GROUNDWATER SAMPLING MEMORANDUM
STOUGHTON CITY LANDFILL
STOUGHTON, WISCONSIN

September 1998

Prepared For:

U.S. Environmental Protection Agency
Superfund Division
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

This document was prepared in accordance with U.S. EPA Contract No. 68-W7-0026, WESTON Region V RAC.

Work Assignment No.: 001-RARA-05T2 Document Control No.: RFW001-2A-AATZ

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25 September 1998

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Mr. Anthony Rutter (HSRW-6J)
U.S. Environmental Protection Agency
77 W. Jackson Blvd.
Chicago, IL 60604

U.S. EPA Contract No.:m 68-W7-0026
Work Assignment No.: 001-RARA-05T2
Document Control No.: RFW001-2A-AATZ
Re: Technical Memorandum/Groundwater Sampling Results

Dear Mr. Rutter:

Roy F. Weston, Inc. (WESTON®) is pleased to submit one copy of the Technical Memorandum for the Baseline Groundwater Sampling at Stoughton City Landfill.

If you should have any questions regarding this Technical Memorandum, please contact me at (847) 918-4042.

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SD HEADQUARTERS

Very truly yours,

ROY F. WESTON, INC.

William F. Karlovitz, P.E.
Site Manager

WFK:ieh

cc: Paul Kozol, WDNR
Pat Vogtman, U.S. EPA (cover letter)

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SECTION 1
INTRODUCTION

This memorandum presents the procedures and results of groundwater sampling conducted during the baseline groundwater monitoring (April 1998) at the Stoughton City Landfill (SCL) site in Stoughton, Wisconsin. Roy F. WESTON, Inc. (WESTON®) conducted the sampling in accordance with the Quality Assurance Project Plan Revision 1.

The objective of this sampling effort was to establish a baseline for site groundwater quality prior to the placement of the landfill cap. Prior to starting the field activities, WESTON prepared a Health and Safety Plan, Quality Assurance Project Plan (QAPP), and the Field Sampling Plan (FSP). The QAPP and FSP addendum were submitted to the United States Environmental Protection Agency (U.S. EPA) on 27 March 1998. The volatile organic compound analysis and metals analysis were scheduled through the U.S EPA Contract Laboratory Program (CLP) for routine analytical analysis. Due to the low detection limits for the three special volatile organic compounds (trichlorofluoromethane, dichlorodifluoromethane, and tetrahydrafuran) WESTON had to procure a lab to do a special analytical services request. WESTON procured the services of Chemtech, of Englewood, New Jersey to perform the special analysis.

The field procedures and groundwater sampling results are presented in Sections 2 and 3, respectively.

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SECTION 2

FIELD PROCEDURES

This section describes the field procedures for the baseline groundwater sampling.

2.1 GROUNDWATER MONITORING WELL SAMPLING

Monitoring wells were sampled using a submersible Grundfos pump. Sampling equipment was decontaminated pursuant to protocols described in Subsection 2.2. Samples were collected using the following methodology:

Upon removing the protective cap to the monitoring well riser, the head space was monitored with a HNu (photoionization detector).

- The depth to the water level in the well and the total depth of the well was measured with an electrical sounding device (accuracy ± 0.01 feet). The reference point for these depths was the top of the well riser pipe.
- The volume of standing water in the well was calculated. Volume of water in a 2-inch diameter well (gallons) = water depth (feet) x 0.16 (gallons/foot). For a 4-inch diameter well (gallons) = water depth (feet) x 0.65 (gallons/foot). For a 6-inch diameter well (gallons) = length (feet) x 1.47 (gallons/foot).
- A Grundfos pump was used for purging and sampling, and was decontaminated prior to being used in the well. Well purging was done with the pump intake just above or within the screened interval. The pump was not lowered as far into the couple of wells that are artesian and free flowing. Field measurements of pH, temperature, conductivity, dissolved oxygen, and turbidity were taken over time. Stabilization of these well purging parameters (±.25 units for pH, ±0.5C for temperature, ±10 percent for conductivity, ±0.1 mg/L for dissolved oxygen, and ±1unit for turbidity) indicated equilibrated conditions. Well purging continued until the turbidity decreased to 5 NTU or less, or until five purge volumes were removed.
- Samples were collected directly from the pump after the well purging was completed. Three samples were collected at each location. One sample was collected for target compound list volatile organic compounds (VOC). One sample was collected for special VOC analysis (trichlorofluoromethane, dichlorodifluoromethane, and tetrahydrafuran). Both the VOC samples and the special VOCs were prepreserved with hydrochloric acid. The final sample was collected for the total analyte list of metals. Unfiltered and filtered metals samples were collected at each location. The

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metal samples were filtered by connecting the pump discharge directly to a sterilized 0.45 micron disposable filter unit. The filtered metal samples were preserved with nitric acid within 15 minutes of sample collection. All samples were placed in a cooler on ice immediately following sample collection.

- The pH meter was not working on the first day of sample collection. Five monitoring wells were sampled on this day. The turbidity meter also stopped responding after the first two sample locations. The remaining field parameters were recorded to indicate equilibrated conditions.

Table 2-1 presents the sampling order, sampling date, and field parameters during monitoring well sampling.

A filtered metals sample could not be collected at MW7I due to a bend in the riser pipe approximately 8 inches from the top of the riser. The water was naturally flowing from this well but the back pressure was not enough for the water to pass through the in-line disposable 0.45 micron filter. The VOC, special VOC, and unfiltered metal samples were collected by putting a piece of decontaminated tubing (approximately two feet), down into the well and creating a suction so that water would flow.

2.2 DECONTAMINATION PROCEDURES

The submersible pump decontamination consisted of submerging the pump in a 5-gallon pail of tap water and detergent (alconox) solution. Tap water was obtained from a City of Stoughton water system connection located near the entrance to the Stoughton Landfill. Approximately 3 to 4 gallons of the alconox solution was pumped through the pump and tubing. This was followed by pumping approximately 3 to 4 gallons of deionized water through the pump and tubing. The pump casing was sprayed off using deionized water in a hand-held spray bottle. Alconox water solution followed by deionized water was poured over the outside of the tubing and the pump electrical cord.

2.3 MANAGEMENT OF INVESTIGATIVE DERIVED WASTE

Investigation derived wastes (IDWs) are defined as purge water and decontamination water generated during the groundwater sampling. Decontamination and purge water collected during

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW13I	4/21/98	Naturally flowing	10.2	7.57	226	1.5	1.15
			9.9	7.67	223	1.6	0.22
			10.0	7.69	227	1.7	0.03
MW13D	4/21/98	15	10.7	7.45	292	4.1	47.6
		30	10.7	7.33	281	3.9	120.2
		45	10.9	7.38	513	4.2	35.3
		60	10.5	7.33	503	3.6	18.2
		75	10.8	7.40	481	4.3	13.33
MW13S	4/21/98	2	9.8	7.70	218	3.0	414
		4	9.8	7.67	217	1.5	333
		6	9.5	7.66	342	1.3	342
		8	9.6	7.69	420	1.4	354
		10	9.9	7.69	408	1.5	802

Note: --- indicates that a measurement was not recorded due to a meter not functioning.

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Stoughton Landfill
Stoughton, Wisconsin

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW15I	4/15/98	7	10.2	---	410	2.6	3.10
		12	10.4	---	456	2.0	3.23
		17	9.9	---	450	2.6	3.20
		23	10.1	---	454	2.8	1.68
MW15D	4/15/98	13	9.9	---	536	4.0	3.86
		23	9.9	---	317	5.1	3.86
		28	10.3	---	301	7.4	1.28
		33	9.8	---	330	7.8	1.79
MW15S	4/15/98	3	7.3	---	475	3.5	---
		6	7.3	---	472	3.0	---
		12	7.3	---	432	3.2	---
MW7I	4/15/98	Naturally flowing	9.6	---	538	4.4	---
			9.5	---	470	8.0	---
			9.5	---	454	8.1	---
			9.4	---	530	8.5	---
MW7D	4/15/98	15	9.2	---	364	2.1	---
		30	9.3	---	252	2.5	---
		50	9.2	---	360	1.9	---
MW3S	4/17/98	2	6.9	7.23	420	8.2	19.55
		5	7.2	7.27	430	7.0	40.3
		7	7.2	7.31	340	6.4	47.3
		10	7.7	7.26	440	6.2	169.4

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW3D	4/17/98	10	9.7	7.57	584	1.4	37.2
		20	9.8	7.47	630	1.3	9.4
		30	9.8	7.43	640	1.1	2.89
		35	9.7	7.44	637	1.25	2.56
MW3B	4/17/98	15	10.1	7.27	335	3.04	0.11
		30	10.2	7.30	498	3.5	0.12
		35	10.1	7.32	509	3.5	0.02
		38	10.2	7.35	519	3.7	0.13
MW9I	4/17/98	7	10.2	7.42	282	1.5	10.2
		14	10.2	7.47	268	2.0	1.7
		21	10.0	7.50	250	1.8	0.42
MW9S	4/17/98	4.5	9.3	7.26	268	1.8	296
		10	10.1	7.41	487	2.0	165
		15	10.6	7.44	471	2.0	85.6
		20	10.8	7.45	488	2.0	41.9
		25	11.1	7.53	491	2.1	58.6
MW2D	4/17/98	5	10.6	7.71	319	2.2	64.9
		10	10.7	7.68	557	2.0	52.6
		15	10.6	7.65	559	1.2	40.2
		20	11.0	7.65	566	1.8	32.9
		25	10.7	7.63	565	1.9	19.0

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW2S	4/17/98	2	8.6	7.17	273	3.8	1.29
		4	8.6	7.27	212	3.08	2.09
		6	8.2	7.21	236	2.15	2.20
		8	8.6	7.19	275	1.9	2.28
MW12D	4/18/98	12	11.0	7.19	312	5.5	124.5
		25	11.3	7.38	287	5.0	39.1
		35	10.7	7.35	281	4.2	32.5
		45	11.2	7.41	316	4.1	12.97
		55	10.9	7.36	317	3.6	7.36
MW12I	4/18/98	9	10.9	7.57	414	3.0	13.91
		18	10.8	7.59	385	1.7	26.8
		27	11.3	7.65	416	2.0	8.8
		33	11.2	7.64	411	2.0	4.92
MW12S	4/18/98	2	8.9	6.79	891	1.5	74.5
		5	8.9	6.84	667	1.5	11.94
		7	9.0	6.84	799	1.3	7.03
		10	8.7	6.92	794	1.3	3.55
MW14D	4/18/98	15	11.7	7.27	583	3.7	40.4
		30	11.5	7.27	532	3.5	13.81
		45	12.4	7.41	562	4.0	5.32
		50	11.7	7.38	543	4.1	3.96

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW14I	4/18/98	8	11.6	7.34	277	1.7	1.89
		15	11.3	7.40	474	1.5	0.80
		20	11.8	7.39	501	1.0	0.55
		23	12.0	7.41	502	1.0	0.40
MW14S	4/18/98	3	11.1	7.44	389	1.7	7.22
		6	12.2	7.43	416	2.6	2.22
		9	12.8	7.47	383	2.5	1.99
MW11D	4/18/98	15	11.5	7.45	115	3.25	3.64
		30	11.0	7.48	98	3.5	8.47
		40	11.2	7.44	433	3.6	7.25
		50	10.9	7.35	450	3.7	567
		55	10.9	7.39	452	3.9	276
MW11I	4/18/98	8	10.7	7.38	502	3.1	2.07
		16	10.0	7.25	517	3.4	1.13
		22	10.2	7.34	477	3.9	0.43
MW11S	4/18/98	2	8.9	7.40	432	1.7	98.9
		5	8.8	7.44	333	2.0	98.3
		10	9.0	7.48	378	3.2	217
		12.5	8.7	7.45	356	2.8	1148
		15	8.7	7.44	358	3.2	395
		18	8.6	7.48	363	3.0	219

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW8I	4/19/98	45	1.5	6.79	403	1.7	3.21
		60	10.9	6.77	332	1.9	1.60
		77	10.9	6.86	330	1.8	0.80
		91	10.8	6.89	4.0	1.1	0.65
MW8B	4/19/98	15	11.3	7.61	356	2.95	4.21
		29	11.2	7.51	326	2.85	2.26
		44	10.9	7.51	306	2.55	0.90
MW8S	4/19/98	5	11.6	7.50	488	3.35	0.73
		10	12.3	7.42	315	3.48	0.41
		15	11.5	7.49	275	3.2	0.17
		20	11.2	7.48	342	3.4	0.18
MW06D	4/19/98	10	11.2	7.50	496	2.5	60.0
		20	11.3	7.58	364	3.0	13.92
		30	11.0	7.58	478	3.0	9.65
		40	10.7	7.53	481	3.0	6.96
		45	10.8	7.31	464	3.0	4.83
MW6S	4/19/98	3	8.6	7.24	226	1.2	54.9
		5	8.6	7.28	222	2.1	35.6
		8	9.0	7.30	225	2.5	40.0
		10	9.1	7.33	240	2.2	48.6
		12	9.4	7.35	225	2.3	49.5

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
EW01	4/19/98	Naturally flowing	9.9	7.36	305	2	4.26
			10.3	7.39	310	2.1	1.08
			9.8	7.42	360	1.9	0.95
MW1D	4/20/98	12	12.4	7.52	608	1.7	8.95
		24	12.6	7.46	638	1.8	27.8
		36	11.6	7.29	595	1.5	12.37
		48	11.6	7.26	626	1.3	9.78
		60	11.8	7.28	591	1.1	9.26
MW1S	4/20/98	2	9.8	6.87	178	2.7	12.04
		4	10.1	6.77	159	2.2	169.7
		6	9.8	6.73	153	2.0	128.1
		8	10.1	6.69	150	2.0	130.9
		10	10.0	6.65	133	2.0	124.4
MW4D	4/20/98	11	11.4	7.37	876	1.3	10.02
		22	11.2	7.42	461	1.0	3.41
		33	11.3	7.40	478	1.3	2.65
		37	11.2	7.35	470	1.25	2.60
MW4S	4/20/98	2.5	9.0	7.71	157	5.2	6.64
		5	8.6	7.68	241	5.8	16.05
		7.5	8.4	7.69	144	5.5	7.45
		10	8.4	7.65	144	5.9	4.68

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Table 2-1

Summary of Field Parameters
Baseline Groundwater Sampling
Stoughton Landfill
Stoughton, Wisconsin
(Continued)

Monitoring Well No.	Date of Sample	Purged Vol. (Gal)	Temperature	pH (units)	Conductivity microsiemens/cm (s/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW5D	4/20/98	13	11.1	7.38	342	1.3	32.2
		20	11.1	7.33	343	1.5	13.30
		30	11.0	7.34	348	1.4	9.25
		40	10.7	7.32	346	1.4	8.47
		50	10.4	7.34	339	1.4	5.20
MW5S	4/20/98	2	8.0	7.63	158	5.1	651
		4	8.0	7.63	163	6.0	204
		7	8.2	7.60	158	6.0	41.8
		10	8.1	7.56	162	6.0	14.36
		12	8.2	7.56	177	5.9	10.71
MW7S Purged dry twice	4/21/98	2	8.0	7.08	257	2.9	8.78
		3	8.5	7.46	263	3.0	280
MW10D	4/21/98	12	10.5	7.37	287	4.1	2.36
		15	10.6	7.36	287	3.45	0.52
		20	10.6	7.34	283	3.4	0.13
MW10I	4/21/98	6	10.8	7.26	319	2.0	0.52
		12	10.6	7.31	321	2.0	35.0
		18	10.8	7.26	321	2.0	4.99
MW10S Purged dry twice	4/21/98	2.5	9.4	7.30	254	1.2	277
		5	10.1	7.47	252	2.3	442

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sampling was stored in DOT-approved drums. Purge water from monitoring well clusters 12, 11, 6 and 1 was not containerized as these are background wells. In addition, water from wells that were naturally flowing (monitoring well clusters 7, 10, 12, 13 and EW01) was not containerized. Gallons of water from these wells are being released to the surface every day. Drums of purge and decon water from sampling locations that are below the Wisconsin PALs will be dumped on the ground. Drums will elevated levels of VOCs, special VOCs, or metals will be disposed of with the containment water generated as part of the landfill cap construction.

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SECTION 3

GROUNDWATER SAMPLING RESULTS

This section describes the baseline groundwater sampling results. The groundwater samples were analyzed for TCL VOCs, special VOCs (trichlorfluoromethane, dichlorofluoromethane, and tetrahydrafuran), and TAL metals (filtered and unfiltered). The TCL VOCs and TAL metals were analyzed through the U.S. EPA Contract Laboratory Program (CLP). VOCs were analyzed by American Analytical and Technical Services in Baton Rouge, Louisiana. Metals samples were analyzed by Sentinel, Inc., in Huntsville, Alabama. The special VOCs were analyzed by Chemtech in Englewood, New Jersey. Table 3-1 presents the VOC results. Table 3-2 presents the special SAS VOC results. Table 3-3 presents the metals results.

3.1 VOLATILE ORGANIC COMPOUND RESULTS

The baseline VOC results in shallow, intermediate, and deep monitoring wells are discussed below.

3.1.1 Shallow Monitoring Wells

There are 15 shallowing monitoring wells at the site. Tetrachloroethene was detected at 8 μg/L in monitoring well MW14S. This is below the contract required detection limit (CRDL). Total xylene was detected at 69 μg/L in monitoring well MW2S. There is no Preventative Action Level (PAL) or Enforcement Standard (ES) for xylene in water. No other VOCs were detected in the shallow monitoring wells.

3.1.2 Intermediate and Deep Monitoring Wells

There are 25 intermediate and deep monitoring wells that were sampled at the site. Monitoring well MW9B was not sampled due to damage incurred during the remedial investigation. Six VOCs were detected in the intermediate and deep monitoring wells. Detections of these compounds were all below the CRDL. 4-Methyl-2-pentanone was detected in MW7I and MW9I at concentrations ranging from 2 to 5 μg/L. 1,1 Dichloroethane was detected in MW9I at 3 μg/L. 1,2-Dichloroethene (total) was detected in MW10I, MW14I and EW01 at concentrations ranging from 2 to 5 μg/L.

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Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)

Sample Number:	MW01D	MW01S	MW02D	MW02S	MW03D	MW03B	MW03S	MW04D
EPA Number:	EXY43	EXY44	EXY13	EXY12	EXY14	EXY27	EXY15	EXY42
Sample Date:	4/20/98	4/20/98	4/17/98	4/17/98	4/17/98	4/17/98	4/17/98	4/20/98
PARAMETER								
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 UJ	10 U	10 UJ	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 UJ	10 U	10 UJ	10 U	10 U
Chloroform	10 U	10 U	10 U	10 UJ	10 U	10 UJ	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 UJ	10 U	10 UJ	10 U	10 U
2-Butanone	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	69	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
- Compound was detected.

Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW04S	MW05D	MW05S	MW06D	MW06S	MW07D	MW07I	MW07I-DP
EPA Number:	EXY45	EXY38	EXY39	EXY09	EXY08	EXY22	EXY19	EXY20
Sample Date:	4/20/98	4/20/98	4/20/98	4/19/98	4/19/98	4/15/98	4/15/98	4/15/98
PARAMETER								
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J
2-Hexanone	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
▒ - Compound was detected.

Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW07S	MW08B	MW08I	MWO8I-DP	MW08S	MW09I	MW09S	MW10D
EPA Number:	EXY21	EXY36	EXY34	EXY35	EXY37	EXY25	EXY24	EXY46
Sample Date:	4/21/98	4/19/98	4/19/98	4/19/98	4/19/98	4/17/98	4/17/98	4/20/98
PARAMETER								
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	3 J	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	5 J	10 U	10 U
2-Hexanone	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
[ ] - Compound was detected.

Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW10I	MW10S	MW11D	MW11I	MW11S	MW12D	MW12I	MW12I-DP
EPA Number:	EXY48	EXY49	EXY05	EXY06	EXY07	EXY04	EXY02	EXY03
Sample Date:	4/21/98	4/21/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98
PARAMETER								
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 U	10 U	24 U	23 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 UJ	10 UJ	10 U	10 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	3 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
▒ - Compound was detected.

Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW12S	MW13D	MW13D-DP	MW131	MW13S	MW14D	MW14I	MW14S
EPA Number:	EXY01	EXY50	EXY51	EXY52	EXY53	EXY31	EXY32	EXY33
Sample Date:	4/18/98	4/21/98	4/21/98	4/21/98	4/21/98	4/18/98	4/18/98	4/18/98
PARAMETER								
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	23 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	7 J	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	10 U	2 J	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	7 J	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	5 J	8 J
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
[ ] - Compound was detected.

Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW15D	MW15I	MW15S	MWEW01	FB01	FB02	FB03	FB04
EPA Number:	EXY18	EXY17	EXY16	EXY40	EXY10	EXY26	EXY30	EXY47
Sample Date:	4/15/98	4/15/98	4/15/98	4/19/98	4/15/98	4/17/98	4/19/98	4/21/98
PARAMETER								
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
▒ - Compound was detected.

Table 3-1

Monitoring Well Analytical Results
Volatile Organic Compound Analysis
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	TB01	TB02	TB03	TB04
EPA Number:	EXY11	EXY28	EXY29	EXY41
Sample Date:	4/15/98	4/17/98	4/18/98	4/20/98
PARAMETER				
Chloromethane	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 UJ	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 UJ	10 U	10 U
Chloroform	10 U	10 UJ	10 U	3 J
1,2-Dichloroethane	10 U	10 UJ	10 U	10 U
2-Butanone	10 UJ	10 UJ	10 UJ	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 UJ	10 U
2-Hexanone	10 UJ	10 UJ	10 UJ	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U

U - Compound was not detected.
J - Estimated value.
[ ] - Compound was detected.

Table 3-2

Monitoring Well Analytical Results
Special Volatiles
Stoughton, Wisconsin
(µg/L)

Sample Number:	MW01D	MW01S	MW02D	MW02S	MW03D	MW03B	MW03S	MW04D
EPA Number:	98ZG04S24	98ZG04S25	98ZG04S10	98ZG04S09	98ZG04S11	98ZG04S29	98ZG04S12	98ZG04S26
Sample Date:	4/20/98	4/20/98	4/17/98	4/17/98	4/17/98	4/17/98	4/17/98	4/20/98
PARAMETER								
Dichlorodifluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	10 U	10 U	10 U	1.6 J	310 D	1.4 J	10 U	10 U

U - Compound was not detected.
J - Estimated value.
▒ - Compound was detected.

Table 3-2

Monitoring Well Analytical Results
Special Volatiles
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW04S	MW05D	MW05S	MW06D	MW06S	MW07D	MW07I	MW07I-DP
EPA Number:	98ZG04S27	98ZG04S34	98ZG04S35	98ZG04S08	98ZG04S07	98ZG04S18	98ZG04S16	98ZG04D16
Sample Date:	4/20/98	4/20/98	4/20/98	4/19/98	4/19/98	4/15/98	4/15/98	4/15/98
PARAMETER								
Dichlorodifluoromethane	10 U	7.7 J	10 U	10 U	10 U	10 UJ	10 U	10 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U

U - Compound was not detected.
J - Estimated value.
[ ] - Compound was detected.

Table 3-2

Monitoring Well Analytical Results
Special Volatiles
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW07S	MW08B	MW08I	MWO8I-DP	MW08S	MW09I	MW09S	MW10D
EPA Number:	98ZG04S17	98ZG04S32	98ZG04S22	98ZG04D22	98ZG04S33	98ZG04S20	98ZG04S21	98ZG04S38
Sample Date:	4/21/98	4/19/98	4/19/98	4/19/98	4/19/98	4/17/98	4/17/98	4/20/98
PARAMETER								
Dichlorodifluoromethane	10 U	10 U	10 U	10 U	10 U	120	200 D	10 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	5.7 J	2.1 J	10 U
Tetrahydrofuran	10 U	1 J	20	21	10 U	3.2 J	14	10 U

U - Compound was not detected.
J - Estimated value.
[ ] - Compound was detected.

Table 3-2

Monitoring Well Analytical Results
Special Volatiles
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW10I	MW10S	MW11D	MW11I	MW11S	MW12D	MW12I	MW12I-DP
EPA Number:	98ZG04S39	98ZG04S40	98ZG04S04	98ZG04S05	98ZG04S06	98ZG04S03	98ZG04S02	98ZG04D02
Sample Date:	4/21/98	4/21/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98
PARAMETER								
Dichlorodifluoromethane	110 D	1.9 J	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	21	10 U	10 U	10 U	10 U	0.5 J	10 U	10 U

U - Compound was not detected.
J - Estimated value.
[ ] - Compound was detected.

Table 3-2

Monitoring Well Analytical Results
Special Volatiles
Stoughton, Wisconsin
(µg/L)
(Continued)

Sample Number:	MW12S	MW13D	MW13D-DP	MW131	MW13S	MW14D	MW14I	MW14S
EPA Number:	98ZG04S01	98ZG04S28	98ZG04D28	98ZG04SS36	98ZG04S37	98ZG04S30	98ZG04S31	98ZG04S19
Sample Date:	4/18/98	4/21/98	4/21/98	4/21/98	4/21/98	4/18/98	4/18/98	4/18/98
PARAMETER								
Dichlorodifluoromethane	10 U	10 U	10 U	1.8 J	10 U	10 U	160 D	120 D
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	6.8 J	50 UD
Tetrahydrofuran	10 UJ	10 U	10 U	22	10 U	2.5 J	5.5 J	50 UD

U - Compound was not detected.
J - Estimated value.
▒ - Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
~~(mg/L)~~ ug/L

Sample Number:	MW01DMSDUF	MW01DF	MW01SUF	MW01SF	MW02DUF	MW02DF	MW02SUF	MW02SF
EPA Number:	MEXH75	MEXH76	MEXH73	MEXH74	MEXH29	MEXH30	MEXH27	MEXH28
Sample Date:	4/20/98	4/20/98	4/20/98	4/20/98	4/17/98	4/17/98	4/17/98	4/17/98
PARAMETER								
Aluminum	64.6 J	33.2 J	994.13	94.2 J	60.2	69.5	90.5 J	46.4
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	4.33 J	3.1 U	6.7	5.9	3.1 U	3.4
Barium	69 J	67.6 J	74.45 B	64.85 B	93.3	91	118 J	118
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.5	0.3 U	1.32 J	0.843 J	0.3	0.8	0.3 U	0.3
Calcium	80000 J	79100 J	40268.32 J	39681.74 J	78000	75900	102000 J	107000
Chromium	1.1 J	0.9	3.41 J	0.6 U	0.6 U	0.8 J	0.6 U	0.6 U
Cobalt	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Copper	16.8	6.6 J	105.21 J	47.08 J	12.8	53.6	17.4 J	11.8
Iron	879 J	325 J	1824.05	220.96 J	2230	1160	7670	7480
Lead	15.3 J	12.4 J	54.03 J	37.49 J	24.3 J	63.7 J	11 J	22.6 J
Magnesium	49200	48700	17567.36 J	17097.54 J	48500	48000	37900 J	38900
Manganese	19 J	16.3 J	202.55	164.53	75.9	75.8	1060	1070
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	3.2	2	3.31 J	2.03 J	1.7 U	1.7 U	1.7 U	1.7 U
Potassium	2920 J	2900 J	1987.99 J	1815.69 J	1910	1880	7830 J	7570
Selenium	2.7	2 U	2 UJ	2.69 J	2 U	2 U	2 U	2 U
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	153000	151000	13704.26	13729.62	11400	10400	12900 J	12700
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	1.2	1.4	2.65 B	0.8 U	0.8 U	0.8 U	1.1	1.1
Zinc	13	38.1 J	46.37 J	41.37 J	11.9	29	8 J	14.2

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but greater than the IDL.
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW03DUF	MW03DF	MW03BUF	MW03BF	MW03SUF	MW03SF	MW04DUF	MW04DF
EPA Number:	MEXH31	MEXH32	MEXH47	MEXH48	MEXH33	MEXH34	MEXH79	MEXH80
Sample Date:	4/17/98	4/17/98	4/17/98	4/17/98	4/17/98	4/17/98	4/20/98	4/20/98
PARAMETER								
Aluminum	56.7	49.4	46.9	50.2	330	45.7	47.09 J	89.27 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	13.21 J	9.9 J
Barium	74.6	72.2	32.4	30.4	59.3	55.6	54.04 B	52.48 B
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	1	0.4	0.8	0.3 U	0.4	0.3 U	0.596 J	0.494 J
Calcium	91000	88900	80600	75400	66000	64200	110407.57 J	106134.46 J
Chromium	0.6 UJ	0.6 UJ	2.4 J	2.1 J	3.3 J	2.2 J	0.6 U	0.6 U
Cobalt	1.2 U	2.5	1.2 U	3.2	1.2 U	1.2 U	1.2 U	2.44 J
Copper	58.7	15.4	40.5	23.4	26.7	13.6	17.08 J	24.79 J
Iron	289	181	25.6 J	37.5 J	687	62.9 J	3928.61	3462.13
Lead	67.2 J	24.3 J	30.6 J	28.5 J	33.5 J	23.6 J	11.04 J	18.77 J
Magnesium	57500	55900	45100	42200	35300	34200	68754.31 J	66810.86 J
Manganese	1.14	1.15	2.7	10.6	53.3	3.2	48.84	35.55
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	2.9	3.4	1.7 U	1.7 U	1.7 U	1.7 U	1.7 J	1.7 J
Potassium	2010	1960	2380	1900	973	904	2198.54 J	2227.74 J
Selenium	2 U	2 U	2 U	2 U	2 U	2 U	2.19 J	2.11 J
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	14300	14000	8140	7700	27600	28700	19611.39	19473.41
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	0.8 U	0.8 U	0.8 U	1.8	0.8 U	0.8 U	0.8 U
Zinc	58.6	20.6	17	21.1	14.8	16.8	25.59 J	40.39 J

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW04SUF	MW04SF	MW05DUF	MW05DF	MW05SUF	MW05SF	MW06DUF	MW06DF
EPA Number:	MEXH77	MEXH78	MEXH67	MEXH68	MEXH69	MEXH70	MEXH19	MEXH20
Sample Date:	4/20/98	4/20/98	4/20/98	4/20/98	4/20/98	4/20/98	4/19/98	4/19/98
PARAMETER								
Aluminum	85.4 J	70.31 J	89.57 J	80.75 J	74.41 J	48.66 J	76.6 J	39.5 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	5.58 J	7.18 J	3.1 U	3.72 J	3.1 U	3.1 U
Barium	29.06 B	35.73 B	54.12 B	52.45 B	36.21 B	34.41 B	29 J	28 J
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.387 J	0.3 U	1.29 J	1.44 J	0.457 J	0.397 J	0.3 U	0.3 U
Calcium	41854.92 J	51951.59 J	65760.45 J	86189 J	52508.92 J	50828.91 J	67900 J	67400 J
Chromium	1.96 J	1.58 B	2.86 J	0.804 B	2.66 J	1.22 B	1.8	2
Cobalt	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Copper	21.29 J	18.92 J	120.29 J	81.75 J	17.06 J	20.36 J	6.8 J	25.8 J
Iron	94.85 J	35.31 J	884.45	173.09 J	101.22 J	46.87 J	259 J	33.4 J
Lead	20.88 J	21.77 J	42.77 J	81.45 J	10.17 J	33.55 J	7.5 J	21.5 J
Magnesium	19514.95 J	26158.06 J	58883.89 J	59404.57 J	26056.56 J	25461.21 J	41900	41800
Manganese	4.72 J	1.12 B	30.29	29.06	8.43 J	0.936 J	2.8 J	3.5 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	1.7 J	1.7 J	1.7 J	1.7 J	1.7 J	1.7 J	1.7 U	1.7 U
Potassium	809.39 J	517.2 J	4312.23 J	4348.04 J	510.99 J	492.98 J	1450 J	1460 J
Selenium	2 UJ	2 UJ	2 UJ	3.16 J	2 UJ	2 UJ	2 UJ	2 UJ
Silver	0.969 J	0.08 U	4.94 B	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	10278.49	9453.96	14893.04	15145.38	10050.17	9153.75	4570	4450
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	27.09 J	22.3 J	40.1 J	37.52 J	15.09 J	27.89 J	8.6 J	10.7 J

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW06SUF	MW06SF	MW07DUF	MW07DF	MW07DF-DP	MW07IUF	MW07IUF-DP	MW07SUF
EPA Number:	MEXH21	MEXH22	MEXH49	MEXH50	MEXH44	MEXH41	MEXH43	MEXH95
Sample Date:	4/19/98	4/19/98	4/15/98	4/15/98	4/15/98	4/15/98	4/15/98	4/21/98
PARAMETER								
Aluminum	253 J	14.9 U	69.8 J	67.6 J	84.8 J	61.5 J	85.2 J	5798.41
Antimony	3.1 U	3.1 U	3.1 R	3.1 R	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	3.1 R	3.1 R	3.1 U	3.1 U	3.1 U	9.3 J
Barium	56.6 J	52.3 J	24 J	24.3 J	25.5 J	35.4 J	38.5 J	111.15 B
Beryllium	0.1 U	0.1 U	0.1 R	0.1 R	0.1 U	0.1 U	0.1 U	0.398 J
Cadmium	0.3 U	0.3 U	0.3 R	0.3 R	0.3 U	1.2 J	1.2 J	1.61 J
Calcium	73500 J	69500 J	70400 J	70200 J	67100 J	73700 J	79400 J	126113.22 J
Chromium	3	0.8	0.6 R	0.6 R	0.6 U	2 J	1.9 J	216.19
Cobalt	1.2 U	1.2 U	1.2 R	1.2 R	1.7 J	1.2 U	1.2 U	14.15 B
Copper	14.6 J	4.9 J	11.5 J	21.7 J	29.5 J	163 J	144 J	126.7 J
Iron	373 J	31 J	136 J	32 J	35.9 J	68.8 J	42.6 J	14282.94
Lead	3.9 J	1.9 J	9.1 J	11.5 J	10.2 J	37.9 J	69.9 J	18.51 J
Magnesium	34500	32400	40700 J	40800 J	38800 J	41900 J	45100 J	68895.79 J
Manganese	20.1 J	0.7 J	9.1 J	8.9 J	15.7 J	8.4 J	13.2 J	1093.36
Mercury	0.21	0.2 U	0.2 R	0.2 R	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	4.1	1.7 U	1.7 R	1.7 R	1.9	1.7 U	1.7 U	204.62 J
Potassium	4340 J	4100 J	1300 J	1280 J	1270 J	1680 J	1770 J	2928.62 J
Selenium	2.1 J	2 UJ	2 R	2 R	2 U	2 U	2 U	2 UJ
Silver	0.8 U	0.8 U	0.8 R	0.8 R	0.8 U	0.8 U	0.8 U	0.977 J
Sodium	6460	6270	3370 J	3390 J	3410 J	10500 J	11100 J	6016.45
Thallium	4.6 U	4.6 U	4.6 R	4.6 R	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	0.8 U	0.9 J	0.8 R	0.9	0.8 U	0.8 U	25.2 B
Zinc	16.5 J	2.7 J	10.3 J	12.7 J	14.3 J	45.5 J	37.6 J	82.02 J

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW07SF	MW08BUF	MW08BF	MW08IUF	MWO8IF	MWO8IF-DP	MW08SUF	MW08SF
EPA Number:	MEXH51	MEXH63	MEXH64	MEXH60	MEXH61	MEXH62	MEXH65	MEXH66
Sample Date:	4/21/98	4/19/98	4/19/98	4/19/98	4/19/98	4/19/98	4/19/98	4/19/98
PARAMETER								
Aluminum	139.77 J	104 J	36.9 J	69 J	72.9 J	84.2 J	34.1 J	29.1 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.71 J	5.1 J	3.1 U	4.4 J	3.1 U	3.1 U	3.1 U	3.2
Barium	54.03 B	37.6 J	32.1 J	42.8 J	41.3 J	42.1 J	27.5 J	27 J
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	2.62 B	1.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.4
Calcium	80196.24 J	70000 J	64600 J	86400 J	83800 J	84500 J	69400 J	68900 J
Chromium	1.7 B	17.2	1 J	4	0.6 U	0.9	1.2 J	0.7
Cobalt	3.48 J	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Copper	246.6 J	140 J	4.6 J	12.1 J	18.2 J	30.6 J	6.9 J	16 J
Iron	97.9 J	257 J	61.9 J	72.4 J	37.6 J	40.6 J	117 J	32.1 J
Lead	57.5 J	42 J	5 J	3.7 J	9.3 J	17.1 J	14.4 J	23 J
Magnesium	44937.06 J	42500	39600	49700	48300	48800	39000	38600
Manganese	307.76	32.9 J	1.5 J	40.6 J	39.4 J	42.3 J	0.7 J	0.6 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	117.88 J	29.7	6	9.1	7.4	7.9	1.7 U	1.7 U
Potassium	1269.88 J	7060 J	6600 J	1680 J	1700 J	1670 J	740 J	738 J
Selenium	4.56 J	2 UJ	2 U	2 UJ	2.7 J	2 UJ	2 U	2 U
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	6389.17	9670	9260	10400	10200	10200	6440	6270
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	1.4 B	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	1	0.8 U
Zinc	44.25 J	40 J	8.3 J	4.6 J	8.1 J	11.7 J	13.3	15.2 J

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW09IUF	MW09IF	MW09SUF	MW09SDPUF	MW09SF	MW09SDPF	MW10DUF	MW10DF
EPA Number:	MEXH13	MEXH14	MEXH11	MEXH45	MEXH12	MEXH46	MEXH89	MEXH90
Sample Date:	4/17/98	4/17/98	4/17/98	4/17/98	4/17/98	4/17/98	4/20/98	4/20/98
PARAMETER								
Aluminum	58.5 J	79 J	228 J	129	51.8 J	44.1	85.36 J	94.19 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	3.1 U	4.1	3.1 U	3.1 U	3.1 U	5.2 J
Barium	29 J	27.6 J	29.7 J	28.8	29 J	27.5	33.13 B	33.86 B
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.3 U	0.6 J	0.3 U	0.9	0.3 U	0.3 U	1.79 J	0.493 J
Calcium	67300 J	64100 J	52700 J	53900	52300 J	52200	72490.59 J	75533.18 J
Chromium	0.6 U	0.6 U	2.4 J	2.1 U	0.7	0.6 U	1.72 J	1.49 B
Cobalt	2	4.4 J	3.8	4	3.7 J	5	1.2 U	1.2 U
Copper	26.8 J	65.7 J	25 J	47.7	29 J	7	109.84 J	25.02 J
Iron	224 J	119 J	234 J	272	125 J	59 J	32.93 J	37.18 J
Lead	22.4 J	34.2 J	21.2 J	27.6 J	21.7 J	6.5 J	43.58 J	17.35 J
Magnesium	43800 J	41300 J	48400 J	48000	49000 J	47000	40937.83 J	42568.93 J
Manganese	301	294	360	365	361	355	5.69 J	3.26 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	4	4.2	15.5	15.6	14.8	15.9	1.7 J	1.7 J
Potassium	1600 J	1520 J	1320 J	1220	1280 J	1180	1609.4 J	1717.07 J
Selenium	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 UJ
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	14000 J	13000 J	25000 J	24400	25800 J	24300	8317.31	8544.68
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	13.6 J	20.8 J	14.6 J	29.4	11.8 J	20	60.61 J	230.73

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW10IMSDUF	MW10IF	MW10SUF	MW10SF	MW11DUF	MW11DF	MW11I	MW11I
EPA Number:	MEXH91	MEXH92	MEXH94	MEXH93	MEXH09	MEXH10	MEXH23	MEXH24
Sample Date:	4/21/98	4/21/98	4/21/98	4/21/98	4/18/98	4/18/98	4/18/98	4/18/98
PARAMETER								
Aluminum	61.5	35.8	4610	36.6	67.6	36.6	53 J	14.9 U
Antimony	4.4	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.2	3.1 U	13.2	3.9	3.1 U	3.1 U	3.4 J	3.1 U
Barium	30.4 J	32.3 J	103 J	54.8 J	19.6	19.5	26.9 J	26.1 J
Beryllium	0.1 U	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	1	2.4	0.9	0.6	0.3	0.3 U	0.3 U	0.3 U
Calcium	82400 J	83800 J	115000 J	72000 J	64000	64100	77600 J	76800 J
Chromium	1.9	0.6 U	89.9	0.7	2.4 J	2.4 J	1.7	1.6
Cobalt	1.2 U	2.6	8.4	4	7.4	7.2	1.2 U	1.6
Copper	54.7	133 J	53.6	40.4 J	15.5	7	10.8 J	2.4 J
Iron	1620 J	37.5 J	8150 J	107 J	43.6 J	34 J	65.6 J	23.2 J
Lead	43.6 J	37 J	31.9 J	17.1 J	26.5 J	7.1 J	3.1 J	1.9 J
Magnesium	47700	48300	74800	44900	39000	39400	44400	44000
Manganese	47.4 J	33.3 J	534 J	266 J	10.3	9	1.6 J	4.8 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	6.4	5.6	71	5.9	1.7 U	1.7 U	1.7 U	1.7 U
Potassium	1340 J	1360 J	2770 J	877 J	1460	1490	1670 J	1610 J
Selenium	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	18200	18600	21500	19000	6820	6840	5150	5150
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	1.1	0.8 U	14.4	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	24 J	44.3 J	44.5	15.2 J	37.2	9.9	9.9 J	2.9 J

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
[ ]-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW11SUF	MW11SF	MW12DUF	MW12DF	MW12IUF	MW12IDPUF	MW12IF	MW12SMSDUF
EPA Number:	MEXH17	MEXH18	MEXH07	MEXH08	MEXH03	MEXH04	MEXH05	MEXH01
Sample Date:	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98
PARAMETER								
Aluminum	8030	85.9 J	104	392	40.4	60.1	39.7	68.2
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	6.6 J	4 J	3.1 U	3.1 U	5.4	5.3	6.5	19.5
Barium	69.3 J	24.9 J	36	37.7	100	101	99.7	119
Beryllium	0.4 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.5	0.3 U	1.6	1.2	0.3 U	0.7	0.3	0.6
Calcium	134000 J	73000 J	76400	73400	55500	54600	55100	93700
Chromium	52	1	2.8 J	2.6 J	1.4 J	0.6 U	0.6 U	0.7 J
Cobalt	7.8 J	2.4	1.2 U	1.8	1.2 U	1.2 U	1.2 U	11.7
Copper	62 J	32.3 J	102	67.7	7.2	44.8	10.5	13.1
Iron	12100	50.2 J	162	604	303	310	297	4360
Lead	26.1 J	6.5 J	100 J	66 J	9.6 J	20 J	19 J	29.7 J
Magnesium	83400	44400	43100	42600	38200	37600	37800	51300
Manganese	602 J	244 J	24.1	8	90	90.9	81.7	1890
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	47.8	3.3	1.7 U	2.3	1.7 U	1.7 U	1.7 U	11.2
Potassium	4020 J	1720 J	1750	2220	1710	1780	1750	216
Selenium	2 UJ	2.8 J	2 U	2 U	2 U	2 U	2 U	2 U
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	4930	4720	5370	5250	4420	4320	4320	79300
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.8 J
Vanadium	21.6	0.8 U	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	47.7 J	7.2 J	42.8	48.4	18.4	15.7	13.9	10.7

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW12SMSDDF	MW13DUF	MW13DUF-DP	MW13DF	MW13DF-DP	MW131UF	MW131F	MW13SUF
EPA Number:	MEXH02	MEXH81	MEXH82	MEXH83	MEXH84	MEXH85	MEXH86	MEXH87
Sample Date:	4/18/98	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98
PARAMETER								
Aluminum	59.3	109 J	101 J	44.8	35.2	18.2	35.2	1620
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	16.7	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.9
Barium	116	24.1 J	23.3 J	23.6 J	23 J	56.6 J	57.1 J	60.6 J
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	1.4	0.5	1.3	2.1	1	0.3	0.4	0.5
Calcium	92400	76400 J	73500 J	74100 J	73500 J	60300 J	60200 J	83900 J
Chromium	1.2 J	2.1	1.9	3.7	1.3	0.6 U	0.6 U	93
Cobalt	12.1	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.8
Copper	78.4	31.6	54.9	93.4 J	44.6 J	19.9	17.9 J	20.2
Iron	4220	289 J	178 J	58.5 J	29.6 J	277 J	219 J	3580 J
Lead	72.2 J	15.2 J	35.1 J	42.5 J	35.2 J	5.7 J	24.6 J	8.8 J
Magnesium	50400	43900	42100	42300	42100	39500	39600	54800
Manganese	1870	13.5 J	11.7 J	1.6 J	0.6 J	32.9 J	32.2 J	205 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	10.9	1.7 U	1.7 U	1.9	1.7 U	2	1.7 U	70.4
Potassium	157	1330 J	1250 J	1240 J	1260 J	1630 J	1640 J	2130 J
Selenium	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	77100	4890	4600	4680	4710	4100	4150	5000
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	0.8 U	0.8	0.8 U	0.8 U	0.8 U	0.8 U	7.9
Zinc	27.5	33	34.1	46.4 J	21.9 J	6.7	20.9 J	16.6

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW13SF	MW14DUF	MW14DF	MW14I	MW14I	MW14SUF	MW14SF	MW15DUF
EPA Number:	MEXH88	MEXH54	MEXH55	MEXH56	MEXH59	MEXH57	MEXH58	MEXH39
Sample Date:	4/21/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/18/98	4/15/98
PARAMETER								
Aluminum	45.6	88.1 J	28.8 J	84.9 J	14.9 U	81.2 J	81.6 J	104 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	3.1 U	3.6 J	5.8 J	3.1 U	3.5 J	3.1 U
Barium	43.7 J	37.8 J	35.5 J	67.5 J	37.4 J	37.4 J	64.5 J	40.2 J
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.5	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Calcium	58200 J	75800 J	73900 J	58600 J	55200 J	55800 J	57200 J	80500 J
Chromium	1	2.3	1	0.6 U	1.3	2	0.6 U	3.2 J
Cobalt	2.3	1.2 U	1.2 U	1.2 U	2.6	1.2 U	1.4	1.2 U
Copper	20.6 J	22.8 J	5 J	69.3 J	10.6 J	30.4 J	10 J	29.1 J
Iron	73.5 J	77.4 J	19.9 J	210 J	56.6 J	36.1 J	218 J	60.2 J
Lead	21.9 J	5.3 J	1.9 J	36.1 J	2.6 J	7.7 J	5.7 J	18.2 J
Magnesium	39700	43500	42300	46900	29800	30200 J	46400 J	46000 J
Manganese	15.9 J	6.8 J	1.4 J	359 J	53 J	48.3 J	328 J	3.9 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	20 U	0.2 U
Nickel	3.3	2	1.7 U	5	1.7 U	1.7 U	4.6	1.7 U
Potassium	1470 J	1660 J	1550 J	1670 J	734 J	790 J	1610 J	1900 J
Selenium	2 U	2 U	2 U	2.7 J	2 UJ	2 UJ	2.7 J	2 U
Silver	0.8 U	0.8 U	0.8 U	0.6 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	4920	8370	8130	14600	8570	8710 J	14400 J	12600 J
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	16.2 J	9.2 J	7.8 J	21.7 J	9.9 J	7.3 J	7.4 J	14.9 J

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	MW15DF	MW15IUF	MW15I	MW15SUF	MW15SF	MWEW01UF	MWEW01F	FB01UF
EPA Number:	MEXH40	MEXH37	MEXH38	MEXH35	MEXH36	MEXH71	MEXH72	MEXH25
Sample Date:	4/15/98	4/15/98	4/15/98	4/15/98	4/15/98	4/19/98	4/19/98	4/15/98
PARAMETER								
Aluminum	116 J	37.8 J	14.9 UJ	14.9 U	65.1 J	21.2 J	49.4 J	74.4 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Barium	37.8 J	28.6 J	27.2 J	57.8 J	58.6 J	28.9 J	31.1 J	1.6 J
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Calcium	76500 J	67700 J	65500 J	78500 J	80100 J	74900 J	79100 J	336 J
Chromium	2.1 J	3.7	2.6	1 J	0.8	0.6 U	0.6 U	0.6 U
Cobalt	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Copper	25.5 J	8 J	19.3 J	8.7 J	20.4 J	5.7	8.8 J	38.3
Iron	33.6 J	44.8 J	39.9 J	45.8 J	176 J	49 J	55.4 J	93.8 J
Lead	19.3 J	3.7 J	19 J	2 J	16 J	4.9 J	17.4 J	19.5 J
Magnesium	43300 J	39200 J	37900 J	44800 J	45500 J	46400	49200	109 J
Manganese	3 J	3.3 J	2.4 J	23.4 J	22.2 J	31 J	31 J	6.5
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	2.1	2.2	1.7 U	1.7 U	1.7 U	2.9	4.9	1.7 U
Potassium	1790 J	1210 J	1170 J	780 J	774 J	1810 J	1930 J	136 J
Selenium	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	11800 J	4460 J	4210 J	4490 J	4550 J	14500	15400	378 J
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	1.1	1.1	1.3	1.1	0.8 U	0.8 U	0.8 U
Zinc	50.1 J	6.6 J	12.1 J	4.5 J	14.2 J	30.7	16.4 J	13.6

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Table 3-3

Monitoring Well Analytical Results
Inorganics (Total Metals)
Stoughton, Wisconsin
(mg/L)
(Continued)

Sample Number:	FB01F	FB02UF	FB02F	FB03UF	FB03F	FB04UF	FB04F
EPA Number:	MEXH26	MEXH15	MEXH16	MEXH52	MEXH53	MEXH97	MEXH96
Sample Date:	4/15/98	4/17/98	4/17/98	4/19/98	4/19/98	4/21/98	4/21/98
PARAMETER							
Aluminum	72 J	14.9 U	14.9 U	64.7 J	55.1 J	42.97 J	59.95 J
Antimony	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Arsenic	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.82 J
Barium	1.2 J	0.7 J	0.8 J	1.1 J	0.8 J	1.27 J	1.09 J
Beryllium	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.806 J	0.3 U
Calcium	396 J	300 J	272 J	468 J	370 J	254.72 J	224.02 J
Chromium	0.6 U	0.6	0.6 U	0.6 U	0.6 U	1.06 B	0.6 U
Cobalt	1.5	1.2 U	1.2 U	1.8	1.2 U	1.2 U	1.23 B
Copper	18.8	2.4 J	7	6.6 J	18.7 J	54.89 J	6.42 J
Iron	35.9 J	114 J	119 J	83.4 J	20.1 J	33.16 J	22.69 J
Lead	13.3 J	1.9 J	1.9 J	6.6 J	17.4 J	42.24 J	9.12 J
Magnesium	128 J	115 J	93 J	152 J	121 J	75.82 J	78.09 J
Manganese	7.6	1 J	3.9	5.9 J	1.2 J	2.64 B	5.51 B
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 J	1.7 J
Potassium	113 J	72.6 J	64 J	107 J	91.3 J	146.83 J	120.28 J
Selenium	2 U	2 U	2 U	2.2 J	2 UJ	2.96 J	2.49 J
Silver	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sodium	425 J	149 J	146 J	239 J	240 J	244.72 B	239.61 B
Thallium	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Vanadium	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	11.4	5.2	8	9.9	10.9	33.62	17.36 B

U - Compound was not detected.
J - Estimated value.
B -Reported value is less than the CRDL but gre
-Compound was detected.

Trichloroethene was detected in MW10I and MW14I at concentrations ranging from 2 to 7 μg/L. Tetrachloroethene was detected in MW10I and MW14I at concentrations ranging from 3 to 5 μg/L. Acetone was detected in MW14I at 7 μg/L.

3.1.3 Summary of VOC Results

Total xylene is the only compound that was detected above the CRDL. There is no PAL or ES for xylene in water.

3.2 SPECIAL VOLATILE ORGANIC COMPOUNDS

The baseline special VOC (trichlorofluormethane, dichlorodifluoromethane, and tetrahydrafuran) results in shallow, intermediate, and deep monitoring wells are discussed below. The PAL for trichlorofluoromethane (TCFM), dichlorodifluoromethane (DCDFM), and tetrahyrafuran (THF) are 698 μg/L, 200 μg/L, and 10 μg/L, respectively. The ES for TCFM, DCDFM, and THF, are 3,490, 1000, and 50 μg/L, respectively.

3.2.1 Shallow Monitoring Wells

The 15 shallow monitoring wells were all analyzed for the three special VOCs. TCFM was only detected in MW9S. It was detected below the CRDL at 2.1 μg/L.

DCDFM was detected in three monitoring wells (MW9S, MW10S, and MW14S). It was reported below the CRDL in MW10S. Concentrations found in MW9S and MW14S were 200 μg/L and 120 μg/L, respectively. The concentration in MW9S meets the PAL of 200 μg/L. Figure 3-1 shows the areal extent of DCDFM contamination in groundwater.

THF was detected in two monitoring wells,(MW2S and MW9S). Concentrations were reported below the CRDL in MW2S. The concentration in MW9S was 14 μg/L which exceeds the PAL of 10 μg/L. Figure 3-2 shows the areal extent of THF contamination in groundwater.

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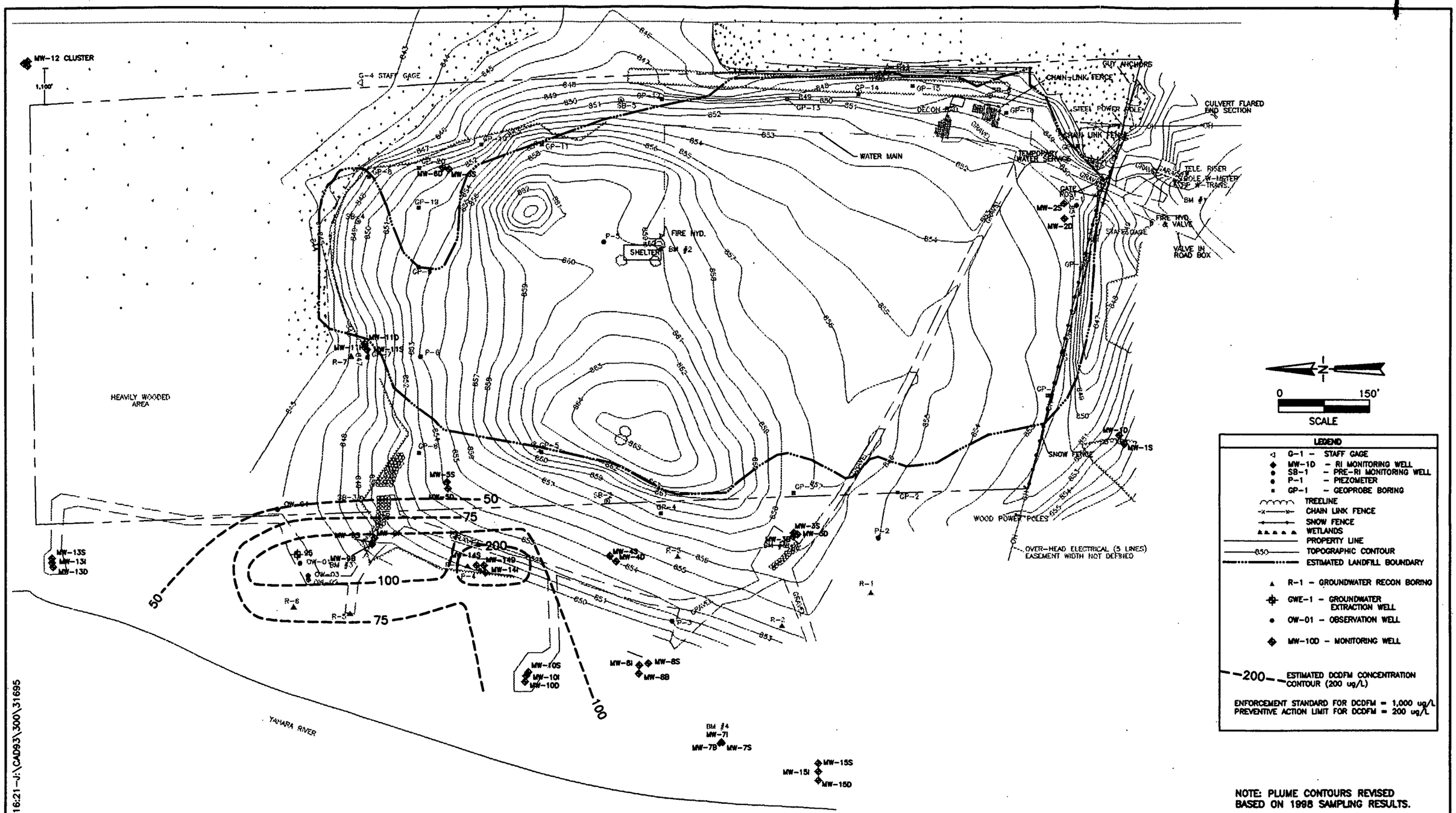


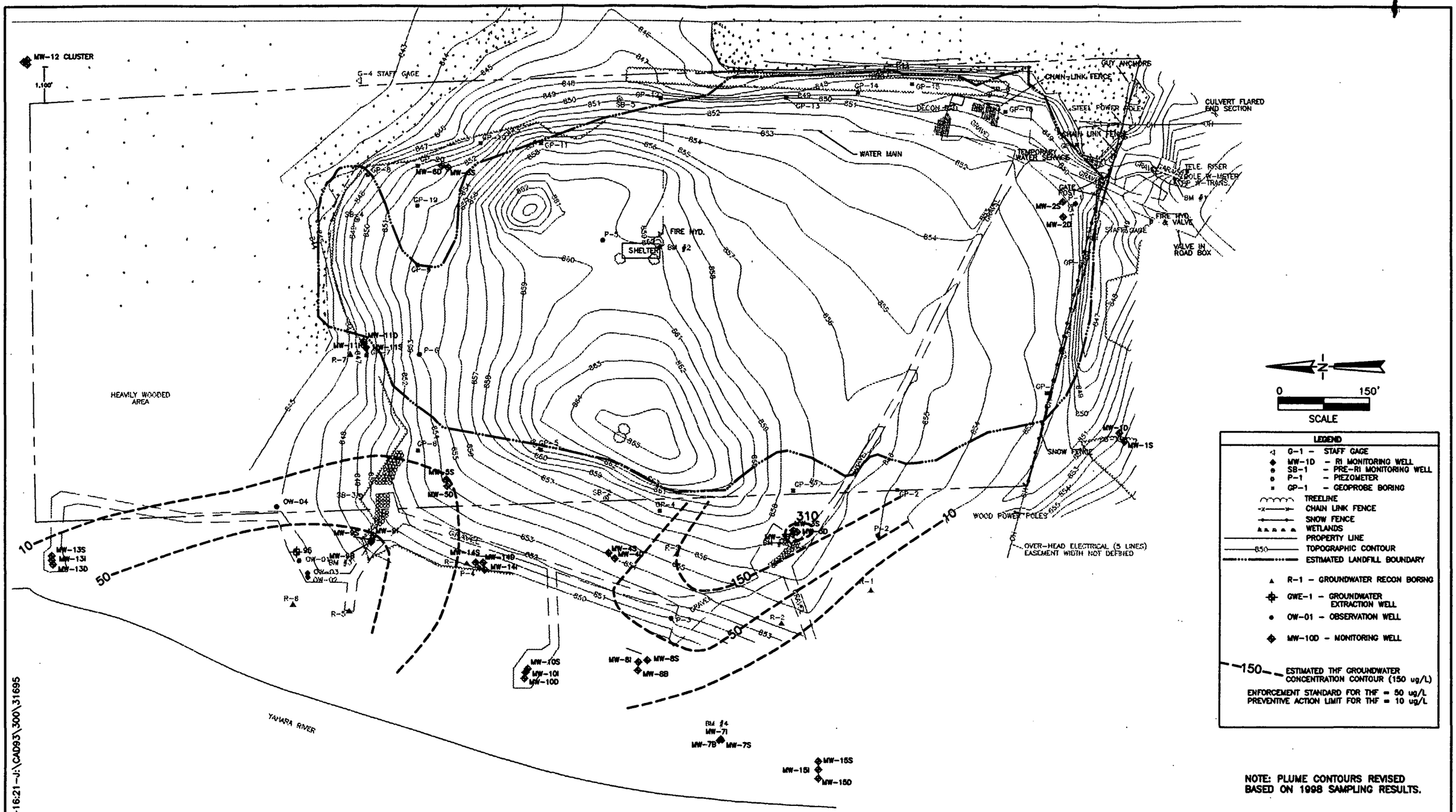
NOTE: PLUME CONTOURS REVISED BASED ON 1998 SAMPLING RESULTS.

HERNANDO—09/24/98—16:21—J:\CAD93\300\31695

FIGURE 3-1

RESPONSE ACTION CONTRACT
U.S. EPA CONTRACT No. 68-W7-0026
WORK ASSIGNMENT No. 001-RARA-05T2
DOCUMENT CONTROL No. 11821-001-2A-AATZ

AREAL EXTENT OF DCDFM CONTAMINATION IN THE GROUNDWATER
STOUGHTON CITY LANDFILL
Stoughton, Wisconsin



NOTE: PLUME CONTOURS REVISED BASED ON 1998 SAMPLING RESULTS.

FIGURE 3-2

RESPONSE ACTION CONTRACT
U.S. EPA CONTRACT No. 68-W7-0026
WORK ASSIGNMENT No. 001-RARA-05T2
DOCUMENT CONTROL No. 11821-001-2A-AATZ

AREAL EXTENT OF THF CONTAMINATION IN THE GROUNDWATER
STOUGHTON CITY LANDFILL
Stoughton, Wisconsin

HERNANDO-09/24/98-16:21-J:\CAD93\300\31695

3.2.2 Intermediate and Deep Monitoring Wells

There are 25 intermediate and deep monitoring wells that were sampled at the site. Monitoring well MW9B was not sampled due to damage incurred during the remedial investigation. TCFM was detected in three monitoring wells (MW9I, MW14I, and EW01). Concentrations in all three wells were below the CRDL.

DCDFM was detected in six monitoring wells (MW05D, MW9I, MW10I, MW13I, MW14I, and EW01). Concentrations were below the CRDL in MW5D and MW13I. Concentrations in MW9I, MW10I, MW14I, and EW01 ranged from 95 to 160 μg/L. Concentrations in all six monitoring wells were below the PAL.

THF was detected in 11 monitoring wells (MW3D, MW3B, MW8B, MW8I, MW9I, MW10I, MW12D, MW13I, MW14D, MW14I and EW01). Concentrations were below the CRDL in MW3B, MW8B, MW9I, MW12D, MW14D, and MW14I. Concentrations in MW3D, MW8I, MW10I, MW13I and EW01 ranged from 20 to 310 μg/L. Concentrations in these 5 wells exceeded the PAL. Figure 3-2 shows the areal extent of tetrahydrafuran contamination in groundwater.

3.2.3 Summary of Special VOCs

The ES for TCFM and DCDFM, was not exceeded in any of the wells during the April 1998 sampling round. THF was detected above the ES in monitoring wells MW3D (310 μg/L), and EW01 (58 μg/L). In the 1996 sampling effort, THF was detected about the ES in monitoring wells MW3D (240 μg/L), MW8I (120 μg/L), and EW01 (67 μg/L). During the 1998 sampling round, THF was detected above the PAL but below the ES in MW8I (20 μg/L). The concentrations are similar between 1996 and 1998 for MW3D and lower in 1998 for MW8I and EW01. There were no wells during the 1998 sampling round which for the first time exceeded the PAL or ES.

3.3 METALS

The target analyte list (TAL) of metals was collected at each of the monitoring wells. An unfiltered and filtered metal sample was collected at each monitoring well location with the exception of

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MW7I.. A filtered metal sample could not be collected at MW7I due to a bend in the riser that did not allow the pump to be lowered down the well. A piece of tubing was lowered into MW7I and allowed water to flow through the tubing; however, the pressure was not enough to collect the filtered metal portion of the sample.

Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc all have a PAL and an ES associated with them. The metals results from the baseline sampling are discussed below.

3.3.1 Shallow Monitoring Wells

The shallow monitoring well discussion presents only those results that meet or exceed the PAL or ES. Monitoring wells MW7S, MW11S, and MW12S contained arsenic ranging from 6.6 to 19.5 μg/L in the unfiltered samples. These concentrations exceeded the arsenic PAL of 5. The MW12S filtered sample(16.7μg/L) also exceeded the PAL. Monitoring well MW11S detected beryllium at the PAL of 0.4 μg/L in the unfiltered sample. Monitoring wells MW7S, MW9S, MW10S, MW11S, MW12S, and MW13S had cadmium concentrations ranging from 0.4 to 1.61 μg/L in the unfiltered samples. The PAL for cadmium is 0.5. MW7S, MW10S, MW12S, and MW13S also had cadmium concentrations (0.5 to 2.6 μg/L)that exceeded the PAL for the filtered samples. Monitoring wells MW7S, MW11S, and MW13S had chromium concentrations ranging from 52 to 216 μg/L in the unfiltered samples. The PAL for chromium is 10 and the ES is 100. The chromium level in MW7S also exceeded the ES. The copper PAL of 130 was exceeded in the MW07S filtered sample (246.6 μg/L). Lead was detected above the PAL of 1.5 in every shallow monitoring well. It exceeded the ES of 15 in the following unfiltered samples: MW01S, MW03S, MW07S, MW09S, MW10S, MW11S, and MW12S. Lead also exceeded the ES in the following filtered samples: MW01S, MW02S, MW03S, MW07S, MW08S, MW09S, MW10S, MW12S, MW13S, and MW15S. Mercury exceeded the PAL of 0.2 in the unfiltered sample at MW06S (0.21μg/L). MW07S, MW11S, and MW13S had nickel concentrations ranging from 47.8 to 204.62 μg/L in the unfiltered samples. The PAL for nickel is 20 and the ES is 100. The unfiltered sample for MW07S (117.88

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μg/L) and the filtered sample (204.62 μg/L), both exceeded the ES for nickel. The thallium concentration in the unfiltered sample (4.8 μg/L) at MW12S exceeds the PAL of 0.4.

3.3.2 Intermediate and Deep Monitoring Wells

The deep monitoring well results discussion presents only those results that meet or exceed the PAL or ES. Antimony was detected in the unfiltered sample at monitoring well MW10I at a concentration of 4.4 μg/L. This exceeds the 1.2 μg/L PAL for antimony. Monitoring wells MW02D, MW04D, MW05D, MW08B, and MW12I, had arsenic concentrations ranging from 5.58 to 13.21 μg/L in the unfiltered samples. Monitoring wells MW2D, MW4D, MW5D, MW10D, MW12I, and MW14I had arsenic concentrations ranging from 5.2to 9.9 μg/L in the filtered samples. The above arsenic concentrations exceeded the PAL but none exceeded the ES. Unfiltered cadmium results exceeded the PAL for the following locations: MW1D, MMW3D, MW4D, MW5D, MW7I, MW8B, MW10D, MW12I, and MW13D. Cadmium concentrations ranged from 0.5 to 2.1 μg/L. Filtered cadmium results exceeded the PAL for the following locations: MW2D, MW5D, MW9I, MW12D, and MW13D. Cadmium concentrations in the filtered samples ranged from 0.6 to 2.4 μg/L. The unfiltered chromium result for MW8B (17.2 μg/L) exceeded the PAL of 10. Unfiltered lead results exceeded the PAL for all of the unfiltered and filtered sample locations. Lead exceeded the ES in the following unfiltered samples: MW1D, MW2D, MW3D, MW3B, MW5D, MW7I, MW8B, MW9I, MW10D, MW11D, MW12D, MW13D, MW14I and MW15D. Lead exceeded the ES in the following filtered samples: MW2D, MW3D, MW3B, MW4D, MW5D, MW6D, MW9I, MW10D, MW10I, MW12D, MW12I, MW13D, MW13I, MW15D, and MW15I. Nickel exceeded the PAL in the unfiltered sample at MW8B (29.7 μg/L).

3.3.3 Summary of Metals Results

Arsenic, cadmium, chromium, lead, and nickel were the analytes that were most frequently detected above the PAL in the shallow, intermediate, and deep wells. Chromium and nickel were detected above the ES in MW07S. This well had very little water in it and was purged dry twice. The sediments in the bottom of the well were disturbed during purging and sampling due to the low volume of water in the well, the slow recharge, and the high pressure required to lift the water out

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of the well. Therefore, the results from MW07S are not typical of overall site conditions. Lead was detected above the ES in the majority of the wells including the upgradient monitoring wells MW12S, MW12I, and MW12D. In most cases, the concentrations were less in the filtered samples than in the unfiltered samples.

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