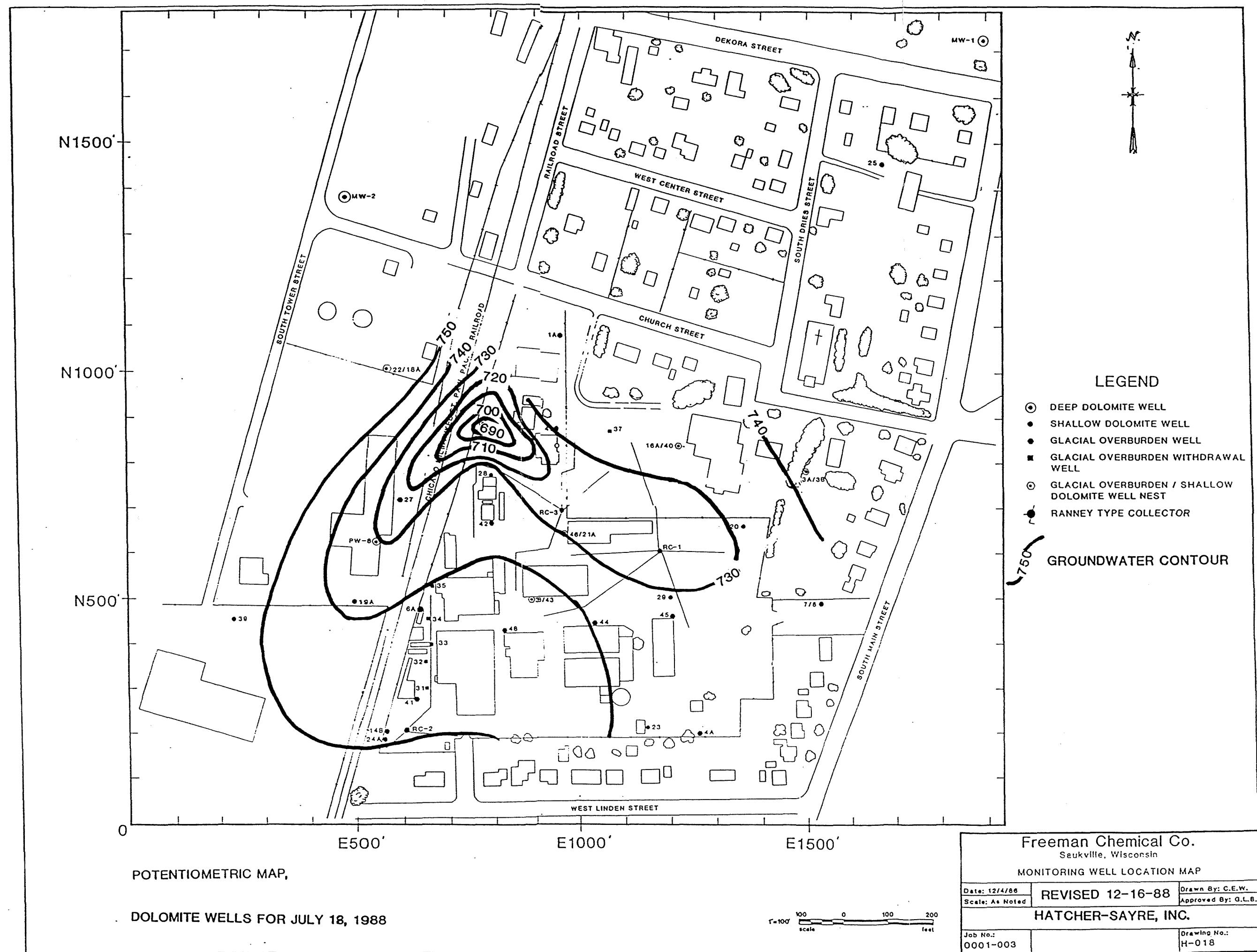


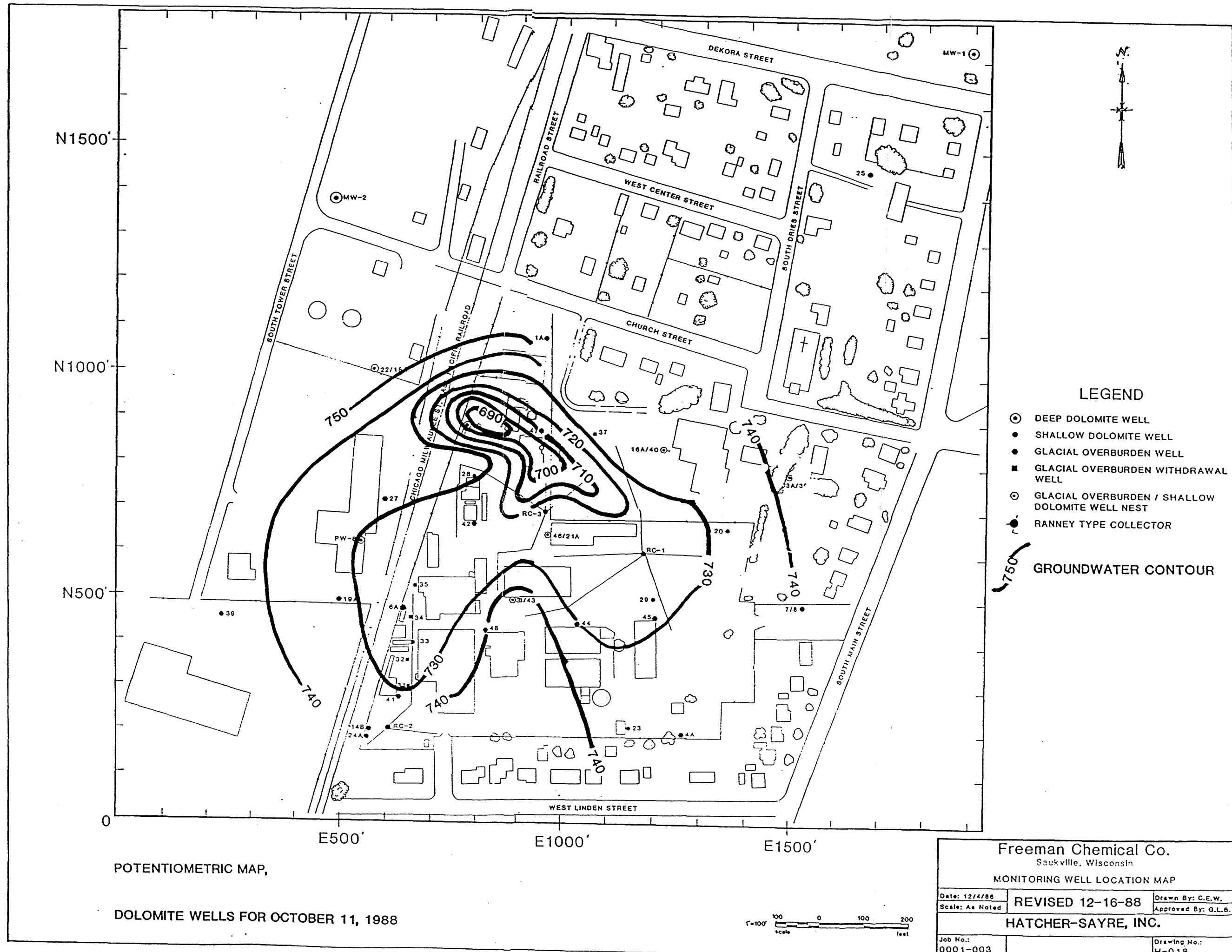












APPENDIX B

Summary of Water Quality Data
Glacial & Dolomite Wells
(EPA Method 624 HSL Volatile Organics)

SUMMARY OF QUARTERLY DATA

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. RC-1

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<1000	<500	<500	<2500
Bromomethane	<1000	<500	<500	<2500
Vinyl Chloride	<1000	<500	<500	<2500
Chloroethane	<1000	<500	<500	<2500
Methylene Chloride	<1000	<500	<500	<2500
Acetone	<10000	<2500	<2500	<12000
Carbon Disulfide	<200	<100	<100	<500
1,1-Dichloroethene	<200	<100	<100	<500
1,1-Dichloroethane	<200	<100	<100	<500
trans-1,2-Dichloroethene	650	<100	2500	<500
Chloroform	<200	<100	<100	<500
1,2-Dichloroethane	<200	<100	<100	<500
2-Butanone	<2000	<1000	<1000	<5000
1,1,1-Trichlorethane	<200	<100	<100	<500
Carbon Tetrachloride	<200	<100	<100	<500
Vinyl Acetate	<2000	<1000	<1000	<5000
Bromodichloromethane	<200	<100	<100	<500
1,1,2,2-Tetrachloroethane	<200	<100	<100	<500
1,2-Dichloropropane	<200	<100	<100	<500
trans-1,3-Dichloropropene	<200	<100	<100	<500
Trichloroethene	<200	<100	<100	<500
Dibromochloromethane	<200	<100	<100	<500
1,1,2-Trichloroethane	<200	<100	<100	<500
Benzene	3300	1000	400	<500
cis-1,3-Dichloropropene	<200	<100	<100	<500
2-Chloroethylvinylether	<2000	<1000	<1000	<5000
Bromoform	<200	<100	<100	<500
2-Hexanone	<2000	<1000	<1000	<5000
4-Methy-2-Pentanone	<2000	<1000	<1000	<5000
Tetrachlorethene	<200	<100	<100	<500
Toluene	45000	18000	20000	13000
Chlorobenzene	<200	<100	<100	<500
Ethylbenzene	21000	16000	19000	6000
Styrene	<200	3800	<100	<500
Total Xylenes	88000	67000	59000	31000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. RC-2

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<50	<50000	
Bromomethane	<5	<50	<50000	
Vinyl Chloride	51	<50	<50000	
Chloroethane	<5	<50	<50000	
Methylene Chloride	<5	<50	<120000	
Acetone	<50	<250	<120000	
Carbon Disulfide	<1	<50	<25000	
1,1-Dichloroethene	<1	<10	<25000	
1,1-Dichloroethane	<1	<10	<25000	
trans-1,2-Dichloroethene	76	27	<25000	
Chloroform	<1	<10	<25000	
1,2-Dichloroethane	<1	<10	<25000	
2-Butanone	<10	<100	<120000	
1,1,1-Trichlorethane	<1	<10	<25000	
Carbon Tetrachloride	<1	<10	<25000	
Vinyl Acetate	<10	<100	<50000	
Bromodichloromethane	<1	<10	<25000	
1,1,2,2-Tetrachloroethane	<1	<10	<25000	
1,2-Dichloropropane	<1	<10	<25000	
trans-1,3-Dichloropropene	<1	<10	<25000	
Trichloroethene	<1	<10	<25000	
Dibromochloromethane	<1	<10	<25000	
1,1,2-Trichloroethane	<1	<10	<25000	
Benzene	<1	<10	<25000	
cis-1,3-Dichloropropene	<1	<10	<25000	
2-Chloroethylvinylether	<10	<100	<50000	
Bromoform	<1	<10	<25000	
2-Hexanone	<10	<100	<50000	
4-Methy-2-Pentanone	<10	<100	<50000	
Tetrachlorethene	<1	<10	<25000	
Toluene	64	32	<25000	
Chlorobenzene	<1	<10	<25000	
Ethylbenzene	110	<10	43000	
Styrene	<1	<10	<25000	
Total Xylenes	1400	490	150000	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. RC-3

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<500	<5000	<500	<2500
Bromomethane	<500	<5000	<500	<2500
Vinyl Chloride	<500	<5000	<500	<2500
Chloroethane	<500	<5000	<500	<2500
Methylene Chloride	<500	<5000	<500	<2500
Acetone	<5000	<25000	<2500	<12000
Carbon Disulfide	<100	<1000	<100	<500
1,1-Dichloroethene	<100	<1000	<100	<500
1,1-Dichloroethane	<100	<1000	<100	<500
trans-1,2-Dichloroethene	<100	<1000	460	<500
Chloroform	<100	<1000	<100	<500
1,2-Dichloroethane	<100	<1000	<100	<500
2-Butanone	<1000	<10000	<1000	<5000
1,1,1-Trichlorethane	<100	<1000	<100	<500
Carbon Tetrachloride	<100	<1000	<100	<500
Vinyl Acetate	<1000	<10000	<1000	<5000
Bromodichloromethane	<100	<1000	<100	<500
1,1,2,2-Tetrachloroethane	<100	<1000	<100	<500
1,2-Dichloropropane	<100	<1000	<100	<500
trans-1,3-Dichloropropene	<100	<1000	<100	<500
Trichloroethene	<100	<1000	<100	<500
Dibromochloromethane	<100	<1000	<100	<500
1,1,2-Trichloroethane	<100	<1000	<100	<500
Benzene	1400	<1000	1000	<500
cis-1,3-Dichloropropene	<100	<1000	<100	<500
2-Chloroethylvinylether	<1000	<10000	<1000	<5000
Bromoform	<100	<1000	<100	<500
2-Hexanone	<1000	<10000	<1000	<5000
4-Methy-2-Pentanone	<1000	<10000	<1000	<5000
Tetrachlorethene	<100	<1000	<100	<500
Toluene	24000	24000	25000	16000
Chlorobenzene	<100	<1000	<100	<500
Ethylbenzene	16000	9000	20000	8200
Styrene	<100	<1000	<100	<500
Total Xylenes	42000	44000	110000	42000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. MW-1

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<2	<10
Bromomethane	<5	<5	<2	<10
Vinyl Chloride	<5	<5	<2	<10
Chloroethane	<5	<5	<2	<10
Methylene Chloride	<5	<5	<25	<25
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<25	<10
1,1,1-Trichlorethane	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<2	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<2	<1
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<2	<10
4-Methy-2-Pentanone	<10	<10	<2	<10
Tetrachlorethene	<1	<1	<1	<1
Toluene	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. MW-2

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<5	<5	<2	<10
Bromomethane		<5	<5	<2	<10
Vinyl Chloride		<5	<5	<2	<10
Chloroethane		<5	<5	<2	<10
Methylene Chloride		<5	<5	<25	<25
Acetone		<50	<25	<25	<25
Carbon Disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<1	<1	<1	<1
1,1-Dichloroethane		<1	<1	<1	<1
trans-1,2-Dichloroethene		<1	<1	<1	<1
Chloroform		<1	<1	<1	<1
1,2-Dichloroethane		<1	<1	<1	<1
2-Butanone		<10	<10	<25	<10
1,1,1-Trichlorethane		<1	<1	<1	<1
Carbon Tetrachloride		<1	<1	<1	<1
Vinyl Acetate		<10	<10	<2	<10
Bromodichloromethane		<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		<1	<1	<1	<1
1,2-Dichloropropane		<1	<1	<1	<1
trans-1,3-Dichloropropene		<1	<1	<1	<1
Trichloroethene		<1	<1	<1	<1
Dibromochloromethane		<1	<1	<1	<1
1,1,2-Trichloroethane		<1	<1	<1	<1
Benzene		<1	<1	<1	<1
cis-1,3-Dichloropropene		<1	<1	<1	<1
2-Chloroethylvinylether		<10	<10	<2	<1
Bromoform		<1	<1	<1	<1
2-Hexanone		<10	<10	<2	<10
4-Methyl-2-Pentanone		<10	<10	<2	<10
Tetrachlorethene		<1	<1	<1	<1
Toluene		<1	<1	<1	<1
Chlorobenzene		<1	<1	<1	<1
Ethylbenzene		<1	<1	<1	<1
Styrene		<1	<1	<1	<1
Total Xylenes		<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. MW-3

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<5	<5	<2	<10
Bromomethane		<5	<5	<2	<10
Vinyl Chloride		<5	<5	<2	<10
Chloroethane		<5	<5	<2	<10
Methylene Chloride		<5	<5	<25	<25
Acetone		<50	<25	<25	<25
Carbon Disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<1	<1	<1	<1
1,1-Dichloroethane		<1	<1	<1	<1
trans-1,2-Dichloroethene		<1	<1	<1	<1
Chloroform		<1	<1	<1	<1
1,2-Dichloroethane		<1	<1	<1	<1
2-Butanone		<10	<10	<25	<10
1,1,1-Trichlorethane		<1	<1	<1	<1
Carbon Tetrachloride		<1	<1	<1	<1
Vinyl Acetate		<10	<10	<2	<10
Bromodichloromethane		<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		<1	<1	<1	<1
1,2-Dichloropropane		<1	<1	<1	<1
trans-1,3-Dichloropropene		<1	<1	<1	<1
Trichloroethene		<1	<1	<1	<1
Dibromochloromethane		<1	<1	<1	<1
1,1,2-Trichloroethane		<1	<1	<1	<1
Benzene		<1	<1	<1	<1
cis-1,3-Dichloropropene		<1	<1	<1	<1
2-Chloroethylvinylether		<10	<10	<2	<1
Bromoform		<1	<1	<1	<1
2-Hexanone		<10	<10	<2	<10
4-Methy-2-Pentanone		<10	<10	<2	<10
Tetrachlorethene		<1	<1	<1	<1
Toluene		<1	<1	<1	<1
Chlorobenzene		<1	<1	<1	<1
Ethylbenzene		<1	<1	<1	<1
Styrene		<1	<1	<1	<1
Total Xylenes		<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. MW-4

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<2	
Methylene Chloride				<25	
Acetone				<25	
Carbon Disulfide				<1	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methy-2-Pentanone				<2	
Tetrachlorethane				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				<1	
Styrene				<1	
Total Xylenes				5.7	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 1A

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane			<2	
Bromomethane			<2	
Vinyl Chloride			<2	
Chloroethane			<2	
Methylene Chloride			<25	
Acetone			<25	
Carbon Disulfide			<1	
1,1-Dichloroethene			<1	
1,1-Dichloroethane			<1	
trans-1,2-Dichloroethene			<1	
Chloroform			<1	
1,2-Dichloroethane			<1	
2-Butanone			<25	
1,1,1-Trichlorethane			<1	
Carbon Tetrachloride			<1	
Vinyl Acetate			<2	
Bromodichloromethane			<1	
1,1,2,2-Tetrachloroethane			<1	
1,2-Dichloropropane			<1	
trans-1,3-Dichloropropene			<1	
Trichloroethene			<1	
Dibromochloromethane			<1	
1,1,2-Trichloroethane			<1	
Benzene			<1	
cis-1,3-Dichloropropene			<1	
2-Chloroethylvinylether			<2	
Bromoform			<1	
2-Hexanone			<2	
4-Methy-2-Pentanone			<2	
Tetrachlorethene			<1	
Toluene			<1	
Chlorobenzene			<1	
Ethylbenzene			<1	
Styrene			<1	
Total Xylenes			11	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 3A

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<5	<5	<2	<10
Bromomethane		<5	<5	<2	<10
Vinyl Chloride		<5	<5	<2	<10
Chloroethane		<5	<5	<2	<10
Methylene Chloride		<5	<5	<25	<25
Acetone		<50	<25	<25	<25
Carbon Disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<1	<1	<1	<1
1,1-Dichloroethane		<1	<1	<1	<1
trans-1,2-Dichloroethene		<1	<1	<1	<1
Chloroform		<1	<1	<1	<1
1,2-Dichloroethane		<1	<1	<1	<1
2-Butanone		<10	<10	<25	<10
1,1,1-Trichlorethane		<1	<1	<1	<1
Carbon Tetrachloride		<1	<1	<1	<1
Vinyl Acetate		<10	<10	<2	<10
Bromodichloromethane		<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		<1	<1	<1	<1
1,2-Dichloropropane		<1	<1	<1	<1
trans-1,3-Dichloropropene		<1	<1	<1	<1
Trichloroethene		<1	<1	<1	<1
Dibromochloromethane		<1	<1	<1	<1
1,1,2-Trichloroethane		<1	<1	<1	<1
Benzene		<1	<1	<1	3.2
cis-1,3-Dichloropropene		<1	<1	<1	<1
2-Chloroethylvinylether		<10	<10	<2	<1
Bromoform		<1	<1	<1	<10
2-Hexanone		<10	<10	<2	<1
4-Methyl-2-Pentanone		<10	<10	<2	<10
Tetrachlorethene		<1	<1	<1	<1
Toluene		2.8	<1	<1	<1
Chlorobenzene		<1	<1	<1	<1
Ethylbenzene		<1	<1	<1	<1
Styrene		<1	<1	<1	<1
Total Xylenes		<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 3B

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<25	
Methylene Chloride				<25	
Acetone				<1	
Carbon Disulfide				<1	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methy-2-Pentanone				<2	
Tetrachlorethane				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				<1	
Styrene				<1	
Total Xylenes				<1	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 4A

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane			DRY	DRY
Bromomethane				
Vinyl Chloride				
Chloroethane				
Methylene Chloride				
Acetone				
Carbon Disulfide				
1,1-Dichloroethene				
1,1-Dichloroethane				
trans-1,2-Dichloroethene				
Chloroform				
1,2-Dichloroethane				
2-Butanone				
1,1,1-Trichlorethane				
Carbon Tetrachloride				
Vinyl Acetate				
Bromodichloromethane				
1,1,2,2-Tetrachloroethane				
1,2-Dichloropropane				
trans-1,3-Dichloropropene				
Trichloroethene				
Dibromochloromethane				
1,1,2-Trichloroethane				
Benzene				
cis-1,3-Dichloropropene				
2-Chloroethylvinylether				
Bromoform				
2-Hexanone				
4-Methy-2-Pentanone				
Tetrachlorethane				
Toluene				
Chlorobenzene				
Ethylbenzene				
Styrene				
Total Xylenes				

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 6A

Compound	Sampling Date	12/87	4/88	7/88	10/88
		ug/L	ug/L	ug/L	ug/L
Chloromethane		<100	<1200	<5000	<5000
Bromomethane		<100	<1200	<5000	<5000
Vinyl Chloride		<100	<1200	<5000	<5000
Chloroethane		<100	<1200	<5000	<5000
Methylene Chloride		<100	<2500	<5000	<5000
Acetone		2800	<6200	<25000	<25000
Carbon Disulfide		<20	<250	<1000	<1000
1,1-Dichloroethene		<20	<250	<1000	<1000
1,1-Dichloroethane		<20	<250	<1000	<1000
trans-1,2-Dichloroethene		3000	2300	<1000	<1000
Chloroform		<20	<250	<1000	<1000
1,2-Dichloroethane		<20	<250	<1000	<1000
2-Butanone		540	<2500	<1000	<10000
1,1,1-Trichlorethane		<20	<250	<1000	<1000
Carbon Tetrachloride		<20	<250	<1000	<1000
Vinyl Acetate		<200	<2500	<10000	<10000
Bromodichloromethane		<20	<250	<1000	<1000
1,1,2,2-Tetrachloroethane		<20	<250	<1000	<1000
1,2-Dichloropropane		<20	<250	<1000	<1000
trans-1,3-Dichloropropene		<20	<250	<1000	<1000
Trichloroethene		<20	<250	<1000	<1000
Dibromochloromethane		<20	<250	<1000	<1000
1,1,2-Trichloroethane		<20	<250	<1000	<1000
Benzene		1900	1500	<1000	<1000
cis-1,3-Dichloropropene		<20	<250	<1000	<1000
2-Chloroethylvinylether		<200	<2500	<10000	<10000
Bromoform		<20	<250	<1000	<1000
2-Hexanone		<200	<2500	<10000	<10000
4-Methy-2-Pentanone		310	<2500	<10000	<10000
Tetrachlorethene		<20	<250	<1000	<1000
Toluene		52000	60000	55000	50000
Chlorobenzene		<20	<250	<1000	<1000
Ethylbenzene		9800	20000	17000	17000
Styrene		<20	<250	<1000	<1000
Total Xylenes		52000	83000	77000	72000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 7A

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<2	<5
Bromomethane	<5	<5	<2	<5
Vinyl Chloride	<5	<5	<2	<5
Chloroethane	<5	<5	<2	<5
Methylene Chloride	<5	<5	<25	<5
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<25	<10
1,1,1-Trichlorethane	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<2	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<2	<10
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<2	<10
4-Methy-2-Pentanone	<10	<10	<2	<10
Tetrachlorethene	<1	<1	<1	<1
Toluene	<1	<1	<1	1.4
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	1.1
Styrene	<1	<1	<1	<1
Total Xylenes	<1	<1	<1	8.7

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. PW-8

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<2	<10
Bromomethane	<5	<5	<2	<10
Vinyl Chloride	<5	<5	<2	<10
Chloroethane	<5	<5	<2	<10
Methylene Chloride	<5	<5	<25	<25
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<25	<10
1,1,1-Trichlorethane	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<2	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	12	8.4	7	2.9
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<2	<1
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<2	<10
4-Methy-2-Pentanone	<10	<10	<2	<10
Tetrachlorethene	<1	<1	<1	<1
Toluene	2.8	2.3	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	11	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 8A

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<2	
Methylene Chloride				<25	
Acetone				<25	
Carbon Disulfide				<1	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methy-2-Pentanone				<2	
Tetrachlorethene				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				<1	
Styrene				<1	
Total Xylenes				<1	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 14B

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<5	<5	<5	<5
Bromomethane		<5	<5	<5	<5
Vinyl Chloride		<5	<5	<5	<5
Chloroethane		<5	<5	<5	<5
Methylene Chloride		<5	<10	<5	<5
Acetone		<50	<25	<25	<25
Carbon Disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<1	<1	<1	<1
1,1-Dichloroethane		<1	<1	<1	<1
trans-1,2-Dichloroethene		<1	<1	<1	<1
Chloroform		<1	<1	<1	<1
1,2-Dichloroethane		<1	<1	<1	<1
2-Butanone		<10	<10	<10	<10
1,1,1-Trichlorethane		<1	<1	<1	<1
Carbon Tetrachloride		<1	<1	<1	<1
Vinyl Acetate		<10	<10	<10	<10
Bromodichloromethane		<1	<1	<1	<1
1,1,2,2-Tetrachloroethane		<1	<1	<1	<1
1,2-Dichloropropane		<1	<1	<1	<1
trans-1,3-Dichloropropene		<1	<1	<1	<1
Trichloroethene		<1	<1	<1	<1
Dibromochloromethane		<1	<1	<1	<1
1,1,2-Trichloroethane		<1	<1	<1	<1
Benzene		<1	<1	<1	<1
cis-1,3-Dichloropropene		<1	<1	<1	<1
2-Chloroethylvinylether		<10	<10	<10	<10
Bromoform		<1	<1	<1	<1
2-Hexanone		<10	<10	<10	<10
4-Methy-2-Pentanone		<10	<10	<10	<10
Tetrachlorethene		<1	<1	1-1	<1
Toluene		<1	<1	<1	<1
Chlorobenzene		<1	<1	<1	<1
Ethylbenzene		<1	<1	<1	<1
Styrene		<1	<1	<1	<1
Total Xylenes		<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 16A

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		DRY	DRY	DRY
Bromomethane				
Vinyl Chloride				
Chloroethane				
Methylene Chloride				
Acetone				
Carbon Disulfide				
1,1-Dichloroethene				
1,1-Dichloroethane				
trans-1,2-Dichloroethene				
Chloroform				
1,2-Dichloroethane				
2-Butanone				
1,1,1-Trichlorethane				
Carbon Tetrachloride				
Vinyl Acetate				
Bromodichloromethane				
1,1,2,2-Tetrachloroethane				
1,2-Dichloropropane				
trans-1,3-Dichloropropene				
Trichloroethene				
Dibromochloromethane				
1,1,2-Trichloroethane				
Benzene				
cis-1,3-Dichloropropene				
2-Chloroethylvinylether				
Bromoform				
2-Hexanone				
4-Methy-2-Pentanone				
Tetrachlorethene				
Toluene				
Chlorobenzene				
Ethylbenzene				
Styrene				
Total Xylenes				

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 18A

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<2	<5
Bromomethane	<5	<5	<2	<5
Vinyl Chloride	<5	<5	<2	<5
Chloroethane	<5	<5	<2	<5
Methylene Chloride	<5	<5	<25	<5
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<25	<10
1,1,1-Trichlorethane	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<2	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<2	<10
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<2	<10
4-Methy-2-Pentanone	<10	<10	<2	<10
Tetrachlorethane	<1	<1	<1	<1
Toluene	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 19A

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<100	<10
Bromomethane	<5	<5	<100	<10
Vinyl Chloride	10	14	<100	11
Chloroethane	<5	<5	<100	<10
Methylene Chloride	<5	<5	<250	<25
Acetone	<50	<25	<250	<25
Carbon Disulfide	<1	<1	<50	<1
1,1-Dichloroethene	<1	<1	<50	1.2
1,1-Dichloroethane	<1	<1	<50	<1
trans-1,2-Dichloroethene	120	140	170	160
Chloroform	<1	<1	<50	<1
1,2-Dichloroethane	<1	<1	<50	<1
2-Butanone	<10	<10	<250	<10
1,1,1-Trichlorethane	<1	<1	<50	<1
Carbon Tetrachloride	<1	<1	<50	<1
Vinyl Acetate	<10	<10	<100	<10
Bromodichloromethane	<1	<1	<50	<1
1,1,2,2-Tetrachloroethane	<1	<1	<50	<1
1,2-Dichloropropane	<1	<1	<50	<1
trans-1,3-Dichloropropene	<1	<1	<50	<1
Trichloroethene	750	1200	1100	990
Dibromochloromethane	<1	<1	<50	<1
1,1,2-Trichloroethane	<1	<1	<50	<1
Benzene	<1	<1	<50	2.3
cis-1,3-Dichloropropene	<1	<1	<50	<1
2-Chloroethylvinylether	<10	<10	<100	<1
Bromoform	<1	<1	<50	<1
2-Hexanone	<10	<10	<100	<10
4-Methy-2-Pentanone	<10	<10	<100	<10
Tetrachlorethene	<1	<1	<50	<1
Toluene	2.2	<1	<50	<1
Chlorobenzene	1.1	<1	<50	3.7
Ethylbenzene	<1	<1	<50	<1
Styrene	<1	<1	<50	<1
Total Xylenes	<1	<1	<50	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 20

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane			<5	<5	<10
Bromomethane			<5	<5	<10
Vinyl Chloride			<5	<5	<10
Chloroethane			<5	<5	<10
Methylene Chloride			<5	<5	<25
Acetone			<25	<25	<25
Carbon Disulfide			<1	<1	<1
1,1-Dichloroethene			<1	<1	<1
1,1-Dichloroethane			<1	<1	<1
trans-1,2-Dichloroethene			<1	<1	<1
Chloroform			<1	<1	<1
1,2-Dichloroethane			<1	<1	<1
2-Butanone			<10	<10	<10
1,1,1-Trichlorethane			<1	<1	<1
Carbon Tetrachloride			<1	<1	<1
Vinyl Acetate			<10	<10	<10
Bromodichloromethane			<1	<1	<1
1,1,2,2-Tetrachloroethane			<1	<1	<1
1,2-Dichloropropane			<1	<1	<1
trans-1,3-Dichloropropene			<1	<1	<1
Trichloroethene			<1	<1	<1
Dibromochloromethane			<1	<1	<1
1,1,2-Trichloroethane			<1	<1	<1
Benzene			<1	<1	<1
cis-1,3-Dichloropropene			<1	<1	<1
2-Chloroethylvinylether			<10	<10	<1
Bromoform			<1	<1	<1
2-Hexanone			<10	<10	<10
4-Methy-2-Pentanone			<10	<10	<10
Tetrachlorethane			<1	<1	<1
Toluene			<1	<1	<1
Chlorobenzene			<1	<1	<1
Ethylbenzene			<1	<1	<1
Styrene			<1	<1	<1
Total Xylenes			<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 21-A

Compound	Sampling Date	12/87	4/88	7/88	10/88
		ug/L	ug/L	ug/L	ug/L
Chloromethane		<500	<500	<1300	<1200
Bromomethane		<500	<500	<1300	<1200
Vinyl Chloride		<500	<500	<1300	<1200
Chloroethane		<500	<500	<1300	<1200
Methylene Chloride		<3000	<500	<1300	<1200
Acetone		<5000	<2500	<6300	<6200
Carbon Disulfide		<100	<100	<250	<250
1,1-Dichloroethene		<100	<100	<250	<250
1,1-Dichloroethane		<100	<100	<250	<250
trans-1,2-Dichloroethene		<100	<100	<250	<250
Chloroform		<100	<100	<250	<250
1,2-Dichloroethane		<100	<100	<250	<250
2-Butanone		<1000	<1000	<2500	<2500
1,1,1-Trichlorethane		<100	<100	<250	<250
Carbon Tetrachloride		<100	<100	<250	<250
Vinyl Acetate		<1000	<1000	<2500	<2500
Bromodichloromethane		<100	<100	<250	<250
1,1,2,2-Tetrachloroethane		<100	<100	<250	<250
1,2-Dichloropropane		<100	<100	<250	<250
trans-1,3-Dichloropropene		<100	<100	<250	<250
Trichloroethene		<100	<100	<250	<250
Dibromochloromethane		<100	<100	<250	<250
1,1,2-Trichloroethane		<100	<100	<250	<250
Benzene		3500	2900	1800	12400
cis-1,3-Dichloropropene		<100	<100	<250	<250
2-Chloroethylvinylether		<1000	<1000	<2500	<2500
Bromoform		<100	<100	<250	<250
2-Hexanone		<1000	<1000	<2500	<2500
4-Methy-2-Pentanone		<1000	<1000	<2500	<2500
Tetrachlorethene		<100	<100	<250	<250
Toluene		11000	14000	9700	15000
Chlorobenzene		<100	<100	<250	<250
Ethylbenzene		23000	21000	11000	16000
Styrene		<100	<100	<250	<250
Total Xylenes		23000	22000	13000	16000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 22

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<2	
Methylene Chloride				<2	
Acetone				<25	
Carbon Disulfide				<25	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methy-2-Pentanone				<2	
Tetrachlorethane				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				<1	
Styrene				<1	
Total Xylenes				<1	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 23

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<2	
Methylene Chloride				<25	
Acetone				<25	
Carbon Disulfide				<1	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methy-2-Pentanone				<2	
Tetrachlorethane				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				30	
Styrene				<1	
Total Xylenes				150	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 24A

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<5	<5
Bromomethane	<5	<5	<5	<5
Vinyl Chloride	21	<5	<5	<5
Chloroethane	<5	<5	<5	<5
Methylene Chloride	<5	<5	<5	<5
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	61	13	53	62
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<10	<10
1,1,1-Trichlorethane	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<10	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<10	<10
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<10	<10
4-Methy-2-Pentanone	<10	<10	<10	<10
Tetrachlorethene	<1	<1	<1	<1
Toluene	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	<1	<1	<1	3.7

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 25

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<2	
Methylene Chloride				<25	
Acetone				<25	
Carbon Disulfide				<1	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methyl-2-Pentanone				<2	
Tetrachlorethane				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				<1	
Styrene				<1	
Total Xylenes				<1	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 27

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<2	<10
Bromomethane	<5	<5	<2	<10
Vinyl Chloride	<5	<5	<2	<10
Chloroethane	<5	<5	<2	<10
Methylene Chloride	<5	<5	<25	<25
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	49	57	44
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<25	<10
1,1,1-Trichlorethane	<1	1.1	<1	1.5
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<2	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	170	160	150
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	<1	<1	<1	1.6
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<2	<1
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<2	<10
4-Methy-2-Pentanone	<10	<10	<2	<10
Tetrachlorethene	<1	<1	<1	<1
Toluene	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	<1	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 28

Sampling Date	12/87	4/88	7/88	10/88
Compound	ug/L	ug/L	ug/L	ug/L
Chloromethane	<5	<5	<5	<25
Bromomethane	<5	<5	<5	<25
Vinyl Chloride	<5	<5	<5	<25
Chloroethane	<5	<5	<5	<25
Methylene Chloride	<5	<5	<5	<25
Acetone	<50	<25	<25	<120
Carbon Disulfide	<1	<1	<1	<5
1,1-Dichloroethene	<1	<1	<1	<5
1,1-Dichloroethane	<1	<1	<1	<5
trans-1,2-Dichloroethene	<1	<1	<1	<5
Chloroform	<1	<1	<1	<5
1,2-Dichloroethane	<1	<1	<1	<5
2-Butanone	<10	<10	<10	<50
1,1,1-Trichlorethane	<1	<1	<1	<5
Carbon Tetrachloride	<1	<1	<1	<5
Vinyl Acetate	<10	<10	<10	<50
Bromodichloromethane	<1	<1	<1	<5
1,1,2,2-Tetrachloroethane	<1	<1	<1	<5
1,2-Dichloropropane	<1	<1	<1	<5
trans-1,3-Dichloropropene	<1	<1	<1	<5
Trichloroethene	<1	<1	<1	<5
Dibromochloromethane	<1	<1	<1	<5
1,1,2-Trichloroethane	<1	<1	<1	<5
Benzene	4.8	<1	<1	<5
cis-1,3-Dichloropropene	<1	<1	<1	<5
2-Chloroethylvinylether	<10	<10	<10	<50
Bromoform	<1	<1	<1	<5
2-Hexanone	<10	<10	<10	<50
4-Methy-2-Pentanone	<10	<10	<10	<50
Tetrachlorethene	<1	<1	<1	<5
Toluene	6.9	<1	<1	<5
Chlorobenzene	<1	<1	<1	<5
Ethylbenzene	<1	<1	<1	<5
Styrene	<1	<1	<1	<5
Total Xylenes	12	<1	<1	<5

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 29

Compound	Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<25	<250	<250	<500
Bromomethane		<25	<250	<250	<500
Vinyl Chloride		340	<250	<250	<500
Chloroethane		<25	<250	<250	<500
Methylene Chloride		<25	<500	<250	<500
Acetone		<500	<1200	<1300	<2500
Carbon Disulfide		<25	<50	<50	<100
1,1-Dichloroethene		<5	<50	<50	<100
1,1-Dichloroethane		<5	<50	<50	<100
trans-1,2-Dichloroethene		17	<50	<50	<100
Chloroform		<5	<50	<50	<100
1,2-Dichloroethane		<5	<50	<50	<100
2-Butanone		<50	<500	<500	<1000
1,1,1-Trichlorethane		<5	<50	<50	<100
Carbon Tetrachloride		<5	<50	<50	<100
Vinyl Acetate		<50	<500	<500	<1000
Bromodichloromethane		<5	<50	<50	<100
1,1,2,2-Tetrachloroethane		<5	<50	<50	<100
1,2-Dichloropropane		<5	<50	<50	<100
trans-1,3-Dichloropropene		<5	<50	<50	<100
Trichloroethene		6.8	<50	<50	<100
Dibromochloromethane		<5	<50	<50	<100
1,1,2-Trichloroethane		<5	<50	<50	<100
Benzene		2600	1600	1900	1600
cis-1,3-Dichloropropene		<5	<50	<50	<100
2-Chloroethylvinylether		<50	<500	<500	<1000
Bromoform		<5	<50	<50	<100
2-Hexanone		<50	<500	<500	<1000
4-Methy-2-Pentanone		300	<500	<500	<1000
Tetrachlorethene		<5	<50	<50	<100
Toluene		4100	2500	2300	1700
Chlorobenzene		<5	<50	<50	<100
Ethylbenzene		7100	4000	5600	2100
Styrene		<5	<50	<50	<100
Total Xylenes		15000	9000	13000	10000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 30

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<5	<5
Bromomethane	<5	<5	<5	<5
Vinyl Chloride	<5	<5	<5	<5
Chloroethane	<5	<5	<5	<5
Methylene Chloride	<5	<5	<5	<5
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<10	<10
1,1,1-Trichlorethane	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<10	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	8.1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<10	<10
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<10	<10
4-Methy-2-Pentanone	<10	<10	<10	<10
Tetrachlorethene	<1	<1	<1	<1
Toluene	1.4	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	110	<1	<1	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 37

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<5	<2500	<2500
Bromomethane		<5	<2500	<2500
Vinyl Chloride		<5	<2500	<2500
Chloroethane		<5	<2500	<2500
Methylene Chloride		<5	<2500	<6200
Acetone		<250	<13000	<6200
Carbon Disulfide		<10	<500	<250
1,1-Dichloroethene		<10	<500	<250
1,1-Dichloroethane		<10	<500	<250
trans-1,2-Dichloroethene		<10	<500	<250
Chloroform		<10	<500	<250
1,2-Dichloroethane		<10	<500	<250
2-Butanone		<100	<5000	<2500
1,1,1-Trichlorethane		<10	<500	<250
Carbon Tetrachloride		<10	<500	<250
Vinyl Acetate		<100	<5000	<2500
Bromodichloromethane		<10	<500	<250
1,1,2,2-Tetrachloroethane		<10	<500	<250
1,2-Dichloropropane		<10	<500	<250
trans-1,3-Dichloropropene		<10	<500	<250
Trichloroethene		<10	<500	<250
Dibromochloromethane		<10	<500	<250
1,1,2-Trichloroethane		<10	<500	<250
Benzene		<10	<630	920
cis-1,3-Dichloropropene		<10	<500	<250
2-Chloroethylvinylether		<100	<5000	<250
Bromoform		<10	<500	<250
2-Hexanone		<100	<5000	<2500
4-Methy-2-Pentanone		<100	<5000	<2500
Tetrachlorethane		<10	<500	<250
Toluene		66	66000	61000
Chlorobenzene		<10	<500	<250
Ethylbenzene		<10	19000	17000
Styrene		<10	<500	<250
Total Xylenes		940	100000	80000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 38

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<100	<250	<100	<500
Bromomethane	<100	<250	<100	<500
Vinyl Chloride	<100	<250	<100	<500
Chloroethane	<100	<250	<100	<500
Methylene Chloride	<100	<250	<250	<1200
Acetone	<1000	<1200	<250	<1200
Carbon Disulfide	<20	<50	<50	<50
1,1-Dichloroethene	<20	<50	<50	<50
1,1-Dichloroethane	<20	<50	<50	<50
trans-1,2-Dichloroethene	<20	<50	<50	<50
Chloroform	<20	<50	<50	<50
1,2-Dichloroethane	<20	<50	<50	<50
2-Butanone	<200	<500	<250	<500
1,1,1-Trichlorethane	<20	<50	<50	<50
Carbon Tetrachloride	<20	<50	<50	<50
Vinyl Acetate	<200	<500	<100	<500
Bromodichloromethane	<20	<50	<50	<50
1,1,2,2-Tetrachloroethane	<20	<50	<50	<50
1,2-Dichloropropane	<20	<50	<50	<50
trans-1,3-Dichloropropene	<20	<50	<50	<50
Trichloroethene	<20	<50	<50	<50
Dibromochloromethane	<20	<50	<50	<50
1,1,2-Trichloroethane	<20	<50	<50	<50
Benzene	4200	3100	1400	2900
cis-1,3-Dichloropropene	<20	<50	<50	<50
2-Chloroethylvinylether	<200	<500	<100	<50
Bromoform	<20	<50	<50	<50
2-Hexanone	<200	<500	<100	<500
4-Methy-2-Pentanone	<200	<500	<100	<500
Tetrachlorethene	<20	<50	<50	<50
Toluene	1300	500	110	790
Chlorobenzene	<20	<50	<50	<50
Ethylbenzene	7500	3500	<50	3700
Styrene	<20	<50	<50	<50
Total Xylenes	14000	8200	3200	6000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 39

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane				<2	
Bromomethane				<2	
Vinyl Chloride				<2	
Chloroethane				<2	
Methylene Chloride				<25	
Acetone				<25	
Carbon Disulfide				<1	
1,1-Dichloroethene				<1	
1,1-Dichloroethane				<1	
trans-1,2-Dichloroethene				<1	
Chloroform				<1	
1,2-Dichloroethane				<1	
2-Butanone				<25	
1,1,1-Trichlorethane				<1	
Carbon Tetrachloride				<1	
Vinyl Acetate				<2	
Bromodichloromethane				<1	
1,1,2,2-Tetrachloroethane				<1	
1,2-Dichloropropane				<1	
trans-1,3-Dichloropropene				<1	
Trichloroethene				<1	
Dibromochloromethane				<1	
1,1,2-Trichloroethane				<1	
Benzene				<1	
cis-1,3-Dichloropropene				<1	
2-Chloroethylvinylether				<2	
Bromoform				<1	
2-Hexanone				<2	
4-Methyl-2-Pentanone				<2	
Tetrachlorethene				<1	
Toluene				<1	
Chlorobenzene				<1	
Ethylbenzene				<1	
Styrene				<1	
Total Xylenes				<1	

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 40

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	<5	<10
Bromomethane	<5	<5	<5	<10
Vinyl Chloride	<5	<5	<5	<10
Chloroethane	<5	<5	<5	<10
Methylene Chloride	<5	<5	<5	<25
Acetone	<50	<25	<25	<25
Carbon Disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
trans-1,2-Dichloroethene	72	<1	<1	<1
Chloroform	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1
2-Butanone	<10	<10	<10	<10
1,1,1-Trichlorethane	2	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1
Vinyl Acetate	<10	<10	<10	<10
Bromodichloromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
Trichloroethene	290	<1	<1	<1
Dibromochloromethane	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
2-Chloroethylvinylether	<10	<10	<10	<1
Bromoform	<1	<1	<1	<1
2-Hexanone	<10	<10	<10	<10
4-Methy-2-Pentanone	<10	<10	<10	<10
Tetrachloroethene	<1	<1	<1	<1
Toluene	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Total Xylenes	<1	<1	9.3	<1

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 41

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		<10	<5	DRY	DRY
Bromomethane		<10	<5		
Vinyl Chloride		<10	<5		
Chloroethane		<10	<5		
Methylene Chloride		<10	<5		
Acetone		<100	<25		
Carbon Disulfide		<2	<1		
1,1-Dichloroethene		<2	<1		
1,1-Dichloroethane		<2	<1		
trans-1,2-Dichloroethene		<2	<1		
Chloroform		<2	<1		
1,2-Dichloroethane		<2	<1		
2-Butanone		<20	<10		
1,1,1-Trichlorethane		<2	<1		
Carbon Tetrachloride		<2	<1		
Vinyl Acetate		<20	<10		
Bromodichloromethane		<2	<1		
1,1,2,2-Tetrachloroethane		<2	<1		
1,2-Dichloropropane		<2	<1		
trans-1,3-Dichloropropene		<2	<1		
Trichloroethene		<2	<1		
Dibromochloromethane		<2	<1		
1,1,2-Trichloroethane		<2	<1		
Benzene		<2	<1		
cis-1,3-Dichloropropene		<2	<1		
2-Chloroethylvinylether		<20	<10		
Bromoform		<2	<1		
2-Hexanone		<20	<10		
4-Methy-2-Pentanone		<20	<10		
Tetrachlorethane		<2	<1		
Toluene		<2	<1		
Chlorobenzene		<2	<1		
Ethylbenzene		<2	<1		
Styrene		<2	<1		
Total Xylenes		<2	<1		

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 42

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<50	<500	<250	<50
Bromomethane	<50	<500	<250	<50
Vinyl Chloride	440	<500	<250	<50
Chloroethane	<50	<500	<250	<50
Methylene Chloride	<50	<1000	<250	<50
Acetone	640	<2500	<1300	<250
Carbon Disulfide	<10	<100	<50	<10
1,1-Dichloroethene	<10	<100	<50	<10
1,1-Dichloroethane	<10	<100	<50	<10
trans-1,2-Dichloroethene	<10	<100	<50	<10
Chloroform	<10	<100	<50	<10
1,2-Dichloroethane	3.6	<100	<50	<10
2-Butanone	<100	<1000	<500	<100
1,1,1-Trichlorethane	<10	<100	<50	<10
Carbon Tetrachloride	<10	<100	<50	<10
Vinyl Acetate	<100	<1000	<500	<100
Bromodichloromethane	<10	<100	<50	<10
1,1,2,2-Tetrachloroethane	<10	<100	<50	<10
1,2-Dichloropropane	<10	<100	<50	<10
trans-1,3-Dichloropropene	<10	<100	<50	<10
Trichloroethene	<10	<100	<50	<10
Dibromochloromethane	<10	<100	<50	<10
1,1,2-Trichloroethane	<10	<100	<50	<10
Benzene	1000	1100	450	960
cis-1,3-Dichloropropene	<10	<100	<50	<10
2-Chloroethylvinylether	<100	<1000	<500	<100
Bromoform	<10	<100	<50	<10
2-Hexanone	<100	<1000	<500	<100
4-Methy-2-Pentanone	<100	<1000	<500	<100
Tetrachlorethene	<10	<100	<50	<10
Toluene	1100	3400	750	2200
Chlorobenzene	<10	<100	<50	<10
Ethylbenzene	<10	<100	<50	<10
Styrene	<10	<100	<50	<10
Total Xylenes	460	1900	1600	2500

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 43

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane			DRY	DRY	DRY
Bromomethane					
Vinyl Chloride					
Chloroethane					
Methylene Chloride					
Acetone					
Carbon Disulfide					
1,1-Dichloroethene					
1,1-Dichloroethane					
trans-1,2-Dichloroethene					
Chloroform					
1,2-Dichloroethane					
2-Butanone					
1,1,1-Trichlorethane					
Carbon Tetrachloride					
Vinyl Acetate					
Bromodichloromethane					
1,1,2,2-Tetrachloroethane					
1,2-Dichloropropane					
trans-1,3-Dichloropropene					
Trichloroethene					
Dibromochloromethane					
1,1,2-Trichloroethane					
Benzene					
cis-1,3-Dichloropropene					
2-Chloroethylvinylether					
Bromoform					
2-Hexanone					
4-Methyl-2-Pentanone					
Tetrachlorethene					
Toluene					
Chlorobenzene					
Ethylbenzene					
Styrene					
Total Xylenes					

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 44

<u>Compound</u>	<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
		<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane			DRY	DRY	DRY
Bromomethane					
Vinyl Chloride					
Chloroethane					
Methylene Chloride					
Acetone					
Carbon Disulfide					
1,1-Dichloroethene					
1,1-Dichloroethane					
trans-1,2-Dichloroethene					
Chloroform					
1,2-Dichloroethane					
2-Butanone					
1,1,1-Trichlorethane					
Carbon Tetrachloride					
Vinyl Acetate					
Bromodichloromethane					
1,1,2,2-Tetrachloroethane					
1,2-Dichloropropane					
trans-1,3-Dichloropropene					
Trichloroethene					
Dibromochloromethane					
1,1,2-Trichloroethane					
Benzene					
cis-1,3-Dichloropropene					
2-Chloroethylvinylether					
Bromoform					
2-Hexanone					
4-Methyl-2-Pentanone					
Tetrachlorethene					
Toluene					
Chlorobenzene					
Ethylbenzene					
Styrene					
Total Xylenes					

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 45

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		DRY	DRY	DRY
Bromomethane				
Vinyl Chloride				
Chloroethane				
Methylene Chloride				
Acetone				
Carbon Disulfide				
1,1-Dichloroethene				
1,1-Dichloroethane				
trans-1,2-Dichloroethene				
Chloroform				
1,2-Dichloroethane				
2-Butanone				
1,1,1-Trichlorethane				
Carbon Tetrachloride				
Vinyl Acetate				
Bromodichloromethane				
1,1,2,2-Tetrachloroethane				
1,2-Dichloropropane				
trans-1,3-Dichloropropene				
Trichloroethene				
Dibromochloromethane				
1,1,2-Trichloroethane				
Benzene				
cis-1,3-Dichloropropene				
2-Chloroethylvinylether				
Bromoform				
2-Hexanone				
4-Methy-2-Pentanone				
Tetrachlorethene				
Toluene				
Chlorobenzene				
Ethylbenzene				
Styrene				
Total Xylenes				

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 46

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<5	<5	DRY	DRY
Bromomethane	<5	<5		
Vinyl Chloride	<5	<5		
Chloroethane	<5	<5		
Methylene Chloride	<5	<5		
Acetone	<50	<25		
Carbon Disulfide	<1	<1		
1,1-Dichloroethene	<1	<1		
1,1-Dichloroethane	<1	<1		
trans-1,2-Dichloroethene	<1	<1		
Chloroform	<1	<1		
1,2-Dichloroethane	<1	<1		
2-Butanone	<10	<10		
1,1,1-Trichlorethane	<1	<1		
Carbon Tetrachloride	<1	<1		
Vinyl Acetate	<10	<10		
Bromodichloromethane	<1	<1		
1,1,2,2-Tetrachloroethane	<1	<1		
1,2-Dichloropropane	<1	<1		
trans-1,3-Dichloropropene	<1	<1		
Trichloroethene	<1	<1		
Dibromochloromethane	<1	<1		
1,1,2-Trichloroethane	<1	<1		
Benzene	<1	<1		
cis-1,3-Dichloropropene	<1	<1		
2-Chloroethylvinylether	<10	<10		
Bromoform	<1	<1		
2-Hexanone	<10	<10		
4-Methyl-2-Pentanone	<10	<10		
Tetrachlorethane	<1	<1		
Toluene	<1	<1		
Chlorobenzene	<1	<1		
Ethylbenzene	<1	<1		
Styrene	<1	<1		
Total Xylenes	<1	<1		

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 47

Sampling Date	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
Compound	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane	<1000	<500	<5000	<500000
Bromomethane	<1000	<500	<5000	<500000
Vinyl Chloride	<1000	<500	<5000	<500000
Chloroethane	<1000	<500	<5000	<500000
Methylene Chloride	<1000	<500	<5000	<500000
Acetone	<10000	<5000	<25000	<2500000
Carbon Disulfide	<200	<100	<1000	<100000
1,1-Dichloroethene	<200	<100	<1000	<100000
1,1-Dichloroethane	<200	<100	<1000	<100000
trans-1,2-Dichloroethene	<200	<200	<1000	<100000
Chloroform	<200	<100	<1000	<100000
1,2-Dichloroethane	<200	<100	<1000	<100000
2-Butanone	<2000	<1000	<10000	<1000000
1,1,1-Trichlorethane	<200	<100	<1000	<100000
Carbon Tetrachloride	<200	<100	<1000	<100000
Vinyl Acetate	<2000	<1000	<10000	<1000000
Bromodichloromethane	<200	<100	<1000	<100000
1,1,2,2-Tetrachloroethane	<200	<100	<1000	<100000
1,2-Dichloropropane	<200	<100	<1000	<100000
trans-1,3-Dichloropropene	<200	<100	<1000	<100000
Trichloroethene	<200	<100	<1000	<100000
Dibromochloromethane	<200	<100	<1000	<100000
1,1,2-Trichloroethane	<200	<100	<1000	<100000
Benzene	<200	300	<1000	<100000
cis-1,3-Dichloropropene	<200	<100	<1000	<100000
2-Chloroethylvinylether	<2000	<1000	<10000	<1000000
Bromoform	<200	<100	<1000	<100000
2-Hexanone	<2000	<1000	<1000	<1000000
4-Methy-2-Pentanone	<2000	<1000	<10000	<1000000
Tetrachlorethene	<200	<100	<10000	<100000
Toluene	4400	15000	13000	1500000
Chlorobenzene	<200	<100	<1000	<100000
Ethylbenzene	21000	24000	16000	3600000
Styrene	<200	<100	<1000	<100000
Total Xylenes	80000	160000	120000	18000000

HATCHER-SAYRE, INC.

ANNUAL SUMMARY OF QUARTERLY SAMPLING

WELL I.D. 48

<u>Sampling Date</u>	<u>12/87</u>	<u>4/88</u>	<u>7/88</u>	<u>10/88</u>
<u>Compound</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Chloromethane		DRY	DRY	DRY
Bromomethane				
Vinyl Chloride				
Chloroethane				
Methylene Chloride				
Acetone				
Carbon Disulfide				
1,1-Dichloroethene				
1,1-Dichloroethane				
trans-1,2-Dichloroethene				
Chloroform				
1,2-Dichloroethane				
2-Butanone				
1,1,1-Trichlorethane				
Carbon Tetrachloride				
Vinyl Acetate				
Bromodichloromethane				
1,1,2,2-Tetrachloroethane				
1,2-Dichloropropane				
trans-1,3-Dichloropropene				
Trichloroethene				
Dibromochloromethane				
1,1,2-Trichloroethane				
Benzene				
cis-1,3-Dichloropropene				
2-Chloroethylvinylether				
Bromoform				
2-Hexanone				
4-Methy-2-Pentanone				
Tetrachlorethene				
Toluene				
Chlorobenzene				
Ethylbenzene				
Styrene				
Total Xylenes				

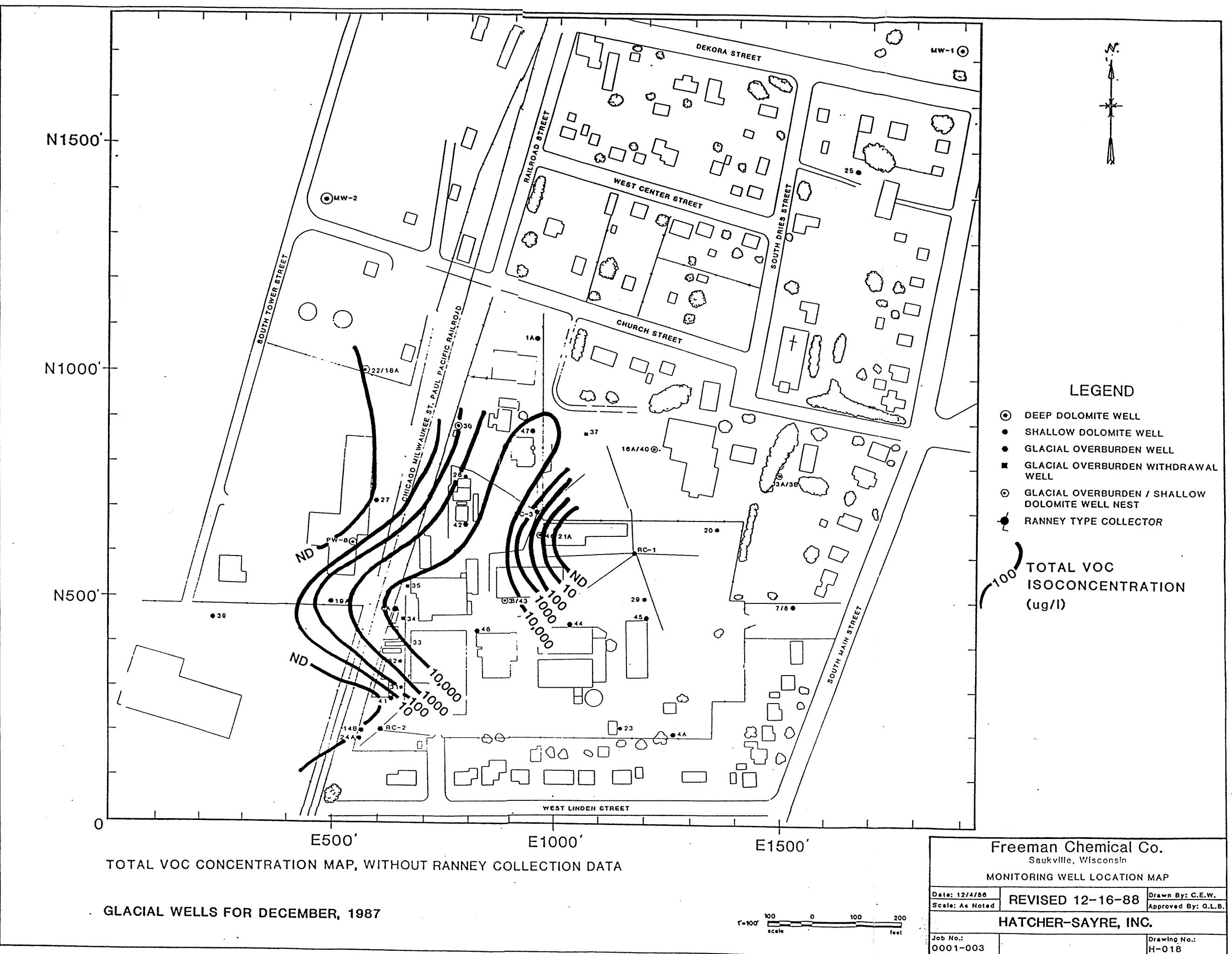
APPENDIX C
TOTAL VOC CONCENTRATION MAPS

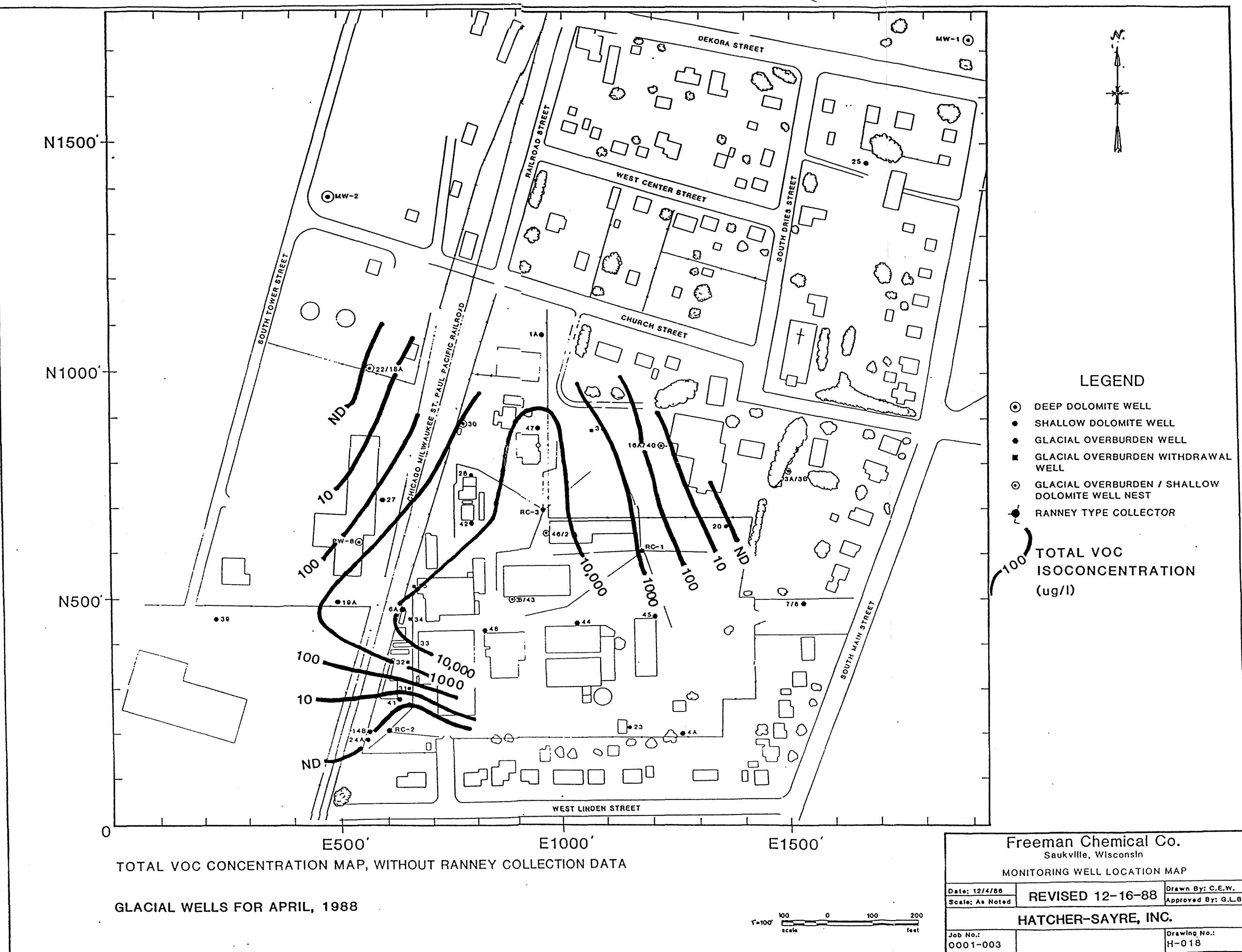
Glacial Wells Without Ranney Collection Data

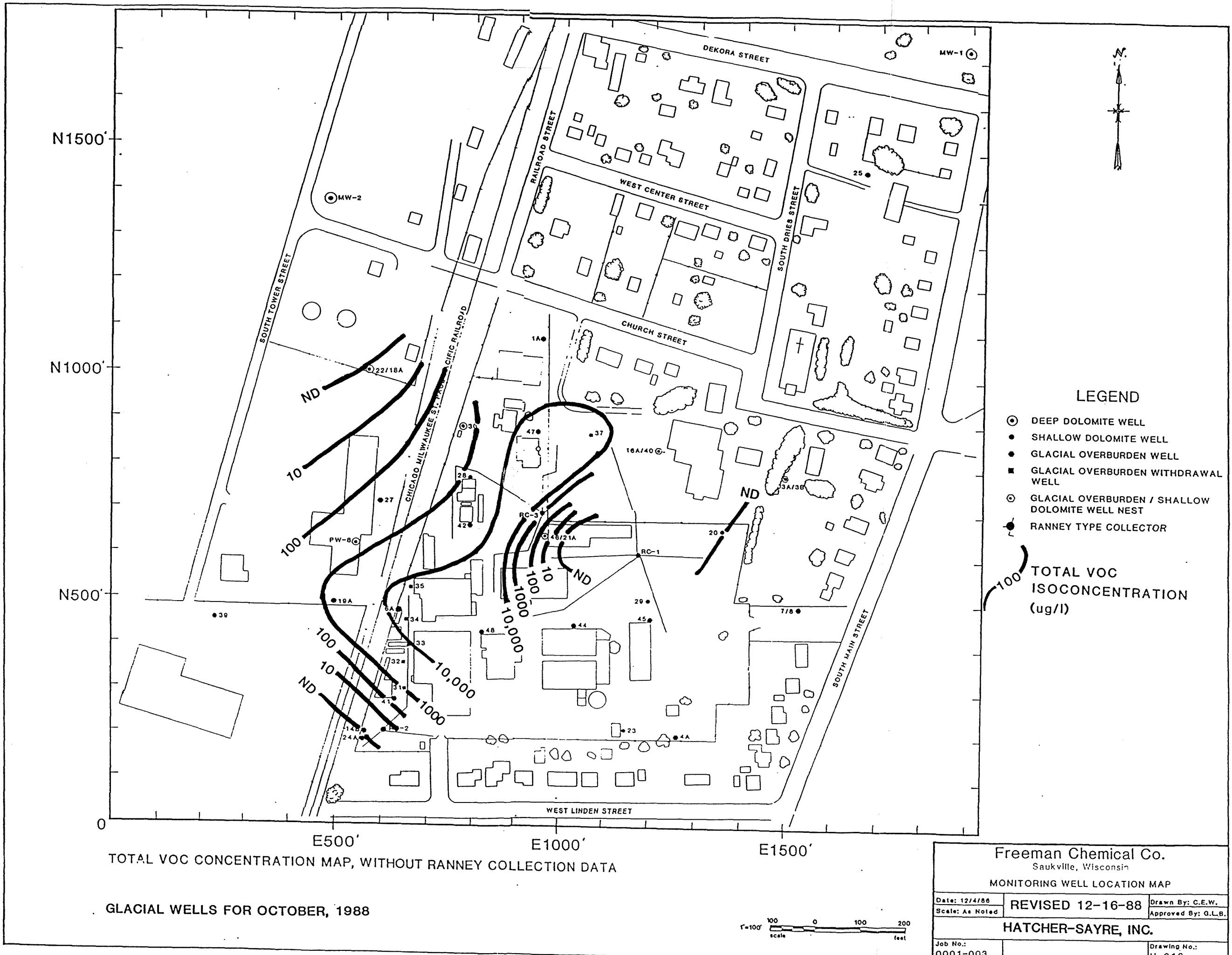
- 1) December, 1987
- 2) April, 1988
- 3) July, 1988
- 4) October, 1988

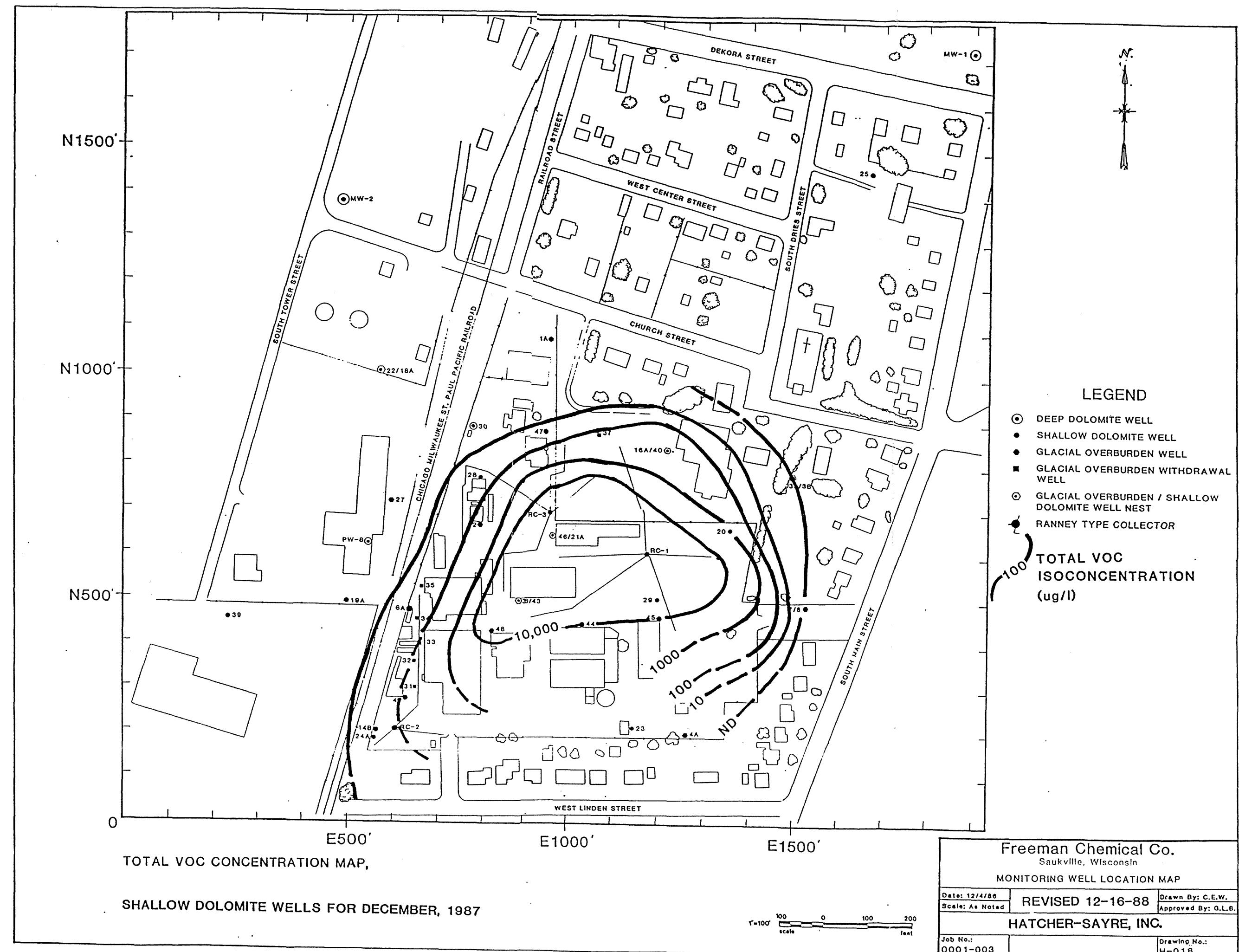
Shallow Dolomite Wells

- 1) December, 1987
- 2) April, 1988
- 3) July, 1988
- 4) October, 1988









N1500'

N1000'

N500'

0

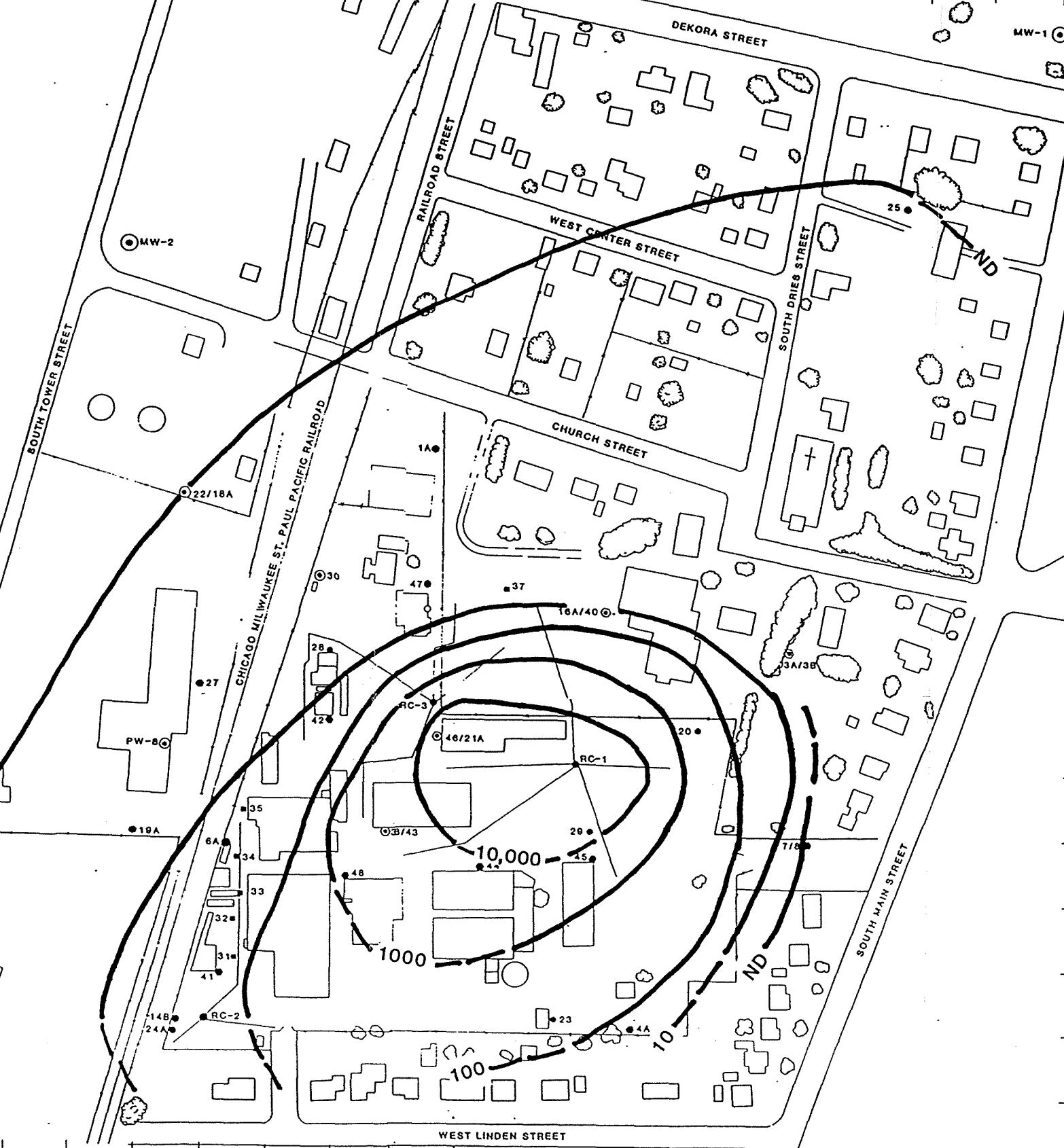
E500'

E1000'

E1500'

TOTAL VOC CONCENTRATION MAP,

SHALLOW DOLOMITE WELLS FOR JULY, 1988 (ANNUAL)



LEGEND

- (○) DEEP DOLOMITE WELL
- (●) SHALLOW DOLOMITE WELL
- (◆) GLACIAL OVERTURDEN WELL
- (■) GLACIAL OVERTURDEN WITHDRAWAL WELL
- (◎) GLACIAL OVERTURDEN / SHALLOW DOLOMITE WELL NEST
- (●) RANNEY TYPE COLLECTOR

100
1000
10,000
TOTAL VOC
ISOCONCENTRATION
(ug/l)

Freeman Chemical Co.
Saukville, Wisconsin

MONITORING WELL LOCATION MAP

Date: 12/4/86	REvised 12-16-88	Drawn By: C.E.W.
Scale: As Noted		Approved By: G.L.B.
HATCHER-SAYRE, INC.		
Job No.: 0001-003		Drawing No.: H-018

100 0 100 200
scale feet

