THE SIGMA GROUP
SIGMA ENVIRONMENTAL SERVICES, INC.
SIGMA DEVELOPMENT, INC.
SIGMA LEASING, INC.

1300 West Canal Street
Milwaukee, WI 53233
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LETTER OF TRANSMITTAL

To: **Mr. Andrew F. Boettcher**
Remediation and Redevelopment Team
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Drive
P. O. Box 12436
Milwaukee, WI 53121-0436

Date: 01-07-04 **Project Number:** 3125

RE: Good Hope Road Landfill

We are sending you the following items:

☑ Prints ☐ Plans ☐ Report
☐ Specifications ☐ Copy of letter ☐ Change order ☐ Other

COPIES	ENCLOSED	UNDER SEPARATE COVER	DESCRIPTION
1	1		Revised Figures 5, 6, 7, 8, and 9.

These are transmitted as checked below:

☐ For approval
☑ For you use
☐ As requested
☐ For review and comment
☐ No exceptions taken
☐ Make corrections noted
☐ Rejected; resubmit as noted
☐ For Bids due _____
☑ Resubmit 1 copy for review
☐ Submit ____ copies for distribution
☐ Return ____ corrected prints
☐ Prints returned after loan to us

Notes / Comments:

Andy,
Attached please find revised Figures 5 through 9. Per your comments, we have revised these figures to incorporate correct dates of sampling (12/07/00 instead of 12/07/03 for well nests MW-8/PZ-8, MW-9/PZ-9, MW-10/PZ-10, 10/02/03 instead of 12/02/03 for well nest MW-11/PZ-11, and 06/27/02 instead of 07/0796 for Piezometer MPS:P-5). There is no change in contaminant concentration data or isoconcentration plots. Please feel free to give me a call if you have any questions.

Thanks,

Signed: _____
MAFIZUL ISLAM

Copy (w/ attachment) to: Dennis L. Fisher

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December 8, 2003

Project #3125

Mr. Andrew F. Boettcher
Remediation and Redevelopment Team
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Drive
P. O. Box 12436
Milwaukee, WI 53121-0436

RE.: Results of Additional Groundwater Sampling and Water Supply Well Survey, South of the former Good Hope Road Landfill Site, Milwaukee, Wisconsin

Dear Mr. Boettcher:

Sigma Environmental Services, Inc. (Sigma), on behalf of the Village of Whitefish Bay, has completed additional data collection and evaluation activities, including survey of water supply wells and development of groundwater isoconcentration maps as requested by the WDNR for the above-referenced project. The purpose of the additional activities was to evaluate the groundwater quality conditions beneath the residential subdivision, evaluate on-going biodegradation in the subsurface and determine potential receptors downgradient of the landfill site. A summary of the activities and results of the evaluation are presented below.

Groundwater Conditions

Four groundwater samples were collected from two well nests (MPS:P-6/P-7 and MW-11/PZ-11) on October 2, 2003 and submitted to the project laboratory for analysis of volatile organic compounds (VOCs) and natural attenuation parameters (methane, ethane and ethene). On October 23, 2003 a verification sample was collected from piezometer PZ-11 to confirm the detection of benzene in groundwater at this location. In addition, water levels and field parameters such as dissolved oxygen, redox, dissolved iron, temperature and pH were collected at each sampling point. Attached Tables 1 through 3 present a summary of the water level data, bio-parameters and laboratory analytical data collected from these locations. Laboratory analytical reports are included as Appendix A.

A review of the data indicates no chlorinated VOCs were detected in monitoring well nest MW-11/PZ-11 located in the residential subdivision south of the school property and approximately 2,400 feet south of the landfill. Only one petroleum compound (benzene) was detected in deep piezometer PZ-11 at a concentration exceeding the groundwater enforcement standard. A second sample collected from this location on October 23, 2003 confirmed the presence of benzene in groundwater.

In contrast, two chlorinated VOCs (cis-1,2-DCE and vinyl chloride) were detected in groundwater samples collected from well nest MPS:P-6/P-7 located immediately upgradient of the residential subdivision; however, no benzene was detected at these upgradient locations. It is important to note that the concentrations of the detected compounds decreased substantially at deep piezometer MPS:P-7, whereas concentrations increased in shallow monitoring well MPS:P-6. Both of the detected

CVOCs are breakdown products of the parent compounds (PCE and TCE) detected at the source areas within the former landfill and the Presidio Square Apartments Complex properties, indicating on-going biodegradation of the chlorinated VOCs in the groundwater. This conclusion can be further supported by the concentration trends observed at these locations for the biodegradation parameters monitored for both well nests. An increase in the concentrations of biodegradation byproducts (ethane, ethane and methane) in shallow monitoring well MPS:P-6 correlated well with the increase in concentration of the chlorinated compounds 1,2-DCE and vinyl chloride at this location. Similarly, the reduction in CVOCs detected in MPS:P-7 correlates well with the reduction of byproducts detected at this location. In addition, subsurface groundwater conditions appear to be anaerobic as indicated by the low dissolved oxygen concentration (less than 1 ppm) and low redox potential (less than 50 mV), which is a suitable condition for biodegradation of the detected CVOCs in groundwater.

Although a petroleum compound (benzene) was detected at piezometer PZ-11, the downgradient plume of 1,2-cis-DCE and vinyl chloride appears to dissipate between Green Tree Road and Hassel Lane. The recently completed sampling activities at the residential subdivision supports the conclusion that the chlorinated VOCs plume originated from the source areas located at the former landfill and the Presidio Square Apartments Complex properties has been defined.

Compound Specific Isoconcentration Maps

Per the WDNR request compound specific isoconcentration maps were generated using the existing database for the three groundwater flow systems (shallow, middle depth and deep) identified during site investigations and presented in the attached Figures 1 through 9. When a chlorinated compound is no longer detected in the monitoring well network, a corresponding contour map was not developed for that compound. For example, both PCE and TCE are not present in the deep groundwater system as represented by the groundwater quality data collected from the network of deep piezometers and therefore, no contour plots were generated for these compounds within the deep flow system.

Please note that the groundwater quality data used for the generation of the contour plots were collected over a period of several years and not all the data are current. As such, contour plots are based on the most recent data collected from each location. Although some old data from the source area wells were incorporated in developing these plots, the overall contaminant distribution depicted by these isoconcentration maps closely represents the groundwater conditions beneath the school and the residential subdivision considering the availability of current data from these locations. Based on a review of the isoconcentration plots the following conclusion can be made:

- No parent compounds (PCE or TCE) are present at depth or at downgradient locations immediately south of the of the source areas.
- Breakdown products (cis-1,2-DCE and vinyl chloride) of the parent compounds are present in all three groundwater flow systems.
- Concentrations of the detected breakdown products decrease substantially with the increasing distance from the sources (both vertical and lateral direction).
- No CVOCs were detected in groundwater beneath the subdivision area.

Groundwater Production Well Survey

Per WDNR's request a record search was completed to locate any active groundwater production wells in the downgradient vicinity of the site. Specifically, a search for large capacity production wells as well as residential supply wells located within one-mile radius in the downgradient direction of the landfill site (area bounded by Green Tree Road to the north, 58th. Street to the west, 43rd. Street to the east, and Mill Road to the south) was completed. The search consisted of the review of a publicly available information database which included well construction logs from the Wisconsin Geological and Natural History Survey, well abandonment forms from the WNDR central database, and well operation permits from the City of Milwaukee's Department of Neighborhood Services. Attached Figure 10 and Table 4 present the results of the search.

Based on the information reviewed, a total of 133 water supply well logs were identified within the search area (132 logs for residential supply wells and one for non-potable well located at the Graceland Cemetery). Only 46 of the residential wells were found to be abandoned based on the WDNR well abandonment forms. Although no well abandonment logs were found for the remaining 85 wells, a review of the City of Milwaukee's well operation permits do not indicate any of these wells are being used for non-potable purposes. However, according to the WDNR database three private supply wells were documented as in use for non-potable purposes. To conclusively determine the status of remainder of the 82 wells, a door-to-door survey may be implemented, which was beyond the scope of this study. Only the production well (located in the southern portion of the Graceland Cemetery) was found to be in operation based on Sigma field observations made during the 2001 investigation activities. A well construction log for the production well is included as Appendix B.

Please feel free to give me a call at (414) 643-4125 should you have any questions or would like to discuss the findings presented here.

Sincerely,

SIGMA ENVIRONMENTAL SERVICES, INC.

Mafizul Islam, P.E.
Senior Project Engineer

/attachments

cc: Dennis L. Fisher / Meissner Tierney, et. al.

TABLES

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
MPS: P-6	693.22	19.9	5.0	678.32	9.75	683.47	02/13/99
	693.30				11.50	681.80	12/07/00
					11.79	681.51	01/12/01
	693.32	19.9	5.0	678.47	10.44	682.88	06/26/02
					14.00	679.32	10/02/03
MPS: P-7	693.04	41.9	5.0	656.14	10.97	682.07	12/07/00
					11.20	681.84	01/12/01
					10.21	682.83	06/26/02
					15.36	677.68	10/02/03
PZ-11	691.46	48.5	5.0	648.01	8.63	682.83	06/26/02
					12.24	679.22	10/02/03
MW-11	691.68	17.7	15.0	688.98	8.84	682.84	06/26/02
					12.46	679.22	10/02/03

Notes:
1. Top of casing elevations for MPS MW-1 through MPS P-6 from Natural Resource Technology report (4/16/99). Top of casing elevations for MPS P-6 through MW-10 surveyed by Northshore Engineering on December 12, 2000 (MPS P-6 re-surveyed).
2. Depth of well measured from top of casing.
3. NM-Water level not measured.

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

MPS P-6 Screened Interval: 15.5 to 20.5 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
02/13/99	<2.7	NA	4.7	<4.3	**850**	<7.9	<3.2	<3.6	<3.5	<4.3	<2.7	<3.0	<3.7	**810**
12/07/00	<0.10	NA	3.2	<0.25	**670**	3.6	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	**530**
06/27/02	<2.2	<2.8	<2.9	<2.9	**290**	<3.0	<2.5	<3.0	<7.0	<2.5	<3.2	<2.9	<3.7	**290**
10/02/03	<4.1	<4.9	<7.5	<5.7	**1000**	<8.9	<5.4	<4.3	<7.4	<4.5	<6.7	<9.0	<4.5	**880**

MPS P-7 Screened Interval: 45 to 50 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	**33**	<0.25	<0.25	<0.25	0.36	<0.25	0.63	<0.25	<0.25	**1,400**
06/27/02	<2.2	<2.8	<2.9	<2.9	**15**	<3.0	<2.5	<3.0	<7.0	<2.5	<3.2	<2.9	<3.7	**360**
10/02/03	<0.41	<0.49	<0.75	<0.57	**1.2 / 1.2 ***	<0.89	<0.54	<0.43	<0.74	<0.45	<0.67	<0.90	<0.48	**64 / 73 ***

PZ-11 Screened Interval: 44 to 49 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/02	<0.43	<0.56	<0.57	<0.57	<0.53	<0.59	<0.49	<0.6	<1.4	<0.49	<0.63	<0.57	<0.73	<0.12
10/02/03	**8.9**	<0.49	<0.75	<0.57	<0.83	<0.89	<0.54	<0.43	<0.74	<0.45	<0.67	<0.90	<0.48	<0.18

MW-11 Screened Interval: 5 to 20 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/02	<0.43	<0.56	<0.57	<0.57	<0.53	<0.59	<0.49	<0.6	<1.4	<0.49	<0.63	<0.57	<0.73	<0.12
10/02/03	<0.41	<0.49	<0.75	<0.57	<0.83	<0.89	<0.54	<0.43	<0.74	<0.45	<0.67	<0.90	<0.48	<0.18

Notes:

1. NR 140 ES = Wis. Adm. Code Chapter NR 140 Enforcement Standard
2. NR 140 PAL = Wis. Adm. Code Chapter NR 140 Preventive Action Limit
3. Abbreviations:

ND = Not Detected
NS = Not Sampled
1,1-DCA = 1,1-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloethene
trans-1,2-DCE = trans-1,2-Dichloethene
TCE = Trichlorethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichlorethane

6. ES Exceedances: **BOLD** PAL Exceedances: **BOLD**

* Second value represents duplicate sample result.

Table 3
Groundwater Biodegradation Parameters
Former Good Hope Road Landfill Site and the vicinity
Sigma Project No. 3125

MPS P-6	Biodegradation Parameters							
DATE	Ethene (ng/L)	Ethane (ng/L)	Methane (ng/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.43	38.9	7	0	14.2
06/27/02	520	4400	4400	0.47	110.6	7	0	15.2
10/02/03	8300	1000	38000	0.28	67.6	7	0	15

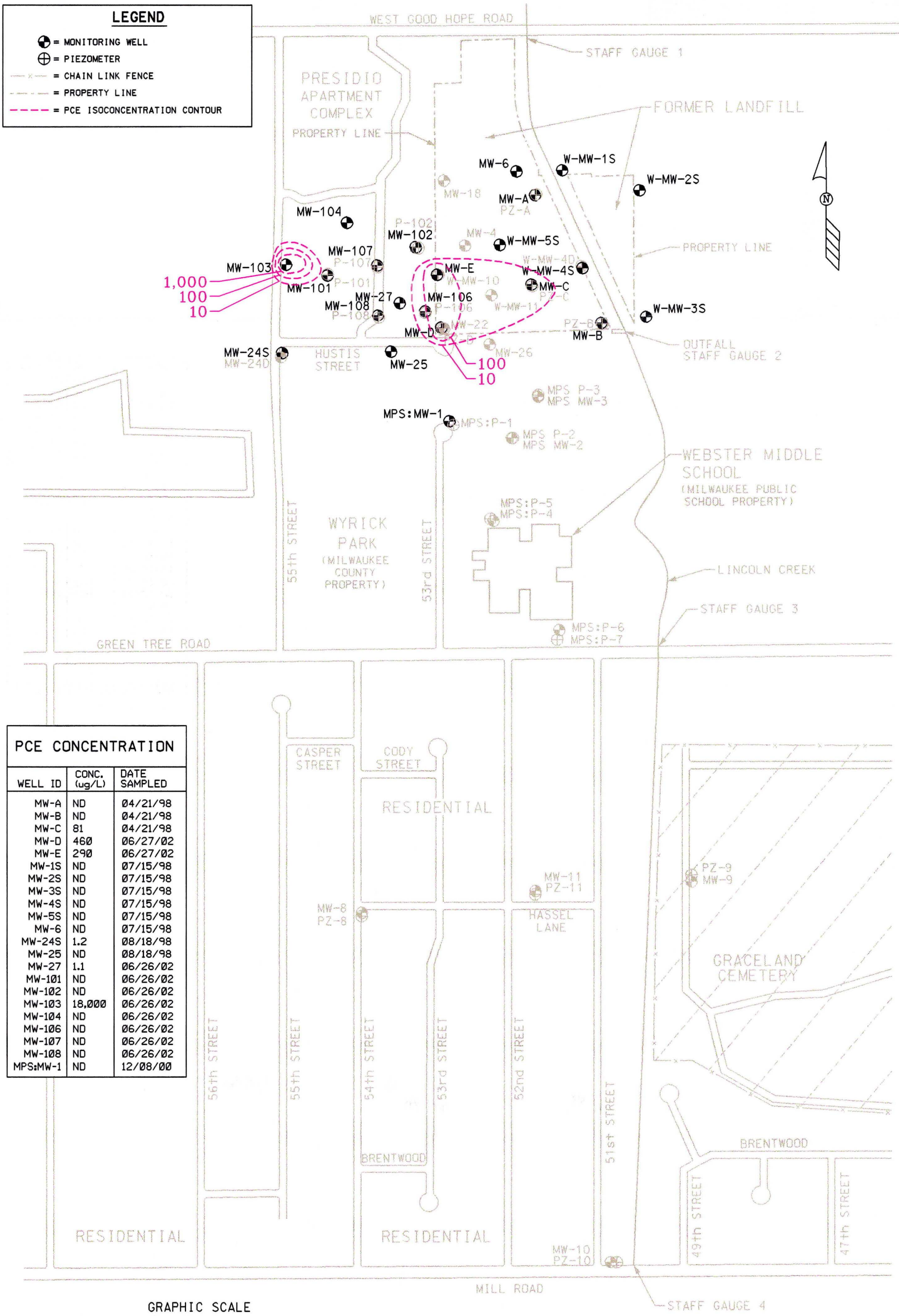
MPS P-7	Biodegradation Parameters							
DATE	Ethene (ng/L)	Ethane (ng/L)	Methane (ng/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.32	-43.7	7	0	13.5
06/27/02	6600	260000	550000	0.44	96.7	11	0	13.9
10/02/03	7200	490	10000	0.27	55.3	7	0	14.4

PZ-11	Biodegradation Parameters							
DATE	Ethene (ng/L)	Ethane (ng/L)	Methane (ng/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	510	900	6800	0.37	192.7	7	0	13.8
10/02/03	430	260	700	0.16	-173.4	7	3.2	12.5

MW-11	Biodegradation Parameters							
DATE	Ethene (ng/L)	Ethane (ng/L)	Methane (ng/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	560	110	16000	0.45	160.5	7	0	15.2
10/02/03	19	360	1300	0.24	-32.6	7	0.8	14.5

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = PCE ISOCONCENTRATION CONTOUR



PCE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-A	ND	04/21/98
MW-B	ND	04/21/98
MW-C	81	04/21/98
MW-D	460	06/27/02
MW-E	290	06/27/02
MW-1S	ND	07/15/98
MW-2S	ND	07/15/98
MW-3S	ND	07/15/98
MW-4S	ND	07/15/98
MW-5S	ND	07/15/98
MW-6	ND	07/15/98
MW-24S	1.2	08/18/98
MW-25	ND	08/18/98
MW-27	1.1	06/26/02
MW-101	ND	06/26/02
MW-102	ND	06/26/02
MW-103	18,000	06/26/02
MW-104	ND	06/26/02
MW-106	ND	06/26/02
MW-107	ND	06/26/02
MW-108	ND	06/26/02
MPS:MW-1	ND	12/08/00

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

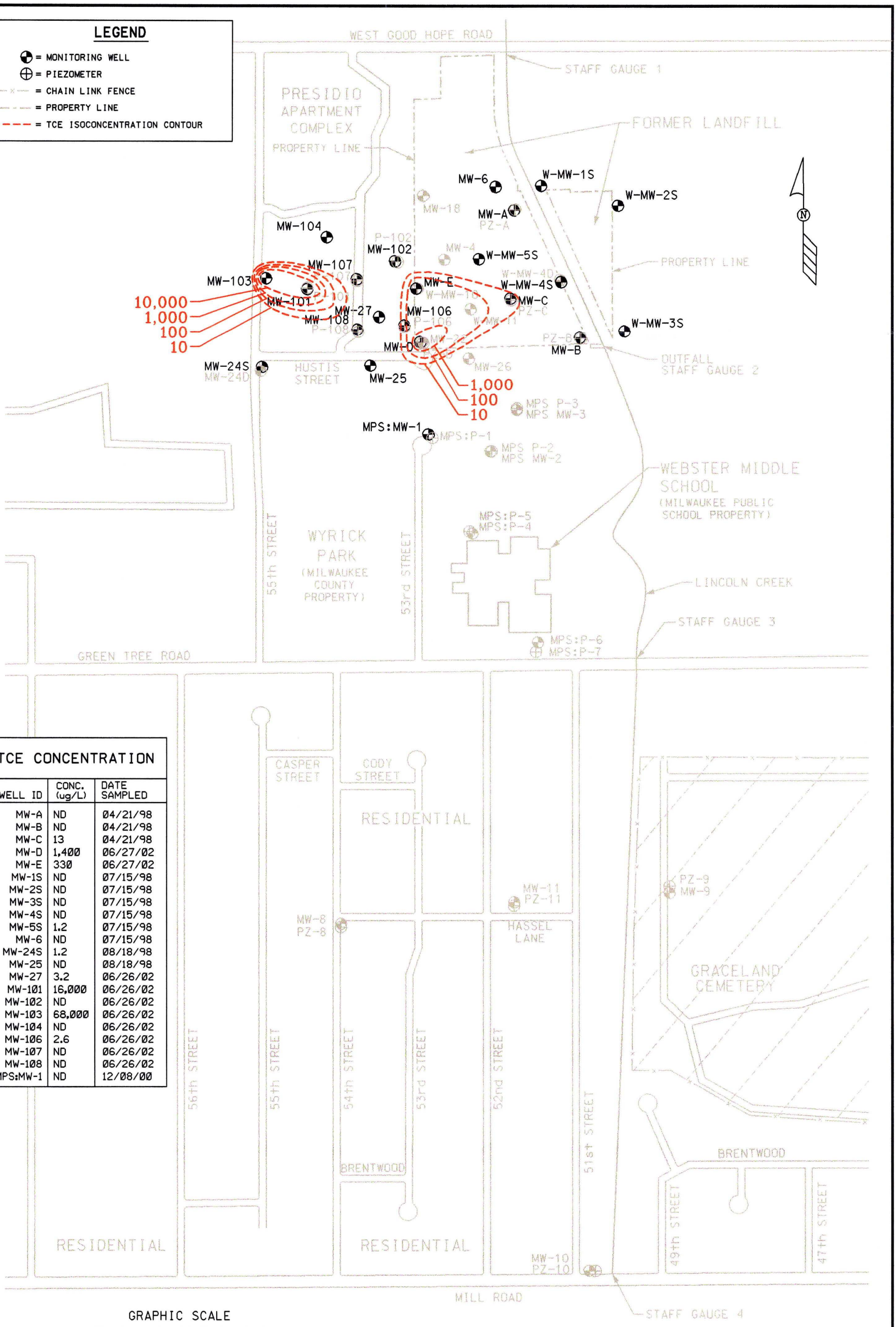
DATE: 10-24-03	DR. BY: BEB	DR.# 3125-069	SCALE: 1" = 400'

DISTRIBUTION OF PCE IN SHALLOW GROUNDWATER

FIGURE 1

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = TCE ISOCONCENTRATION CONTOUR



TCE CONCENTRATION

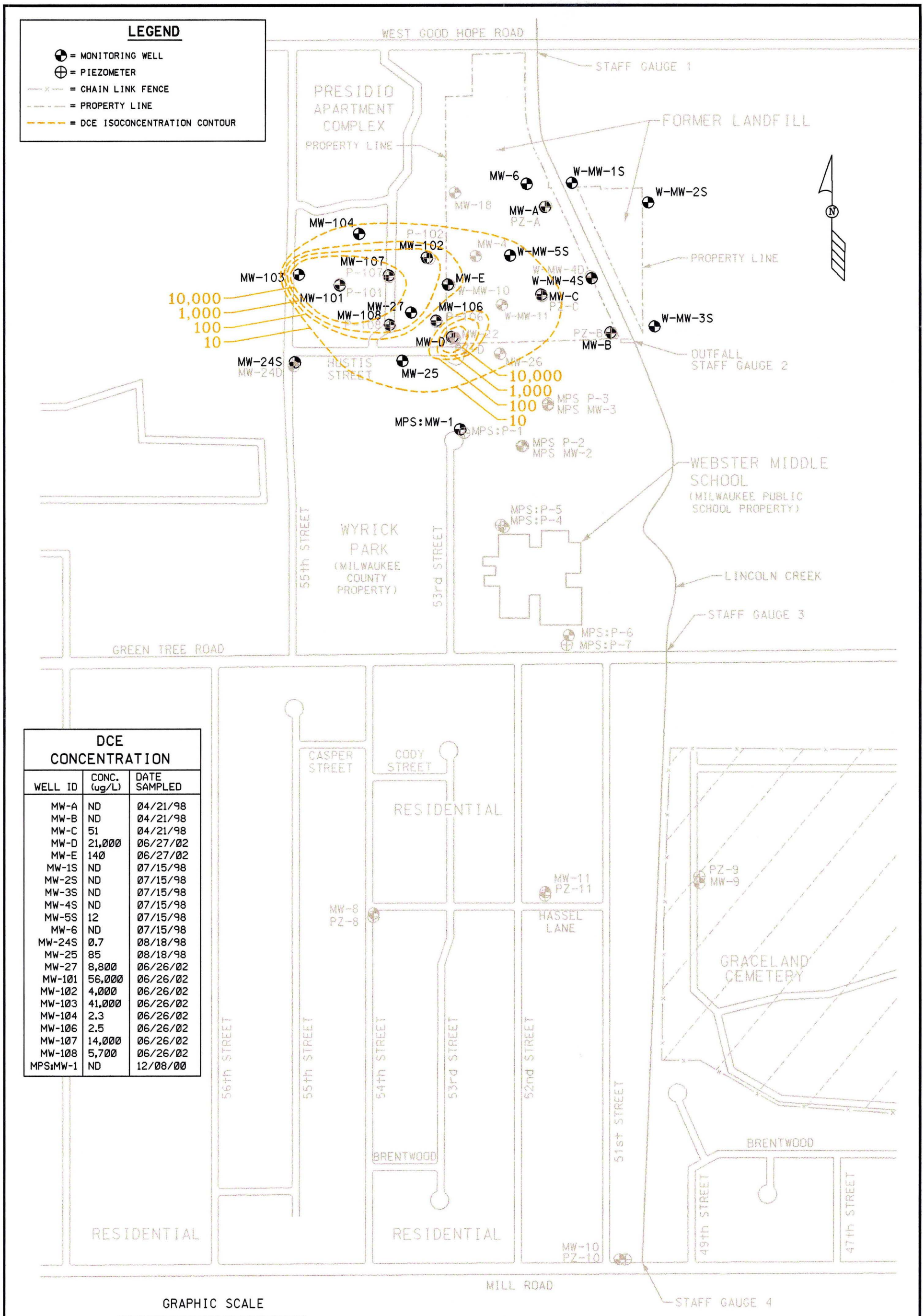
WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-A	ND	04/21/98
MW-B	ND	04/21/98
MW-C	13	04/21/98
MW-D	1,400	06/27/02
MW-E	330	06/27/02
MW-1S	ND	07/15/98
MW-2S	ND	07/15/98
MW-3S	ND	07/15/98
MW-4S	ND	07/15/98
MW-5S	1.2	07/15/98
MW-6	ND	07/15/98
MW-24S	1.2	08/18/98
MW-25	ND	08/18/98
MW-27	3.2	06/26/02
MW-101	16,000	06/26/02
MW-102	ND	06/26/02
MW-103	68,000	06/26/02
MW-104	ND	06/26/02
MW-106	2.6	06/26/02
MW-107	ND	06/26/02
MW-108	ND	06/26/02
MPS:MW-1	ND	12/08/00

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 10-24-03	DR. BY: BEB	DR.# 3125-070	SCALE: 1" = 400'
DISTRIBUTION OF TCE IN SHALLOW GROUNDWATER			FIGURE 2



DCE CONCENTRATION		
WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-A	ND	04/21/98
MW-B	ND	04/21/98
MW-C	51	04/21/98
MW-D	21,000	06/27/02
MW-E	140	06/27/02
MW-1S	ND	07/15/98
MW-2S	ND	07/15/98
MW-3S	ND	07/15/98
MW-4S	ND	07/15/98
MW-5S	12	07/15/98
MW-6	ND	07/15/98
MW-24S	0.7	08/18/98
MW-25	85	08/18/98
MW-27	8,800	06/26/02
MW-101	56,000	06/26/02
MW-102	4,000	06/26/02
MW-103	41,000	06/26/02
MW-104	2.3	06/26/02
MW-106	2.5	06/26/02
MW-107	14,000	06/26/02
MW-108	5,700	06/26/02
MPS:MW-1	ND	12/08/00

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-071	SCALE: 1" = 400'

DISTRIBUTION OF DCE IN SHALLOW GROUNDWATER

FIGURE 3

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = VINYL CHLORIDE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD

STAFF GAUGE 1

PRESIDIO APARTMENT COMPLEX PROPERTY LINE

FORMER LANDFILL

PROPERTY LINE

OUTFALL STAFF GAUGE 2

STAFF GAUGE 3

STAFF GAUGE 4

LINCOLN CREEK

WEBSTER MIDDLE SCHOOL (MILWAUKEE PUBLIC SCHOOL PROPERTY)

WYRICK PARK (MILWAUKEE COUNTY PROPERTY)

GREEN TREE ROAD

MILL ROAD

RESIDENTIAL

GRACELAND CEMETERY

BRENTWOOD

CASPER STREET

CODY STREET

HASSEL LANE

HUSTIS STREET

55th STREET

53rd STREET

56th STREET

54th STREET

52nd STREET

51st STREET

49th STREET

47th STREET

MW-6, MW-A, PZ-A, W-MW-1S, W-MW-2S, MW-104, P-102, MW-102, MW-4, W-MW-5S, MW-107, P-107, W-MW-4D, MW-103, MW-E, W-MW-4S, P-101, MW-101, W-MW-10, MW-C, PZ-C, MW-27, MW-106, P-106, W-MW-11, W-MW-3S, MW-108, P-108, MW-22, PZ-B, MW-B, MW-D, P-D, MW-24S, MW-24D, MW-25, MW-26, 1,000, 100, 10, 1

MPS:MW-1, MPS:P-1, MPS P-3, MPS MW-3, MPS P-2, MPS MW-2, MPS:P-5, MPS:P-4, MPS:P-6, MPS:P-7, MW-11, PZ-11, MW-8, PZ-8, PZ-9, MW-9, MW-10, PZ-10

GRAPHIC SCALE

0 200 400 800

VINYL CHLORIDE CONCENTRATION		
WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-A	ND	04/21/98
MW-B	ND	04/21/98
MW-C	3.1	04/21/98
MW-D	280	06/27/02
MW-E	ND	06/27/02
MW-1S	ND	07/15/98
MW-2S	ND	07/15/98
MW-3S	ND	07/15/98
MW-4S	ND	07/15/98
MW-5S	43	07/15/98
MW-6	1.3	07/15/98
MW-24S	ND	08/18/98
MW-25	16	08/18/98
MW-27	3,900	06/26/02
MW-101	1,300	06/26/02
MW-102	2,800	06/26/02
MW-103	2,900	06/26/02
MW-104	19	06/26/02
MW-106	ND	06/26/02
MW-107	2,100	06/26/02
MW-108	2,800	06/26/02
MPS:MW-1	ND	12/08/00

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-072	SCALE: 1" = 400'

DISTRIBUTION OF VINYL CHLORIDE IN SHALLOW GROUNDWATER

FIGURE 4

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = TCE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
PROPERTY LINE
MW-107
P-107
W-MW-4D
MW-103
W-MW-4S
P-101
W-MW-10
MW-C
PZ-C
MW-27
MW-106
W-MW-11
MW-108
P-108
P-106
W-MW-3S
MW-22
PZ-B
PZ-D
MW-B
OUTFALL STAFF GAUGE 2
MW-24S
MW-24D
HUSTIS STREET
MW-25
MW-26
1,000
100
10
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
55th STREET
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
53rd STREET
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
49th STREET
47th STREET
BRENTWOOD
BRENTWOOD
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

TCE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-8	ND	12/07/03
MW-9	ND	12/07/03
MW-10	ND	12/07/03
MW-11	ND	12/07/03
MW-24D	5.4	08/18/98
MW-26	ND	06/27/02
W-MW-4D	ND	07/15/98
W-MW-10	ND	06/27/02
W-MW-11	3,900	06/27/02
MPS:P-1	ND	12/08/00
MPS:P-2	ND	06/27/02
MPS:P-3	ND	06/27/02
MPS:P-4	ND	06/27/02
MPS:P-6	ND	10/02/03
P-101	7.4	06/26/02
P-102	ND	06/26/02
P-106	ND	06/26/02
P-107	ND	06/26/02
PZ-A	ND	04/21/98
PZ-B	ND	04/21/98
PZ-C	0.89	07/15/98
PZ-D	5,000	06/27/02

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
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VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03 | DR. BY: BEB | DR.# 3125-073 | SCALE: 1" = 400'

DISTRIBUTION OF TCE IN MID-DEPTH GROUNDWATER

FIGURE 5

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = DCE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD

STAFF GAUGE 1

PRESIDIO APARTMENT COMPLEX

PROPERTY LINE

FORMER LANDFILL

PROPERTY LINE

OUTFALL STAFF GAUGE 2

STAFF GAUGE 3

STAFF GAUGE 4

WEBSTER MIDDLE SCHOOL (MILWAUKEE PUBLIC SCHOOL PROPERTY)

LINCOLN CREEK

WYRICK PARK (MILWAUKEE COUNTY PROPERTY)

HUSTIS STREET

GREEN TREE ROAD

MILL ROAD

BRENTWOOD

CASPER STREET

CODY STREET

HASSEL LANE

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

GRACELAND CEMETERY

55th STREET

53rd STREET

56th STREET

55th STREET

54th STREET

53rd STREET

52nd STREET

51st STREET

49th STREET

47th STREET

MW-6, MW-18, MW-A, PZ-A, W-MW-1S, W-MW-2S, MW-104, P-102, MW-102, MW-4, W-MW-5S, MW-107, P-107, W-MW-4D, W-MW-4S, MW-103, MW-E, W-MW-10, P-101, MW-101, MW-C, PZ-C, MW-27, MW-106, W-MW-11, MW-108, P-106, W-MW-3S, MW-22, PZ-B, MW-D, MW-E, PZ-D, MW-26, MW-24S, MW-24D, MW-25, MPS P-3, MPS MW-3, MPS MW-1, MPS:P-1, MPS P-2, MPS MW-2, MPS:P-5, MPS:P-4, MPS:P-6, MPS:P-7, MW-11, PZ-11, PZ-9, MW-9, MW-8, PZ-8, MW-10, PZ-10

1,000
100
10
1

N

GRAPHIC SCALE

0 200 400 800

DCE CONCENTRATION		
WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-8	ND	12/07/03
MW-9	ND	12/07/03
MW-10	ND	12/07/03
MW-11	ND	12/07/03
MW-24D	0.96	08/18/98
MW-26	220	06/27/02
W-MW-4D	1.3	07/15/98
W-MW-10	17,000	06/27/02
W-MW-11	1,300	06/27/02
MPS:P-1	3,100	12/08/00
MPS:P-2	1,400	06/27/02
MPS:P-3	2,200	06/27/02
MPS:P-4	2,200	06/27/02
MPS:P-6	1,000	10/02/03
P-101	2.7	06/26/02
P-102	4,500	06/26/02
P-106	980	06/26/02
P-107	8,100	06/26/02
PZ-A	2.7	04/21/98
PZ-B	ND	04/21/98
PZ-C	82	07/15/98
PZ-D	19,000	06/27/02

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-074	SCALE: 1" = 400'

DISTRIBUTION OF DCE IN MID-DEPTH GROUNDWATER

FIGURE 6

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = VINYL CHLORIDE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
MW-107
P-107
W-MW-4D
MW-103
MW-E
W-MW-4S
P-101
W-MW-10
PZ-C
1,000
100
10
1
MW-101
MW-27
MW-106
W-MW-11
MW-105
P-105
P-106
W-MW-3S
MW-22
PZ-B
MW-D
PZ-D
MW-26
OUTFALL STAFF GAUGE 2
MW-24S
MW-24D
HUSTIS STREET
MW-25
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
1,000
100
10
1
55th STREET
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
53rd STREET
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
49th STREET
47th STREET
BRENTWOOD
BRENTWOOD
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

VINYL CHLORIDE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-8	ND	12/07/03
MW-9	ND	12/07/03
MW-10	ND	12/07/03
MW-11	ND	12/07/03
MW-24D	ND	08/18/98
MW-26	160	06/27/02
W-MW-4D	ND	07/15/98
W-MW-10	4,600	06/27/02
W-MW-11	400	06/27/02
MPS:P-1	1,400	12/08/00
MPS:P-2	2,100	06/27/02
MPS:P-3	1,500	06/27/02
MPS:P-4	1,500	06/27/02
MPS:P-6	880	10/02/03
P-101	36	06/26/02
P-102	4,200	06/26/02
P-106	4,500	06/26/02
P-107	7,400	06/26/02
PZ-A	ND	04/21/98
PZ-B	ND	04/21/98
PZ-C	150	07/15/98
PZ-D	3,500	06/27/02

GRAPHIC SCALE

0 200 400 800

NOTES:
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VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-075	SCALE: 1" = 400'

DISTRIBUTION OF VINYL CHLORIDE IN MID-DEPTH GROUNDWATER

FIGURE 7

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = DCE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
MW-107
P-107
MW-103
MW-E
W-MW-10
W-MW-4D
W-MW-4S
MW-C
PZ-C
MW-101
P-101
MW-27
MW-106
P-106
W-MW-11
W-MW-3S
100
10
1
P-108
MW-22
PZ-B
MW-B
MW-24S
MW-24D
HUSTIS STREET
MW-25
MW-26
OUTFALL STAFF GAUGE 2
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL (MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
WYRICK PARK (MILWAUKEE COUNTY PROPERTY)
55th STREET
53rd STREET
10
1
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
BRENTWOOD
49th STREET
47th STREET
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

DCE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
PZ-8	ND	12/07/03
PZ-9	ND	12/07/03
PZ-10	ND	12/07/03
PZ-11	ND	12/07/03
MPS:P-5	25	06/07/96
MPS:P-7	1.2	10/02/03
P-108	120	06/26/02

GRAPHIC SCALE

0 200 400 800

NOTES:
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VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-076	SCALE: 1" = 400'

DISTRIBUTION OF DCE IN DEEP GROUNDWATER

FIGURE 8

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = VINYL CHLORIDE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
PROPERTY LINE
MW-107
P-107
W-MW-4D
W-MW-4S
MW-103
MW-E
W-MW-10
MW-C
PZ-C
100
10
1
MW-101
P-101
MW-27
MW-106
P-106
W-MW-11
W-MW-3S
P-108
MW-108
MW-22
PZ-B
MW-B
MW-D
PZ-D
OUTFALL
STAFF GAUGE 2
MW-24S
MW-24D
HUSTIS STREET
MW-25
MW-26
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
55th STREET
53rd STREET
10
1
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
BRENTWOOD
49th STREET
47th STREET
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

VINYL CHLORIDE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
PZ-8	ND	12/07/03
PZ-9	ND	12/07/03
PZ-10	ND	12/07/03
PZ-11	ND	12/07/03
MPS:P-5	53	06/07/96
MPS:P-7	73	10/02/03
P-108	330	06/26/02

GRAPHIC SCALE
0 200 400 800

NOTES:
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VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-077	SCALE: 1" = 400'

DISTRIBUTION OF VINYL CHLORIDE IN DEEP GROUNDWATER

FIGURE 9

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = TCE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
PROPERTY LINE
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
MW-107
P-107
W-MW-4D
W-MW-4S
MW-103
P-101
W-MW-10
MW-C
PZ-C
MW-27
MW-108
P-108
P-106
W-MW-11
W-MW-3S
PZ-B
MW-B
PZ-D
MW-26
OUTFALL STAFF GAUGE 2
MW-24S
MW-24D
HUSTIS STREET
MW-25
1,000
100
10
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
55th STREET
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
53rd STREET
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
64th STREET
53rd STREET
52nd STREET
51st STREET
BRENTWOOD
BRENTWOOD
49th STREET
47th STREET
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

TCE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-8	ND	12/07/00
MW-9	ND	12/07/00
MW-10	ND	12/07/00
MW-11	ND	10/02/03
MW-24D	5.4	08/18/98
MW-26	ND	06/27/02
W-MW-4D	ND	07/15/98
W-MW-10	ND	06/27/02
W-MW-11	3,900	06/27/02
MPS:P-1	ND	12/08/00
MPS:P-2	ND	06/27/02
MPS:P-3	ND	06/27/02
MPS:P-4	ND	06/27/02
MPS:P-6	ND	10/02/03
P-101	7.4	06/26/02
P-102	ND	06/26/02
P-106	ND	06/26/02
P-107	ND	06/26/02
PZ-A	ND	04/21/98
PZ-B	ND	04/21/98
PZ-C	0.89	07/15/98
PZ-D	5,000	06/27/02

GRAPHIC SCALE
0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

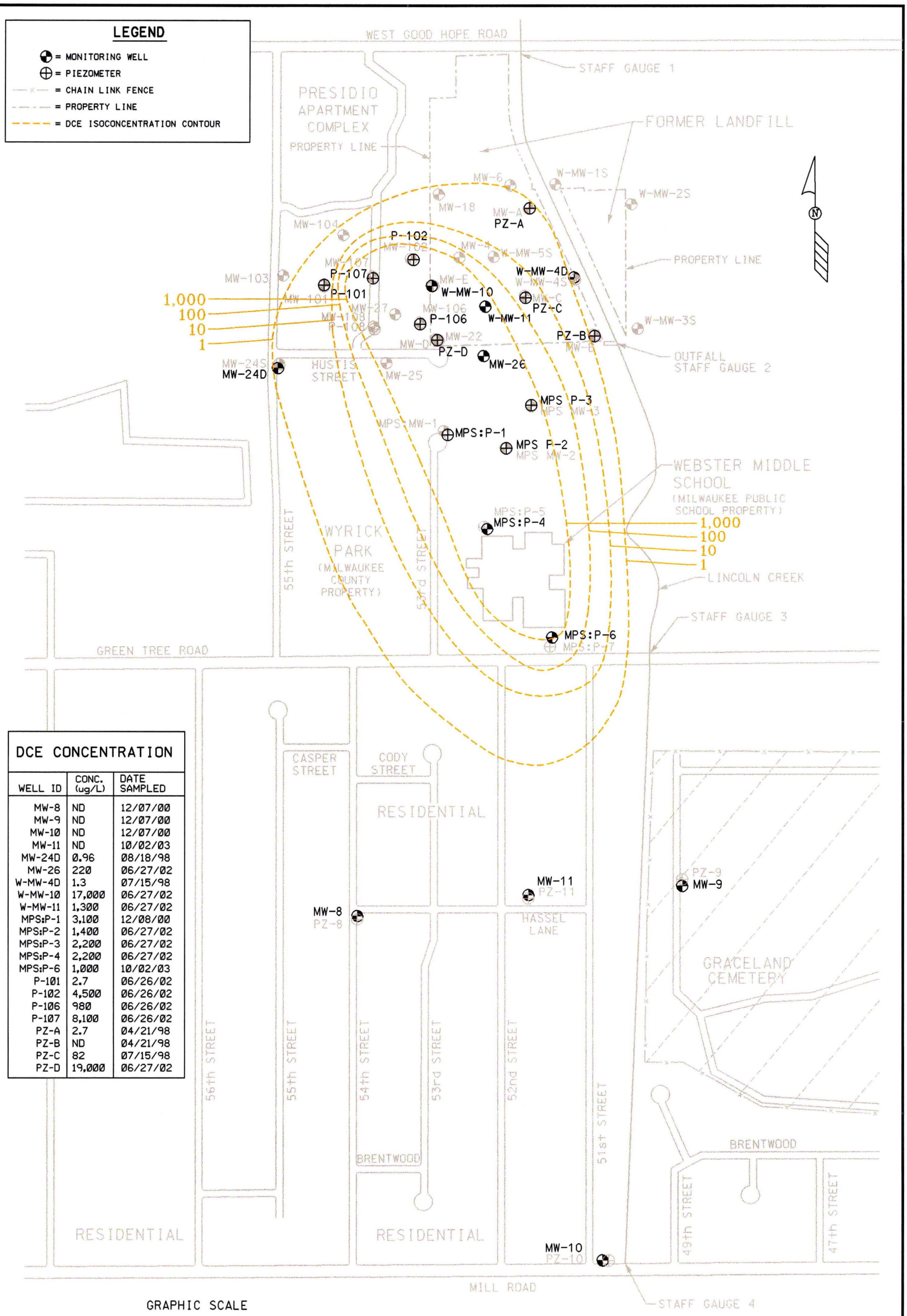
DATE: 10-27-03 | DR. BY: BEB | DR.# 3125-073 | SCALE: 1" = 400'

DISTRIBUTION OF TCE IN MID-DEPTH GROUNDWATER

FIGURE 5

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = DCE ISOCONCENTRATION CONTOUR



DCE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-8	ND	12/07/00
MW-9	ND	12/07/00
MW-10	ND	12/07/00
MW-11	ND	10/02/03
MW-24D	0.96	08/18/98
MW-26	220	06/27/02
W-MW-4D	1.3	07/15/98
W-MW-10	17,000	06/27/02
W-MW-11	1,300	06/27/02
MPS:P-1	3,100	12/08/00
MPS:P-2	1,400	06/27/02
MPS:P-3	2,200	06/27/02
MPS:P-4	2,200	06/27/02
MPS:P-6	1,000	10/02/03
P-101	2.7	06/26/02
P-102	4,500	06/26/02
P-106	980	06/26/02
P-107	8,100	06/26/02
PZ-A	2.7	04/21/98
PZ-B	ND	04/21/98
PZ-C	82	07/15/98
PZ-D	19,000	06/27/02

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03	DR. BY: BEB	DR.# 3125-074	SCALE: 1" = 400'

DISTRIBUTION OF DCE IN MID-DEPTH GROUNDWATER

FIGURE 6

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = VINYL CHLORIDE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
W-MW-5S
MW-107
MW-103
P-107
P-101
W-MW-4D
MW-E
W-MW-10
PZ-C
1,000
100
10
1
MW-101
MW-27
MW-106
W-MW-11
P-106
MW-108
P-108
W-MW-3S
MW-22
PZ-B
MW-D
PZ-D
MW-26
OUTFALL STAFF GAUGE 2
MW-24S
MW-24D
HUSTIS STREET
MW-25
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
55th STREET
53rd STREET
1,000
100
10
1
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
49th STREET
47th STREET
BRENTWOOD
BRENTWOOD
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

VINYL CHLORIDE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
MW-8	ND	12/07/00
MW-9	ND	12/07/00
MW-10	ND	12/07/00
MW-11	ND	10/02/03
MW-24D	ND	08/18/98
MW-26	160	06/27/02
W-MW-4D	ND	07/15/98
W-MW-10	4,600	06/27/02
W-MW-11	400	06/27/02
MPS:P-1	1,400	12/08/00
MPS:P-2	2,100	06/27/02
MPS:P-3	1,500	06/27/02
MPS:P-4	1,500	06/27/02
MPS:P-6	880	10/02/03
P-101	36	06/26/02
P-102	4,200	06/26/02
P-106	4,500	06/26/02
P-107	7,400	06/26/02
PZ-A	ND	04/21/98
PZ-B	ND	04/21/98
PZ-C	150	07/15/98
PZ-D	3,500	06/27/02

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 10-27-03 | DR. BY: BEB | DR.# 3125-075 | SCALE: 1" = 400'

DISTRIBUTION OF VINYL CHLORIDE IN MID-DEPTH GROUNDWATER

FIGURE 7

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = DCE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD

STAFF GAUGE 1

PRESIDIO APARTMENT COMPLEX

PROPERTY LINE

FORMER LANDFILL

MW-6

W-MW-1S

W-MW-2S

MW-18

MW-A
PZ-A

MW-104

P-102
MW-102

MW-4

W-MW-5S

PROPERTY LINE

MW-107
P-107

W-MW-4D
W-MW-4S

MW-103

MW-E
W-MW-10

MW-C
PZ-C

100

10

1

MW-101
P-101

MW-27

MW-106
P-106

W-MW-11

W-MW-3S

P-108

MW-22

PZ-B
MW-B

MW-D
PZ-D

OUTFALL
STAFF GAUGE 2

MW-24S
MW-24D

HUSTIS STREET

MW-25

MW-26

MPS P-3
MPS MW-3

MPS:MW-1

MPS:P-1

MPS P-2
MPS MW-2

WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)

MPS:P-5
MPS:P-4

55th STREET

WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)

53rd STREET

10

1

LINCOLN CREEK

STAFF GAUGE 3

MPS:P-6

MPS:P-7

GREEN TREE ROAD

CASPER STREET

CODY STREET

RESIDENTIAL

MW-11
PZ-11

PZ-9
MW-9

MW-8
PZ-8

HASSEL LANE

GRACELAND CEMETERY

56th STREET

55th STREET

54th STREET

53rd STREET

52nd STREET

51st STREET

BRENTWOOD

49th STREET

47th STREET

RESIDENTIAL

RESIDENTIAL

MW-10
PZ-10

MILL ROAD

STAFF GAUGE 4

DCE CONCENTRATION

WELL ID	CONC. (ug/L)	DATE SAMPLED
PZ-8	ND	12/07/00
PZ-9	ND	12/07/00
PZ-10	ND	12/07/00
PZ-11	ND	10/02/03
MPS:P-5	25	06/27/02
MPS:P-7	1.2	10/02/03
P-108	120	06/26/02

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 10-27-03	DR. BY: BEB	DR.# 3125-076	SCALE: 1" = 400'
DISTRIBUTION OF DCE IN DEEP GROUNDWATER			FIGURE 8

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = VINYL CHLORIDE ISOCONCENTRATION CONTOUR

WEST GOOD HOPE ROAD
STAFF GAUGE 1
PRESIDIO APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
PROPERTY LINE
OUTFALL STAFF GAUGE 2
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
MW-107
P-107
MW-103
MW-E
W-MW-10
W-MW-4D
W-MW-4S
MW-C
PZ-C
MW-101
P-101
MW-21
MW-108
MW-106
P-106
W-MW-11
W-MW-3S
100
10
1
P-108
MW-22
MW-D
PZ-D
PZ-B
MW-B
MW-26
MW-24S
MW-24D
HUSTIS STREET
MW-25
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
10
1
LINCOLN CREEK
STAFF GAUGE 3
55th STREET
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
53rd STREET
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
49th STREET
47th STREET
BRENTWOOD
BRENTWOOD
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

VINYL CHLORIDE CONCENTRATION		
WELL ID	CONC. (ug/L)	DATE SAMPLED
PZ-8	ND	12/07/00
PZ-9	ND	12/07/00
PZ-10	ND	12/07/00
PZ-11	ND	10/02/03
MPS:P-5	53	06/27/02
MPS:P-7	73	10/02/03
P-108	330	06/26/02

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 10-27-03	DR. BY: BEB	DR.# 3125-077	SCALE: 1" = 400'
DISTRIBUTION OF VINYL CHLORIDE IN DEEP GROUNDWATER			FIGURE 9

TABLE 4
Private Well Survey
Former Good Hope Road Landfill
Milwaukee, Wisconsin
Project # 3125

Address of Well (1)	Date of Installation (2)	Dimensions of Well (3)	Well In Use (lawn care) (4)	Well Abandoned (5)	Approximate Date of Well Abandonment (6)
5309 Hassel Lane	1/21/1950	99'x6"			
5311 Hassel Lane	8/4/1954	79'x6"			
5322 Hassel Lane	**unknown**	**unknown**		**X**	**unknown**
4650 Greentree *	8/15/1945	113'x6"			
4654 Greentree *	6/7/1946	114'x6"			
5109 Greentree *	8/29/1956	88'x6"			
5113 Greentree	6/2/1952	56'x6"			
5217 Greentree	**8/1/1956**	**124"x6'**		**X**	**6/5/1992**
5321 Greentree *	7/12/1947	100'x6"			
5431 Greentree	7/21/1956	140'x6"			
5521 Greentree	**4/26/1955**	**121'x6"**		**X**	**10/7/1969**
5531 Greentree	**4/19/1955**	**153'x6"**		**X**	**10/7/1969**
5600 Greentree	11/6/1953	155'x6"			
5735 Greentree	**unknown**	**13'6"x1-6"**		**X**	**10/13/1966**
5805 Greentree	4/6/1950	173'x6"			
4809 Mill *	**unknown**	**70'x6"**		**X**	**7/4/1958**
4822 Mill *	3/24/1948	100'x6"			
4832 Mill *	1/9/1956	140'x6"			
4908 Mill *	2/21/1952	81'x6"			
5111 Mill *	5/9/1955	117'x6"			
5132 Mill	8/3/1953	125'x6"			
5135 Mill	9/17/1948	75'x5'			
5225 Mill	9/21/1954	98'x6"			
5632 Mill	**11/22/1954**	**151'x6"**		**X**	**3/15/1971**
5713 Mill *	12/15/1994	131'x6"			
6838 51st *	**unknown**	**245'x5"**		**X**	**6/1/1994**
6881 51st *	**unknown**	**230'x6"**		**X**	**11/3/1994**

TABLE 4
Private Well Survey
Former Good Hope Road Landfill
Milwaukee, Wisconsin
Project # 3125

Address of Well (1)	Date of Installation (2)	Dimensions of Well (3)	Well In Use (lawn care) (4)	Well Abandoned (5)	Approximate Date of Well Abandonment (6)
6412 52nd *	10/14/1947	112'x6"			
6427 52nd	4/14/1942	76'x6"			
6439 52nd *	5/16/1944	88'x10"			
6527 52nd *	6/11/1952	92'x7"			
6601 52nd	**9/22/1943**	**64'x6"**		**X**	**5/21/1999**
6613 52nd *	11/6/1939	80'x6"			
6617 52nd	7/21/1956	147'x6"			
6623 52nd	5/6/1953	80'x6"			
6632 52nd	11/24/1951	114'x6"			
6646 52nd	8/11/1956	69'x5"	X		
6652 52nd	**unknown**	**50'x5"**		**X**	**5/19/1960**
6656 52nd	1/3/1953	88'x6"			
6684 52nd	2/11/1954	112'x6"			
6687 52nd	6/28/1956	130'x6"			
6712 52nd	**unknown**	**84'x6"**		**X**	**7/8/1997**
6715 52nd	6/20/1952	135'x76"			
6728 52nd	11/12/1943	80'x7"			
6741 52nd	7/11/1956	130'x6"			
6746 52nd	unknown		X		
6749 52nd	8/19/1955	70'x7"			
6762 52nd	**1/14/1956**	**125'x6"**		**X**	**10/30/1964**
6771 52nd *	10/22/1956	100'x6"			

TABLE 4
Private Well Survey
Former Good Hope Road Landfill
Milwaukee, Wisconsin
Project # 3125

Address of Well (1)	Date of Installation (2)	Dimensions of Well (3)	Well In Use (lawn care) (4)	Well Abandoned (5)	Approximate Date of Well Abandonment (6)
6432 54th	**8/18/1950**	**120'x6"**		**X**	**12/5/1996**
6438 54th	**unknown**			**X**	**12/21/1960**
6439 54th	**unknown**	**95'x6"**		**X**	**11/10/1998**
6444 54th	9/19/1966	120'x6"			
6451 54th	**unknown**			**X**	**4/13/1961**
6478 54th	**unknown**	**120'x6"**		**X**	**4/13/1961**
6479 54th	6/25/1959	176'x6"			
6500 54th	9/30/1953	142'x6"			
6500 54th	11/5/1954	151'x6"			
6505 54th	7/28/1952	67'x6"			
6509 54th	5/15/1954	107'x6"			
6523 54th	**unknown**	**18'**		**X**	**5/3/1961**
6529 54th	4/20/1950	131'x6"			
6535 54th	1/3/1949	106'x6'			
6547 54th	**unknown**	**95'x6"**		**X**	**5/6/1993**
6554 54th	12/2/1952	101'x6"			
6559 54th	8/6/1944	100'x6"			
6570 54th	**unknown**			**X**	**9/1/1959**
6583 54th *	4/10/1950	105'x6"			
6601 54th	10/29/1954	128'x6"			
6608 54th	11/25/1949	102'x6"			
6612 54th	9/25/1956	132'x6"			
6628 54th	2/10/1950	80'x6"			
6634 54th	11/25/1957	110'x6"			
6635 54th	12/6/1950	99'x6"			
6646 54th	10/27/1952	108'x6"			
6652 54th	**1/19/1953**	**106'x6"**		**X**	**12/28/1995**
6657 54th	4/11/1955	132'x6"			
6673 54th *	6/24/1953	140'x6"			
6680 54th	8/18/1953	140'x6"			
6683 54th	**unknown**	**170'x6"**		**X**	**6/5/1992**
6700 54th	7/11/1953	140'x6"			
6706 54th	**11/23/1957**	**120'x6"**		**X**	**2/3/1993**
6711 54th	**unknown**	**unknown**		**X**	**3/20/1963**
6759 54th	**unknown**	**15'x2"**		**X**	**3/29/1960**

TABLE 4
Private Well Survey
Former Good Hope Road Landfill
Milwaukee, Wisconsin
Project # 3125

Address of Well (1)	Date of Installation (2)	Dimensions of Well (3)	Well In Use (lawn care) (4)	Well Abandoned (5)	Approximate Date of Well Abandonment (6)
6417 55th	11/14/1951	96'x6"			
6455 56th	7/23/1953	141'x6"			
6477 56th	**10/7/1956**	**121'x6"**		**X**	**6/15/2000**
6484 56th	10/22/1956	114'x6"			
6544 56th	**8/12/1957**	**157'x6"**		**X**	**12/10/1990**
6545 56th	9/10/1951	142'x6"			
6554 56th	8/4/1954	96'x6"			
6566 56th	1/12/1943	65'x6"			
6613 56th	**7/31/1942**	**160'x4"**		**X**	**10/4/1999**
6618 56th *	**7/31/1953**	**170'x6"**		**X**	**6/11/1999**
6628 56th	3/25/1957	130'x6"			
6653-63 56th	11/1/1944	70'x6"			
6671 56th	**4/30/1944**	**99'x6"**		**X**	**1/2/1964**
6681 56th	11/8/1955	117'x6"			
6701 56th	**2/28/1956**	**102'x6"**		**X**	**1/8/2002**
6704 56th	10/3/1957	100'x7"			
6709 56th	9/17/1957	101'x6"			
6727 56th	**5/13/1957**	**98'x6"**		**X**	**12/18/1991**
6728 56th	**unknown**	**24'**		**X**	**11/16/1992**
6745 56th	10/7/1954	74'x6"			
6755 56th	**4/13/1954**	**107'x7"**		**X**	**7/11/1994**
6765 56th	**unknown**	**109'x6"**		**X**	**1/2/1964**
6427 57th *	8/2/1960	123'x6"			

TABLE 4
Private Well Survey
Former Good Hope Road Landfill
Milwaukee, Wisconsin
Project # 3125

Address of Well (1)	Date of Installation (2)	Dimensions of Well (3)	Well In Use (lawn care) (4)	Well Abandoned (5)	Approximate Date of Well Abandonment (6)
6417 58th	**1/12/1950**	**192'x6"**		**X**	**6/10/2000**
6436 58th *	3/28/1957	120'x6"			
6444 58th	10/13/1943	36'x8"			
6480 58th	**unknown**	**unknown**		**X**	**6/25/1959**
6484 58th	**unknown**	**8'x8"**		**X**	**6/12/1959**
6528 58th	**unknown**	**unknown**		**X**	**6/25/1959**
6544 58th	10/23/1954	153'x6"			
6545-47 58th	**unknown**	**150'**		**X**	**8/11/1961**
6552 58th	11/8/1955	166'x6"			
6555 58th	9/28/1954	115'x6"			
6560 58th	**unknown**	**168'x8"**		**X**	**11/15/1960**
6573 58th *	**12/6/1955**	**116'x7"**		**X**	**3/20/1990**
6609 58th *	12/14/1948	111'x6"			
6617 58th	1/29/1946	81'x6"			
6628 58th	**unknown**	**20'x8"**		**X**	**11/20/1959**
6636 58th	1/6/1956	177'x7"	X		
6642 58th	4/19/1956	168'x7"			
6654 58th	11/12/1951	68'x6"			
6665 58th	3/5/1948	206'x6'			
6700 58th	11/5/1950	173'x6"			
6711 58th *	3/7/1955	184'x6"			
6712 58th	**11/5/1950**	**173'x6"**		**X**	**7/23/1998**
6730 58th	4/1/1958	151'x5"			
6733 58th	**10/23/1956**	**68'x6"**		**X**	**7/8/1999**
6764 58th *	11/28/1956	125'x6"			
3 blocks west of Hopkins on Mill	12/20/1939	96'x8"	X		

TABLE 4
Private Well Survey
Former Good Hope Road Landfill
Milwaukee, Wisconsin
Project # 3125

Address of Well (1)	Date of Installation (2)	Dimensions of Well (3)	Well In Use (lawn care) (4)	Well Abandoned (5)	Approximate Date of Well Abandonment (6)

Note:
* = Well address has changed, new address is unknown.

1) A private well survey was completed for the area south of Green Tree Road and north of Mill Road extending from 43rd Street to 58th Street. Only well logs referencing a specific address were included in the survey. Well information tabulated here is based on the well construction reports provided by the Wisconsin Geological and Natural History Survey and well abandonment forms provided by the Wisconsin Department of Natural Resources. Survey includes only those wells that are listed with specific address on the well construction and/or the well abandonment forms. If specific address for a well is not listed on either of these forms, further search for the status of the well was not performed.

2) Currently a water supply well is present at the Graceland Cemetry located at 6401 43rd Street. A well construction form for that address was unable to be located, however, a well construction form referenced to former Hopkins Road and Mill Road appears to be coincide with the well location of the existing supply well at Graceland Cemetry.

3) A review of the City of Milwaukee Well Operations Permits was conducted to determine if private wells in the search area were still in use. The City of Milwaukee records indicated that no well operation permit exists for any of the wells in the search area. However, according to the Wisconsin Department of Natural Resources database a total of three private wells were documented as in use for lawn care (see col. 4).

FIGURES

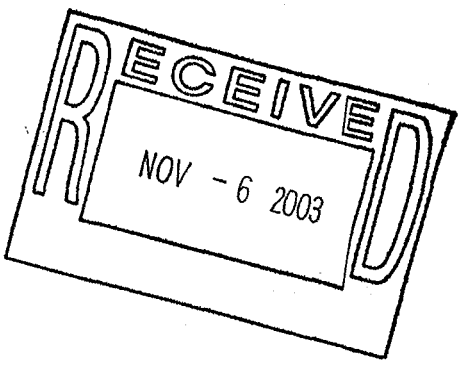
APPENDIX A

LABORATORY ANALYTICAL REPORTS

EN CHEM INC.

Corporate Office & Laboratory
1241 Bellevue Street, Suite 9, Green Bay, WI 54302
920-469-2436, 800-7-ENCHEM, Fax: 920-469-8827
www.enchem.com

Analytical Report Number: 840563



Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE ROAD LANDFILL
Project Number : 3125

Lab Sample Number	Field ID	Matrix	Collection Date
840563-001	PZ-11	WATER	10/23/03

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. Reported results shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested.

Laurie Voegel
Approval Signature

11/5/03
Date

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 840563

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE ROAD LANDFILL
Project Number : 3125
Field ID : PZ-11

Matrix Type : WATER
Collection Date : 10/23/03
Report Date : 11/04/03
Lab Sample Number : 840563-001

VOLATILES

Prep Date: 11/03/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	<	0.92	0.92	3.1		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	<	0.90	0.90	3.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	<	0.20	0.20	0.67		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	<	0.42	0.42	1.4		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	<	0.75	0.75	2.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	<	0.57	0.57	1.9		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	<	0.75	0.75	2.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	<	0.74	0.74	2.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	<	0.99	0.99	3.3		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	<	0.97	0.97	3.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	<	0.97	0.97	3.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	<	0.87	0.87	2.9		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	<	0.56	0.56	1.9		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	<	0.83	0.83	2.8		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	<	0.36	0.36	1.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	<	0.46	0.46	1.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	<	0.83	0.83	2.8		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	<	0.87	0.87	2.9		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	<	0.61	0.61	2.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	<	0.95	0.95	3.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	<	0.62	0.62	2.1		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	<	0.85	0.85	2.8		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	<	0.74	0.74	2.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Benzene		8.4	0.41	1.4		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Bromobenzene	<	0.82	0.82	2.7		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Bromochloromethane	<	0.97	0.97	3.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Bromodichloromethane	<	0.56	0.56	1.9		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Bromoform	<	0.94	0.94	3.1		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Bromomethane	<	0.91	0.91	3.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	<	0.49	0.49	1.6		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Chlorobenzene	<	0.41	0.41	1.4		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	<	0.81	0.81	2.7		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Chloroethane	<	0.97	0.97	3.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Chloroform	<	0.37	0.37	1.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Chloromethane	<	0.24	0.24	0.80		1	ug/L	&	11/03/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	<	0.83	0.83	2.8		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Dibromomethane	<	0.60	0.60	2.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	<	0.99	0.99	3.3		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	<	0.76	0.76	2.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Ethylbenzene	<	0.54	0.54	1.8		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	<	0.79	0.79	2.6		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	<	0.67	0.67	2.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Isopropylbenzene	<	0.59	0.59	2.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Methylene Chloride	<	0.43	0.43	1.4		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	<	0.61	0.61	2.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Naphthalene	<	0.74	0.74	2.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
n-Butylbenzene	<	0.93	0.93	3.1		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
n-Propylbenzene	<	0.81	0.81	2.7		1	ug/L		11/03/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 840563

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE ROAD LANDFILL
Project Number : 3125
Field ID : PZ-11

Matrix Type : WATER
Collection Date : 10/23/03
Report Date : 11/04/03
Lab Sample Number : 840563-001

VOLATILES

Prep Date: 11/03/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
p-Isopropyltoluene	<	0.67	0.67	2.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	<	0.89	0.89	3.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Styrene	<	0.86	0.86	2.9		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	0.97	0.97	3.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Tetrachloroethene	<	0.45	0.45	1.5		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Toluene	<	0.67	0.67	2.2		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	<	0.89	0.89	3.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Trichloroethene	<	0.48	0.48	1.6		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Vinyl Chloride	<	0.18	0.18	0.60		1	ug/L	&	11/03/03	SW846 5030B	SW846 8260B
Xylene, o	<	0.83	0.83	2.8		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		11/03/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene		82				1	%Recov		11/03/03	SW846 5030B	SW846 8260B
Toluene-d8		104				1	%Recov		11/03/03	SW846 5030B	SW846 8260B
Dibromofluoromethane		117				1	%Recov		11/03/03	SW846 5030B	SW846 8260B

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
H	All	Preservation, extraction or analysis performed past holding time.
J	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
J	Organic	Concentration detected is greater than the method detection limit but less than the reporting limit.
K	Inorganic	Sample received unpreserved. Sample was either preserved at the time of receipt or at the time of sample preparation.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
N	All	Spiked sample recovery not within control limits.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.

En Chem Inc.

Analysis Summary by Laboratory

1241 Bellevue Street
Green Bay, WI 54302

1090 Kennedy Avenue
Kimberly, WI 54136

Test Group Name	840563-001
VOLATILES	G

Wisconsin Certification	
G = En Chem Green Bay	405132750 / DATCP: 105 000444
K = En Chem Kimberly	445134030
S = En Chem Superior	Not Applicable
C = Subcontracted Analysis	

En Chem, Inc. Cooler Receipt Log

Batch No. 840563

Project Name or ID 3125 No. of Coolers: 1 Temps: ROI

A. Receipt Phase: Date cooler was opened: 10/31/03 **By:** GD

1: Were samples received on ice? (Must be ≤ 6 C)	YES	NO[2]	
2. Was there a Temperature Blank?	YES	NO	
3: Were custody seals present and intact? (Record on COC)	YES	NO	
4: Are COC documents present?	YES	NO[2]	
5: Does this Project require quick turn around analysis?	YES	NO	
6: Is there any sub-work?	YES	NO	
7: Are there any short hold time tests?	YES	NO	
8: Are any samples nearing expiration of hold-time? (Within 2 days)	YES[1]	NO	Contacted by/Who
9: Do any samples need to be Filtered or Preserved in the lab?	YES[1]	NO	Contacted by/Who

B. Check-In Phase: Date samples were Checked-In: 10-31-03 **By:** GD

1: Were all sample containers listed on the COC received and intact?	YES	NO[2]	NA
2: Sign the COC as received by En Chem. Completed	YES	NO	
3: Do sample labels match the COC?	YES	NO[2]	
4: Completed pH check on preserved samples.. *(This statement does not apply to water: VOC, O&G, TOC, DRO, Total Rec. Phenolics)*	YES	NO	NA
5: Do samples have correct chemical preservation? *(This statement does not apply to water: VOC, O&G, TOC, DRO, Total Rec. Phenolics)*	YES	NO[2]	NA
6: Are dissolved parameters field filtered?	YES	NO[2]	NA
7: Are sample volumes adequate for tests requested?	YES	NO[2]	
8: Are VOC samples free of bubbles >6mm	YES	NO[2]	NA
9: Enter samples into logbook. Completed	YES	NO	
10: Place laboratory sample number on all containers and COC. Completed	YES	NO	
11: Complete Laboratory Tracking Sheet (LTS). Completed	YES	NO	NA
12: Start Nonconformance form.	YES	NO	NA
13: Initiate Subcontracting procedure. Completed	YES	NO	NA
14: Check laboratory sample number on all containers and COC. CVC	YES	NO	NA

Short Hold-time tests:

48 Hours or less	7 days	Footnotes
Coliform (6 hrs)	Flashpoint	1 Notify proper lab group immediately.
Hexavalent Chromium (24 Hrs)	TSS	
BOD	Total Solids	2 Complete nonconformance memo.
Nitrite or Nitrate	TDS	
Low Level Mercury	Sulfide	
Ortho Phosphorus	Free Liquids	
Turbidity	Total Volatile Solids	
Surfactants	Aqueous Extractable Organics- ALL	
Sulfite	Unpreserved VOC's	
En Core Preservation	Ash	
Color		

Rev. 4/11/03, Attachment to 1-REC-5.
Subject to QA Audit.

Reviewed by/date W 11/3/03

p:/everyone/forms/samplereceiving/crl.doc

EN CHEM INC.
1241 Bellevue St., Suite 9
Green Bay, WI 54302
920-469-2436
FAX 920-469-8827

CHAIN OF CUSTODY

105988

Page 1 of 1

(Please Print Legibly)
Company Name: Sigma Env.
Branch or Location: Oak Creek, WI 53154
Project Contact: Mafizal Islam
Telephone: 414-768-7144
Project Number: 3125
Project Name: Good Hope Road Landfill
Project State: WI
Sampled By (Print): David Dailey
PO #:

Quote #:
Mail Report To: Mafizal Islam
Company: Sigma Env.
Address: 220 E. Ryan Rd
Oak Creek, WI 53154
Invoice To:
Company:
Address:
Mail Invoice To:

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol G=NaOH
H = Sodium Bisulfate Solution I = Sodium Thiosulfate J = Other

FILTERED? (YES/NO)
PRESERVATION (CODE)*

RECEIVED
NOV - 6 2003

Data Package Options - (please circle if requested)
Sample Results Only (no QC)
EPA Level II (Subject to Surcharge)
EPA Level III (Subject to Surcharge)
EPA Level IV (Subject to Surcharge)

Regulatory Program: UST, RCRA, SDWA, NPDES, CERCLA

Matrix Codes: W=Water, S=Soil, A=Air, C=Charcoal, B=Biota, Sl=Sludge

LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	ANALYSES REQUESTED: VOC	TOTAL # OF BOTTLES SENT	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)
CCL	PZ-11	10-23-03	9:26	W	X			3-40ml's

No Trip Blk Rec'd

Rush Turnaround Time Requested (TAT) - Prelim
(Rush TAT subject to approval/surcharge)
Date Needed:
Transmit Prelim Rush Results by (circle):
Phone Fax E-Mail
Phone #:
Fax #:
E-Mail Address:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
David Dailey	10-23-03 9:30		
	10/30/03		10/30/03 1015
	10/30/03		

En Chem Project No.: 840363
Sample Receipt Temp: 1.0 C
Sample Receipt pH (Wet/Metals): N/A
Cooler Custody Seal: Present / Not Present
Intact / Not Intact

Version 3.0: 03/03

EN CHEM INC.

Corporate Office & Laboratory
1241 Bellevue Street, Suite 9, Green Bay, WI 54302
920-469-2436, 800-7-ENCHEM, Fax: 920-469-8827
www.enchem.com

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES

Project Name : GOOD HOPE LANDFILL

Project Number : 3125

Lab Sample Number	Field ID	Matrix	Collection Date
839544-001	MPS : P-6	WATER	10/02/03
839544-002	MPS : P-7	WATER	10/02/03
839544-003	MW-11	WATER	10/02/03
839544-004	PZ-11	WATER	10/02/03
839544-005	DUPLICATE	WATER	10/02/03
839544-006	TRIP BLANK	WATER	10/02/03

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. Reported results shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested.

Approval Signature

10/17/03
Date

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : MPS : P-6

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethane	1000			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Ethene	8300			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Methane	38			0.20	1	ug/l		10/14/03	WA1.02	WA1.02

VOLATILES

Prep Date: 10/09/03

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
1,1,1,2-Tetrachloroethane	< 9.2	9.2	31		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 9.0	9.0	30		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 2.0	2.0	6.7		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 4.2	4.2	14		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 7.5	7.5	25		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 5.7	5.7	19		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 7.5	7.5	25		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 7.4	7.4	25		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 9.9	9.9	33		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 9.7	9.7	32		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 9.7	9.7	32		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 8.7	8.7	29		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 5.6	5.6	19		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 8.3	8.3	28		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 3.6	3.6	12		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 4.6	4.6	15		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 8.3	8.3	28		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 8.7	8.7	29		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 6.1	6.1	20		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 9.5	9.5	32		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 6.2	6.2	21		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 8.5	8.5	28		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 7.4	7.4	25		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Benzene	< 4.1	4.1	14		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromobenzene	< 8.2	8.2	27		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromochloromethane	< 9.7	9.7	32		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromodichloromethane	< 5.6	5.6	19		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromoform	< 9.4	9.4	31		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromomethane	< 9.1	9.1	30		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 4.9	4.9	16		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chlorobenzene	< 4.1	4.1	14		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 8.1	8.1	27		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloroethane	< 9.7	9.7	32		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloroform	< 3.7	3.7	12		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloromethane	< 2.4	2.4	8.0		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	1000	8.3	28		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 1.9	1.9	6.3		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Dibromomethane	< 6.0	6.0	20		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 9.9	9.9	33		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 7.6	7.6	25		10	ug/L		10/09/03	SW846 5030B	SW846 8260B

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Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : MPS : P-6

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-001

VOLATILES

Prep Date: 10/09/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethylbenzene	<	5.4	5.4	18		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	<	7.9	7.9	26		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	<	6.7	6.7	22		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Isopropylbenzene	<	5.9	5.9	20		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Methylene Chloride	<	4.3	4.3	14		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	<	6.1	6.1	20		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Naphthalene	<	7.4	7.4	25		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
n-Butylbenzene	<	9.3	9.3	31		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
n-Propylbenzene	<	8.1	8.1	27		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
p-Isopropyltoluene	<	6.7	6.7	22		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	<	8.9	8.9	30		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Styrene	<	8.6	8.6	29		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	9.7	9.7	32		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Tetrachloroethene	<	4.5	4.5	15		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Toluene	<	6.7	6.7	22		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	<	8.9	8.9	30		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	<	1.9	1.9	6.3		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Trichloroethene	<	4.8	4.8	16		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Vinyl Chloride		880	1.8	6.0		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Xylene, o	<	8.3	8.3	28		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	18	18	60		10	ug/L		10/09/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene		107				1	%Recov		10/09/03	SW846 5030B	SW846 8260B
Toluene-d8		118				1	%Recov		10/09/03	SW846 5030B	SW846 8260B
Dibromofluoromethane		127				1	%Recov		10/09/03	SW846 5030B	SW846 8260B

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Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : MPS : P-7

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethane	490			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Ethene	7200			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Methane	10			0.20	1	ug/l		10/14/03	WA1.02	WA1.02

VOLATILES

Prep Date: 10/09/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
1,1,1,2-Tetrachloroethane	<	0.92	0.92	3.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	<	0.90	0.90	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	<	0.20	0.20	0.67		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	<	0.42	0.42	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	<	0.75	0.75	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	<	0.57	0.57	1.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	<	0.75	0.75	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	<	0.74	0.74	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	<	0.99	0.99	3.3		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	<	0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	<	0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	<	0.87	0.87	2.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	<	0.56	0.56	1.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	<	0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	<	0.36	0.36	1.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	<	0.46	0.46	1.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	<	0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	<	0.87	0.87	2.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	<	0.61	0.61	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	<	0.95	0.95	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	<	0.62	0.62	2.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	<	0.85	0.85	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	<	0.74	0.74	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Benzene	<	0.41	0.41	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromobenzene	<	0.82	0.82	2.7		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromochloromethane	<	0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromodichloromethane	<	0.56	0.56	1.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromoform	<	0.94	0.94	3.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromomethane	<	0.91	0.91	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	<	0.49	0.49	1.6		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chlorobenzene	<	0.41	0.41	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	<	0.81	0.81	2.7		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloroethane	<	0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloroform	<	0.37	0.37	1.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloromethane	<	0.24	0.24	0.80		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene		1.2	0.83	2.8		1	ug/L	Q	10/09/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Dibromomethane	<	0.60	0.60	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	<	0.99	0.99	3.3		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	<	0.76	0.76	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
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Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : MPS : P-7

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-002

VOLATILES

Prep Date: 10/09/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethylbenzene	<	0.54	0.54	1.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	<	0.79	0.79	2.6		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	<	0.67	0.67	2.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Isopropylbenzene	<	0.59	0.59	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Methylene Chloride	<	0.43	0.43	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	<	0.61	0.61	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Naphthalene	<	0.74	0.74	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
n-Butylbenzene	<	0.93	0.93	3.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
n-Propylbenzene	<	0.81	0.81	2.7		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
p-Isopropyltoluene	<	0.67	0.67	2.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	<	0.89	0.89	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Styrene	<	0.86	0.86	2.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Tetrachloroethene	<	0.45	0.45	1.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Toluene	<	0.67	0.67	2.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	<	0.89	0.89	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Trichloroethene	<	0.48	0.48	1.6		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Vinyl Chloride		64	0.18	0.60		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Xylene, o	<	0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene		109				1	%Recov		10/09/03	SW846 5030B	SW846 8260B
Toluene-d8		118				1	%Recov		10/09/03	SW846 5030B	SW846 8260B
Dibromofluoromethane		125				1	%Recov		10/09/03	SW846 5030B	SW846 8260B

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1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : MW-11

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-003

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethane	360			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Ethene	19			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Methane	1.3			0.20	1	ug/l		10/14/03	WA1.02	WA1.02

VOLATILES

Prep Date: 10/09/03

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Benzene	< 0.41	0.41	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : MW-11

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-003

VOLATILES

Prep Date: 10/09/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethylbenzene	<	0.54	0.54	1.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	<	0.79	0.79	2.6		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	<	0.67	0.67	2.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Isopropylbenzene	<	0.59	0.59	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Methylene Chloride	<	0.43	0.43	1.4		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	<	0.61	0.61	2.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Naphthalene	<	0.74	0.74	2.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
n-Butylbenzene	<	0.93	0.93	3.1		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
n-Propylbenzene	<	0.81	0.81	2.7		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
p-Isopropyltoluene	<	0.67	0.67	2.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	<	0.89	0.89	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Styrene	<	0.86	0.86	2.9		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	0.97	0.97	3.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Tetrachloroethene	<	0.45	0.45	1.5		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Toluene	<	0.67	0.67	2.2		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	<	0.89	0.89	3.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Trichloroethene	<	0.48	0.48	1.6		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Vinyl Chloride	<	0.18	0.18	0.60		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Xylene, o	<	0.83	0.83	2.8		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		10/09/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene		109				1	%Recov		10/09/03	SW846 5030B	SW846 8260B
Toluene-d8		120				1	%Recov		10/09/03	SW846 5030B	SW846 8260B
Dibromofluoromethane		124				1	%Recov		10/09/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : PZ-11

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-004

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethane	260			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Ethene	430			5.0	1	ng/L		10/14/03	WA1.02	WA1.02
Methane	0.70			0.20	1	ug/l		10/14/03	WA1.02	WA1.02

VOLATILES

Prep Date: 10/07/03

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Benzene	8.9	0.41	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : PZ-11

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-004

VOLATILES

Prep Date: 10/07/03

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
Ethylbenzene	< 0.54	0.54	1.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 0.79	0.79	2.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Isopropylbenzene	< 0.59	0.59	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Methylene Chloride	< 0.43	0.43	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 0.61	0.61	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Naphthalene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
n-Butylbenzene	< 0.93	0.93	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
n-Propylbenzene	< 0.81	0.81	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
p-Isopropyltoluene	< 0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	< 0.89	0.89	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Styrene	< 0.86	0.86	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Tetrachloroethene	< 0.45	0.45	1.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Toluene	< 0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 0.89	0.89	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Trichloroethene	< 0.48	0.48	1.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Vinyl Chloride	< 0.18	0.18	0.60		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Xylene, o	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Xylenes, m + p	< 1.8	1.8	6.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	92				1	%Recov		10/07/03	SW846 5030B	SW846 8260B
Toluene-d8	106				1	%Recov		10/07/03	SW846 5030B	SW846 8260B
Dibromofluoromethane	100				1	%Recov		10/07/03	SW846 5030B	SW846 8260B

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1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : DUPLICATE

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-005

VOLATILES

Prep Date: 10/07/03

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Benzene	< 0.41	0.41	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	1.2	0.83	2.8		1	ug/L	Q	10/07/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Ethylbenzene	< 0.54	0.54	1.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 0.79	0.79	2.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Isopropylbenzene	< 0.59	0.59	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Methylene Chloride	< 0.43	0.43	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 0.61	0.61	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Naphthalene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client: SIGMA ENVIRONMENTAL SERVICES
Project Name: GOOD HOPE LANDFILL
Project Number: 3125
Field ID: DUPLICATE

Matrix Type: WATER
Collection Date: 10/02/03
Report Date: 10/17/03
Lab Sample Number: 839544-005

VOLATILES

Prep Date: 10/07/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
n-Butylbenzene	<	0.93	0.93	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
n-Propylbenzene	<	0.81	0.81	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
p-Isopropyltoluene	<	0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	<	0.89	0.89	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Styrene	<	0.86	0.86	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Tetrachloroethene	<	0.45	0.45	1.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Toluene	<	0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	<	0.89	0.89	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Trichloroethene	<	0.48	0.48	1.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Vinyl Chloride		73	0.18	0.60		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Xylene, o	<	0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene		92				1	%Recov		10/07/03	SW846 5030B	SW846 8260B
Toluene-d8		103				1	%Recov		10/07/03	SW846 5030B	SW846 8260B
Dibromofluoromethane		104				1	%Recov		10/07/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : TRIP BLANK

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-006

VOLATILES

Prep Date: 10/07/03

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Benzene	< 0.41	0.41	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Ethylbenzene	< 0.54	0.54	1.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 0.79	0.79	2.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Isopropylbenzene	< 0.59	0.59	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Methylene Chloride	< 0.43	0.43	1.4		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 0.61	0.61	2.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Naphthalene	< 0.74	0.74	2.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B

En Chem Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 839544

Client : SIGMA ENVIRONMENTAL SERVICES
Project Name : GOOD HOPE LANDFILL
Project Number : 3125
Field ID : TRIP BLANK

Matrix Type : WATER
Collection Date : 10/02/03
Report Date : 10/17/03
Lab Sample Number : 839544-006

VOLATILES

Prep Date: 10/07/03

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Analysis Date	Prep Method	Analysis Method
n-Butylbenzene	<	0.93	0.93	3.1		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
n-Propylbenzene	<	0.81	0.81	2.7		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
p-Isopropyltoluene	<	0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
sec-Butylbenzene	<	0.89	0.89	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Styrene	<	0.86	0.86	2.9		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	0.97	0.97	3.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Tetrachloroethene	<	0.45	0.45	1.5		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Toluene	<	0.67	0.67	2.2		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	<	0.89	0.89	3.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	<	0.19	0.19	0.63		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Trichloroethene	<	0.48	0.48	1.6		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Vinyl Chloride	<	0.18	0.18	0.60		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Xylene, o	<	0.83	0.83	2.8		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		10/07/03	SW846 5030B	SW846 8260B
4-Bromofluorobenzene		91				1	%Recov		10/07/03	SW846 5030B	SW846 8260B
Toluene-d8		105				1	%Recov		10/07/03	SW846 5030B	SW846 8260B
Dibromofluoromethane		101				1	%Recov		10/07/03	SW846 5030B	SW846 8260B

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
H	All	Preservation, extraction or analysis performed past holding time.
J	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
J	Organic	Concentration detected is greater than the method detection limit but less than the reporting limit.
K	Inorganic	Sample received unpreserved. Sample was either preserved at the time of receipt or at the time of sample preparation.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
N	All	Spiked sample recovery not within control limits.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.

En Chem Inc.

Analysis Summary by Laboratory

1241 Bellevue Street
Green Bay, WI 54302

1090 Kennedy Avenue
Kimberly, WI 54136

Test Group Name	839544-001	839544-002	839544-003	839544-004	839544-005	839544-006
METHANE + ETHANE + ETHENE	S	S	S	S		
VOLATILES	G	G	G	G	G	G

Wisconsin Certification	
G = En Chem Green Bay	405132750 / DATCP: 105 000444
K = En Chem Kimberly	445134030
S = Subcontracted Analysis	

ENCHEM inc.

Documentation of Subcontracted Analysis

Listed below are labs used for subcontracted analysis and their associated State Certification numbers.

Analyst Code	Sub-Laboratory	Wisconsin Cert #	Minnesota Cert #	Phone
*BD	Badger Labs	445023150	NA	920-729-1100
*BR	Braun Intertec Corp	999462640	027-053-117	800-279-6100
*CT	CT Laboratories	157066030	07-053-117	608-356-2760
*DL	Daily Lab	NA	NA	309-691-4513
*ELA	E-LAB	NA	NA	616-399-6070
*ECS	ECCS	113289110		608-221-8700
*EHL	Environmental Health Labs	999766900	018-999-338	574-233-4777
*ERA	ERA Labs	999446800	027-137-152	218-727-6380
*NL	Northern Lake Service	721026460	NA	715-478-2777
*NSA	North Shore Analytical	399017190	027-137-389	218-729-4658
*PAC	PACE	999407970	027-053-137	612-607-1700
*SF	S-F Analytical	241249360	NA	414-475-6700
*SLH	State Lab of Hygiene	113133790	NA	800-442-4618
*STC	STL - Chicago	999580010	017-999-101	708-534-5200
*STS	STL - Savannah	999819810	NA	912-354-7858
*SUB	Any lab not on this sheet	NA	NA	NA
*TA	Test America	128053530	055-999-366	800-833-7036
*CQM	CQM	NA	NA	920-465-3911
*CTE	CT&E Environmental Services	999959180	NA	231-843-1877
*GLA	Great Lakes Analytical	99991716	NA	847-808-7766
*USF	US Filter/Enviroscan	737053130	055-999-302	715-359-7226

En Chem, Inc. Cooler Receipt Log

Batch No. 839544

Project Name or ID 3125 No. of Coolers: 1 Temps: ROI

A. Receipt Phase: Date cooler was opened: 10-6-03 **By:** AH

1: Were samples received on ice? (Must be ≤ 6 C)	(YES)	NO[2]	
2. Was there a Temperature Blank?	YES	(NO)	
3: Were custody seals present and intact? (Record on COC)	YES	(NO)	
4: Are COC documents present?	(YES)	NO[2]	
5: Does this Project require quick turn around analysis?	YES	(NO)	
6: Is there any sub-work?	YES	(NO)	
7: Are there any short hold time tests?	YES	(NO)	
8: Are any samples nearing expiration of hold-time? (Within 2 days)	YES[1]	(NO)	Contacted by/Who
9: Do any samples need to be Filtered or Preserved in the lab?	YES[1]	(NO)	Contacted by/Who

B. Check-in Phase: Date samples were Checked-in: 10-6-03 **By:** AH

1: Were all sample containers listed on the COC received and intact?	(YES)	NO[2]	NA
2: Sign the COC as received by En Chem. Completed	(YES)	NO	
3: Do sample labels match the COC?	(YES)	NO[2]	
4: Completed pH check on preserved samples.. *(This statement does not apply to water: VOC, O&G, TOC, DRO, Total Rec. Phenolics)*	YES	NO	(NA)
5: Do samples have correct chemical preservation? *(This statement does not apply to water: VOC, O&G, TOC, DRO, Total Rec. Phenolics)*	YES	NO[2]	(NA)
6: Are dissolved parameters field filtered?	YES	NO[2]	(NA)
7: Are sample volumes adequate for tests requested?	(YES)	NO[2]	
8: Are VOC samples free of bubbles >6mm	(YES)	NO[2]	NA
9: Enter samples into logbook. Completed	(YES)	NO	
10: Place laboratory sample number on all containers and COC. Completed	(YES)	NO	
11: Complete Laboratory Tracking Sheet (LTS). Completed	YES	NO	(NA)
12: Start Nonconformance form.	YES	NO	(NA)
13: Initiate Subcontracting procedure. Completed	YES	NO	(NA)
14: Check laboratory sample number on all containers and COC. CF	(YES)	NO	NA

Short Hold-time tests:

48 Hours or less	7 days	Footnotes
Coliform (6 hrs)	Flashpoint	1 Notify proper lab group immediately.
Hexavalent Chromium (24 Hrs)	TSS	
BOD	Total Solids	2 Complete nonconformance memo.
Nitrite or Nitrate	TDS	
Low Level Mercury	Sulfide	
Ortho Phosphorus	Free Liquids	
Turbidity	Total Volatile Solids	
Surfactants	Aqueous Extractable Organics- ALL	
Sulfite	Unpreserved VOC's	
En Core Preservation	Ash	
Color		

Rev. 4/11/03, Attachment to 1-REC-5.
Subject to QA Audit.

Reviewed by/date CW 10/7/3

p:/everyone/forms/samplereceiving/crl.doc

(Please Print Legibly)
Company Name: SIGMA ENVIRONMENTAL
Branch or Location: OAK CREEK, WI
Project Contact: MAFIZUL ISLAM
Telephone: 414-768-7144
Project Number: 3125
Project Name: GOOD HOPE LANDFILL
Project State: WISCONSIN
Sampled By (Print): TOM McCOY
PO #:

EN CHEM INC
...chemistry for the environment
1241 Bellevue St., Suite 9
Green Bay, WI 54302
920-469-2436
Fax 920-469-8827

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CHAIN OF CUSTODY

No 112736

Page 1 of 1
Quote #:
Mail Report To: MAFIZUL ISLAM
Company: SIGMA ENVIRONMENTAL
Address: 220 E. RYAN RD.
OAK CREEK, WI
Invoice To:
Company:
Address:
Mail Invoice To:

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options - (please circle if requested)
Sample Results Only (no QC)
EPA Level II (Subject to Surcharge)
EPA Level III (Subject to Surcharge)
EPA Level IV (Subject to Surcharge)

Regulatory Program: UST, RCRA, SDWA, NPDES, CERCLA

Matrix Codes: W=Water, S=Soil, A=Air, C=Charcoal, B=Biota, Sl=Sludge

LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	ANALYSES REQUESTED: VOC	METHANE	ETHANE	ETHENE	TOTAL # OF BOTTLES SENT	CLIENT COMMENTS
001	MPS: P-6	10/2/03	14:15	W	X	X	X	X	6	
002	MPS: P-7	10/2/03	14:45	W	X	X	X	X	6	
003	MW-11	10/2/03	15:10	W	X	X	X	X	6	
004	PZ-11	10/2/03	15:45	W	X	X	X	X	6	
005	DUPLICATE	10/2/03	-	W	X				3	
006	TRIP BLANK	-	-	W	X				2	

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LAB COMMENTS (Lab Use Only)
6) 40 ml vials
3) 40ml vials
2) 40ml vial + blk

Rush Turnaround Time Requested (TAT) - Prelim
(Rush TAT subject to approval/surcharge)
Date Needed:
Transmit Prelim Rush Results by (circle):
Phone Fax E-Mail
Phone #:
Fax #:
E-Mail Address:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	10/2/03 16:00	Bill Nolteneyer	10/3/03 1025
Bill Nolteneyer	10/3/03 1530	Bill Nolteneyer	10/6/03 0800
Bill Nolteneyer	10/6/03 1200	B Kempen	10/6/03 1500
		Annette Yanke	10-6-03 1500

En Chem Project No: 8295014
Sample Receipt Temp: 20°C
Sample Receipt pH (Wet/Metals): NA
Cooler Custody Seal: Present / Not Present
Intact / Not Intact

Version 4.0: 07/03

APPENDIX B

WELL CONSTRUCTION LOG FOR PRODUCTION WELL AT GRACELAND CEMETERY

file original in Sec. 23, copy in Sec. 26

WELL CONSTRUCTION REPORT
WISCONSIN STATE BOARD OF HEALTH
WELL DRILLING DIVISION

JAN 19 1940

Note: Section 32 of the Wisconsin Well Drilling Sanitary Code, having the force and effect of law, provides that within thirty days after completion of every well the driller shall submit a report covering all essential details of construction to the State Board of Health on a form provided by the Board.

Owner Louis Schoenbeck — Driller Robt Hackbarth

Street or RFD 1652 N Hopkins — Post Office 4218 Silver Sp. Milwaukee

Post Office Milwaukee Wis — Date 12/20/39 — Permit No. 126

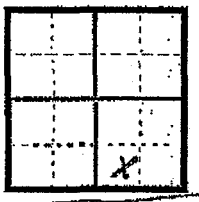
LOCATION OF PREMISES

Milwaukee (County) — Granville (Town)

Bucklee Sub
Describe further by subdivision, plat, district, lake, lot,

3 B west of Hopkins on Mill
block, nearest principal highway, etc., whichever apply.

The square below represents a section of land divided into 40 acre tracts. Mark the position of the premises in the section.



S½, SE,

Sec. 23

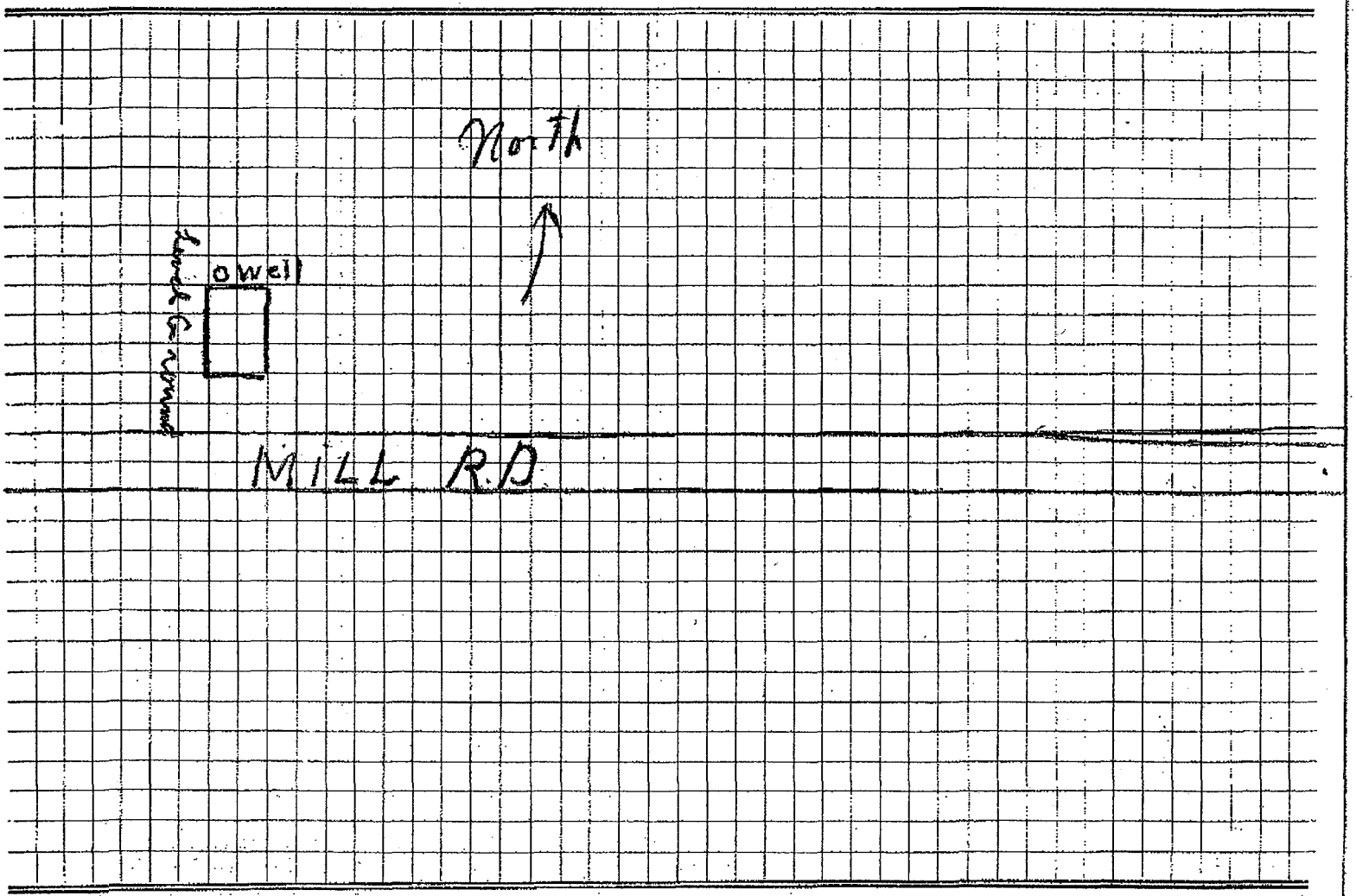
Twp. 8

Range 21 E W

or NW, NE, Sec. 26 ?

DIAGRAM OF PREMISES

See discussion and illustration in Part III Well Drilling Code. In making the diagram in the space below consider 10 ft. as the distance between lines. Be sure to indicate NORTH.



Additional copies of this form may be obtained in lots of 12 for 25¢. Send remittance with order to State Board of Health, Well Drilling Division, Madison, Wis.

19,541

WELL LOG *and* REPORT

In this column indicate the kind of casing, liner, shoe and other accessories used.

56' National Steel Well Pipe

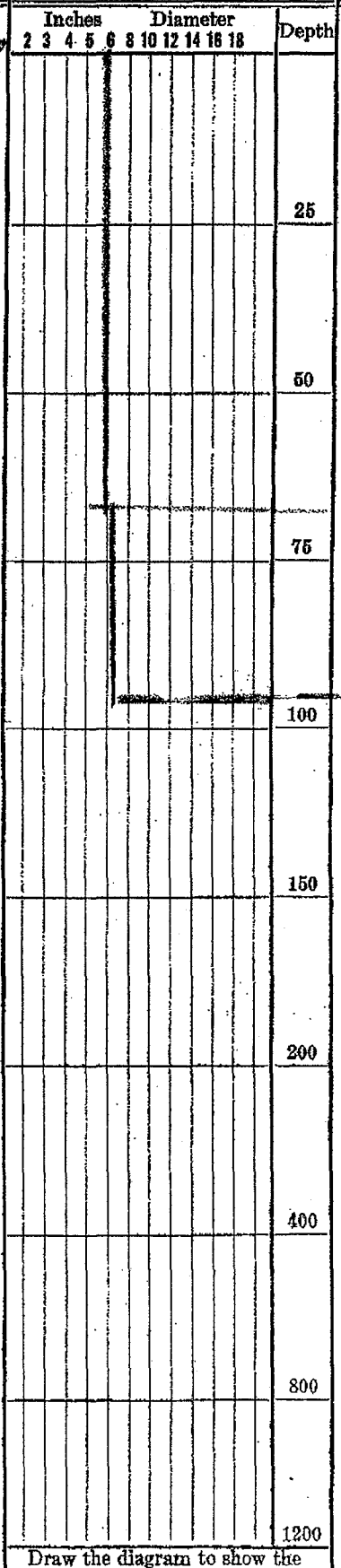
Koppered Forged Steel Shoe

Annular Space Filled with Drill cutting

pipe

Rock

WELL DIAGRAM
Use a red line to show casing or liner pipe. Use black for drill or borehole.



Draw the diagram to show the right half only

In this column state the kind of formations penetrated, their thickness in feet and if water bearing.

Stoney Clay

Blue Clay

Dry

56' pipe 6"

40 Rock

96'

Record of FINAL Pumping test

Duration of test
Hours 8

Pumping rate
G.P.M. 20

Depth of pump in well. Ft. 28

Standing water-level (from surface)
Ft. 18

Water-level when pumping Ft. 18

Water. End of test.
Clear X
Cloudy
Turbid

Was the well sterilized?
Yes X No

To which laboratory was sample sent?
Kenosha
Date 11/28

Was the well sealed on completion?
Yes X No

How high did you leave the casing-pipe above grade?
6"

Well was completed
Date 11/28

Well Driller
R Hackbarth
Signature

19,541-2