

DAHL

& ASSOCIATES, INC.

Environmental Compliance Management Systems

November 2, 1995

Ms. Cathy Malave
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

RECEIVED

NOV 17 1995

MPCA, HAZARDOUS
WASTE DIVISION

RE: Fact Sheets 7 & 11, Conoco Store #23034, 1126 South Robert, West St. Paul,
Minnesota LEAK#00000858

Dear Ms. Malave:

Enclosed are Site Monitoring and CAD System Monitoring Worksheets, for the above referenced site. The data included in these worksheets bring to date all data collected by DAHL at the site.

If I can provide you with any additional information or if you have any questions, please contact Mike Watson or me at our office.

Sincerely,

DAHL & ASSOCIATES, INC.



Mark Smith
Staff Scientist

MPS

enclosures

cc: Mr. Jeff Smail, Conoco Inc.
Mr. John Ehret, Asst. Fire Chief, City of West St. Paul
Mr. Terry Maruska, Building Inspector, City of West St. Paul

U:\USERS\PROJECTS\SAMFILES\0601\MPCA003.SAM



SITE MONITORING WORKSHEET
Fact Sheet #7
Minnesota Pollution Control Agency
LUST Cleanup Program
April 1993

The Minnesota Pollution Control Agency (MPCA) staff expect this worksheet to simplify the required post-investigation site monitoring reports. Submit this worksheet:

- * quarterly, after the remedial investigation (RI) is complete but before corrective action is taken;
- * quarterly, during corrective action design (CAD) installation; and
- * quarterly, after CAD is operational, along with "CAD System Monitoring Worksheet," (fact sheet #11).

Completion and submittal according to the above schedule fulfills your quarterly site monitoring report requirements. You may include a short cover letter whenever circumstances require. However, you must still submit an annual progress report as described in "Petroleum Tank Release Reports" (fact sheet #3). [NOTE: MPCA staff may reduce the frequency of progress reporting on a site specific basis.]

Where attachments are requested (tables, maps, graphs, etc.), please check off those items attached. The only table not mandatory is that for dissolved oxygen.

MPCA Leak Number: 858

I. Ground Water Monitoring

Please attach the following:

- | | |
|-----------------|---|
| Table 1 | Cumulative table of ground water monitoring results, including all sample blanks. |
| X | Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody. |
| Table 2 | Cumulative table of ground water elevation and product thickness results. |
| X | Hydrograph for all monitoring and recovery wells. |
| X | Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells. |
| X | Ground water contour map based on the most recent ground water elevation data. |
| Table 10 | Table of dissolved oxygen sample results (if collected) |

Please describe unusual circumstances that may have influenced the sampling results:

Please detail significant observations made at the site:

II. Vapor Impact Monitoring

If vapor impacts were detected during the remedial investigation, please attach:

a cumulative table of vapor monitoring results. The table should identify the location of all vapor monitoring points (i.e., sewer manholes, basements, etc.)
a map of vapor monitoring locations.

Sampling instrument used:

Sampling method:

NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the MPCA spills unit at voice 612/297-8610, TDD 612/297-5353 or Greater Minnesota TDD 1-800-627-3529.

Vapor mitigation is required.

III. Recommendations

Use this space to detail any recommendations for modifying the current monitoring schedule:

DAHL will continue the present schedule of monitoring.

TABLE 1

GROUNDWATER ANALYTICAL DATA
Conoco Store # 23034
 1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	DATE	B	E	T	X	THG/GRO	MTBE
MW-1	05/03/90	ND	ND	ND	ND	ND	ND
	09/10/90	ND	ND	ND	ND	ND	ND
	03/13/91	ND	ND	ND	ND	ND	ND
	09/09/91	ND	ND	ND	ND	ND	ND
	12/26/91	ND	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND	ND
	06/12/92	ND	ND	ND	ND	ND	ND
	09/10/92	ND	ND	ND	ND	ND	ND
	12/23/92	ND	ND	ND	ND	ND	ND
	03/09/93	ND	ND	ND	ND	ND	ND
	06/10/93	ND	ND	ND	ND	ND	ND
	09/17/93	ND	ND	ND	ND	ND	ND
	12/21/93	ND	ND	ND	ND	ND	ND
	03/21/94	ND	ND	ND	ND	ND	ND
	06/30/94	ND	ND	ND	ND	ND	ND
	08/31/94	ND	ND	ND	ND	ND	ND
	12/27/94	ND	ND	ND	ND	36	ND
	03/09/95	ND	ND	ND	ND	ND	ND
06/20/95	ND	ND	ND	ND	ND	ND	
09/21/95	ND	ND	ND	ND	ND	ND	
MW-2	05/03/90	6600	4	12	6900	27000	1600
	09/10/90	7300	950	17000	9600	48000	1600
	03/13/91	8200	1200	13000	10000	68000	3000
	09/09/91	8500	1300	9300	10000	48000	3000
	12/26/91	3800	1200	1100	4400	23000	ND
	03/13/92	2100	800	1200	2300	11000	ND
	06/12/92	2500	1100	1000	2600	17000	220
	09/10/92	4200	1300	1400	3100	19000	ND
	12/23/92	5800	1500	2800	4000	27000	ND
	03/09/93	5300	1300	3800	4500	21000	ND
	06/10/93	240	ND	120	230	1200	ND
	09/17/93	210	250	ND	370	3100	ND
	12/21/93	4100	1500	360	1900	15000	ND
	03/21/94	5300	1800	2800	4800	29000	270
	06/30/94	5700	1800	3700	6500	31000	200
	08/31/94	2700	630	1900	3400	15000	ND
	12/27/94	42	8	31	67	400	ND
	03/09/95	550	160	210	610	2700	ND
06/20/95	170	59	240	480	1800	ND	
09/21/95	7	5.7	7.3	23	120	ND	
MW-3	05/03/90						
	09/10/90	9700	2000	23000	16000	82000	1500
	03/13/91	9200	3900	23000	26000	110000	2600

TABLE 1

GROUNDWATER ANALYTICAL DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	DATE	B	E	T	X	THG/GRO	MTBE
MW-3	09/09/91	11000	3000	22000	20000	79000	4900
	12/26/91	7700	2300	10000	14000	77000	1600
	03/13/92	10000	2800	17000	15000	64000	ND
	06/12/92	8100	2500	16000	14000	72000	290
	09/10/92	9800	ND	22000	17000	75000	ND
	12/23/92	8100	2700	16000	15000	82000	ND
	03/09/93	6500	3000	20000	17000	74000	ND
	06/10/93	6400	2700	11000	13000	52000	ND
	09/17/93	4300	2200	14000	11000	40000	ND
	12/21/93	5900	3100	20000	16000	64000	ND
	03/21/94	9700	3500	24000	18000	79000	ND
	06/30/94 *	5600	2600	14000	14000	57000	ND
	08/31/94	3100	1800	3100	7900	28000	ND
	12/27/94	ND	ND	ND	ND	ND	ND
	03/09/95	3100	3000	1000	11000	53000	ND
	06/20/95	2000	3100	230	9300	43000	ND
09/21/95	3140	2810	509	6490	38000	ND	
MW-4	05/03/90	ND	ND	ND	2	41	ND
	09/10/90	ND	ND	ND	ND	19	ND
	03/13/91	ND	ND	ND	1	40	ND
	09/09/91	ND	ND	ND	ND	ND	16
	12/26/91	ND	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND	ND
	06/12/92	ND	ND	ND	ND	ND	ND
	09/10/92	ND	ND	ND	ND	ND	ND
	12/23/92	ND	ND	ND	ND	ND	ND
	03/09/93	ND	ND	ND	ND	ND	ND
	06/10/93	ND	ND	ND	ND	ND	ND
	09/17/93	ND	ND	ND	ND	ND	ND
	12/21/93	ND	ND	ND	ND	ND	ND
	03/21/94	ND	ND	ND	ND	ND	ND
	06/30/94	ND	ND	ND	ND	ND	ND
	08/31/94	ND	ND	ND	ND	ND	ND
12/27/94	ND	ND	ND	ND	ND	ND	
03/09/95	ND	ND	ND	ND	ND	ND	
06/20/95	ND	ND	ND	ND	ND	ND	
09/21/95	ND	ND	ND	ND	ND	ND	
MW-5	12/23/92	ND	ND	ND	ND	ND	ND
	03/09/93	ND	ND	ND	ND	ND	ND
	06/10/93	ND	ND	ND	ND	ND	ND
	09/17/93	ND	ND	ND	ND	ND	ND
	12/21/93	ND	ND	ND	ND	ND	ND
	03/21/94	ND	ND	ND	ND	60	ND

TABLE 1

GROUNDWATER ANALYTICAL DATA
Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	DATE	B	E	T	X	THG/GRO	MTBE
	06/30/94	ND	ND	ND	ND	47	ND
	08/31/94	ND	ND	ND	ND	ND	ND
	12/27/94	ND	ND	ND	ND	56	ND
	03/09/95	ND	ND	ND	ND	ND	ND
	06/20/95	ND	ND	ND	ND	ND	ND
	09/21/95	ND	ND	ND	ND	ND	ND

Explanation:

B=benzene

E=ethyl benzene

T=toluene

X=total xylenes

THG=total hydrocarbons as gasoline

MTBE=methyl-tert-butyl-ether

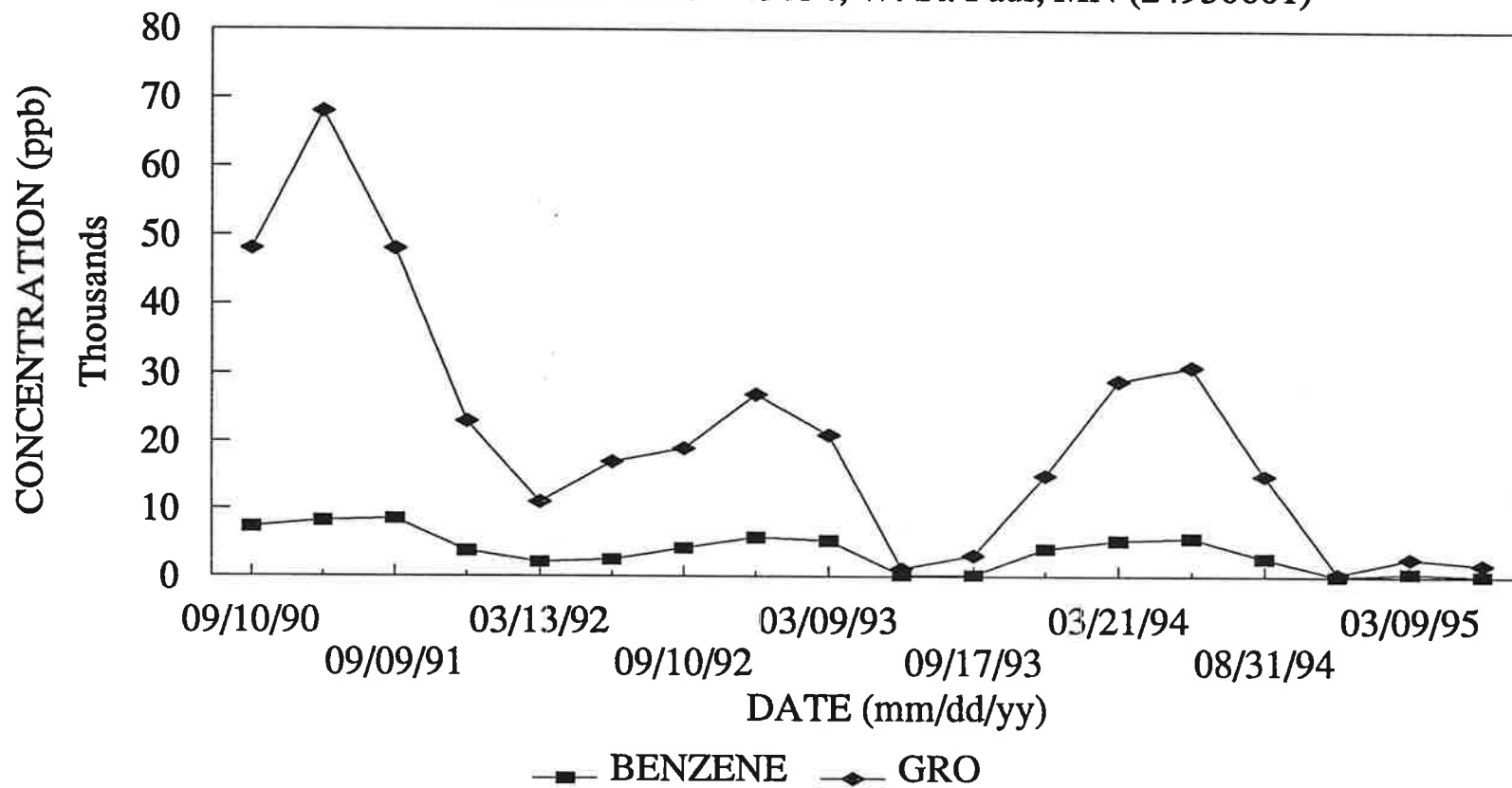
GRO=gasoline range organics

** = indicates sample contains higher boiling hydrocarbons*

DAHL

GROUNDWATER ANALYTICAL DATA MW-2

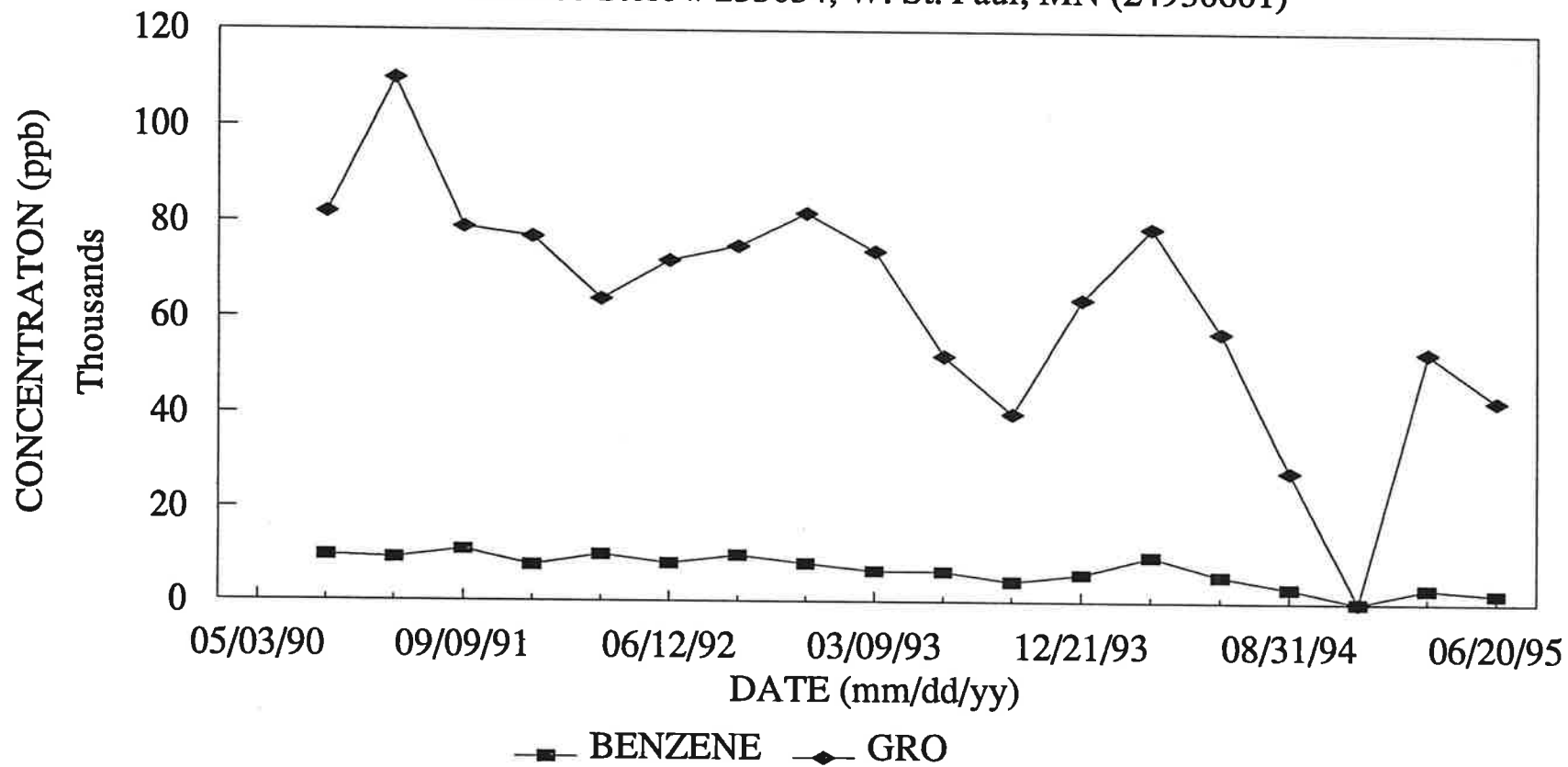
Conoco Store # 23034, W. St. Paul, MN (24930601)



0601LABANAL

GROUNDWATER ANALYTICAL DATA MW-3

Conoco Store # 233034, W. St. Paul, MN (24930601)



0601LABANAL2

TABLE 2

GROUNDWATER ELEVATION DATA

*Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)*

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
MW-1	100.47	10/23/89	0.00	17.99	0.00	82.48
	100.47	12/15/89	0.00	18.89	0.00	81.58
	100.47	01/08/90	0.00	19.15	0.00	81.32
	100.47	02/05/90	0.00	19.61	0.00	80.86
	100.47	03/13/90	0.00	20.12	0.00	80.35
	100.47	03/29/90	0.00	19.81	0.00	80.66
	100.47	04/24/90	0.00	19.94	0.00	80.53
*Resurvey	100.45	05/03/90	0.00	20.07	0.00	80.38
	100.45	05/15/90	0.00	19.66	0.00	80.79
	100.45	06/06/90	0.00	19.40	0.00	81.05
	100.45	06/12/90	0.00	18.75	0.00	81.70
	100.45	06/15/90	0.00	18.66	0.00	81.79
	100.45	06/29/90	0.00	17.82	0.00	82.63
	100.45	07/06/90	0.00	17.52	0.00	82.93
	100.45	07/13/90	0.00	17.30	0.00	83.15
	100.45	07/20/90	0.00	17.04	0.00	83.41
	100.45	08/22/90	0.00	15.90	0.00	84.55
	100.45	09/10/90	0.00	15.90	0.00	84.55
	100.45	10/10/90	0.00	15.90	0.00	84.55
	100.45	11/06/90	0.00	16.64	0.00	83.81
	100.45	01/14/91	0.00	17.77	0.00	82.68
	100.45	02/05/91	0.00	18.29	0.00	82.16
	100.45	03/13/91	0.00	18.76	0.00	81.69
	100.45	04/04/91	0.00	18.51	0.00	81.94
	100.45	05/10/91	0.00	17.81	0.00	82.64
	100.45	06/16/91	0.00	16.32	0.00	84.13
	100.45	07/03/91	0.00	15.56	0.00	84.89
	100.45	08/06/91	0.00	15.22	0.00	85.23
	100.45	09/09/91	0.00	15.15	0.00	85.30
	100.45	09/10/91	0.00	15.30	0.00	85.15
	100.45	10/08/91	0.00	14.68	0.00	85.77
	100.45	11/19/91	0.00	15.32	0.00	85.13
	100.45	12/26/91	0.00	14.93	0.00	85.52
	100.45	01/13/92	0.00	14.79	0.00	85.66
	100.45	02/10/92	0.00	15.02	0.00	85.43
	100.45	03/13/92	0.00	14.56	0.00	85.89
	100.45	04/20/92	0.00	14.27	0.00	86.18
	100.45	05/11/92	0.00	13.94	0.00	86.51
	100.45	06/12/92	0.00	14.11	0.00	86.34
	100.45	09/10/92	0.00	13.72	0.00	86.73
*Resurvey	100.45	12/23/92	0.00	14.30	0.00	86.15
	100.45	03/09/93	0.00	15.87	0.00	84.58
	100.45	06/10/93	0.00	13.90	0.00	86.55
	100.45	07/19/93	0.00	11.99	0.00	88.46
	100.45	07/28/93	0.00	12.08	0.00	88.37

TABLE 2

GROUNDWATER ELEVATION DATA
Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
	100.45	09/17/93	0.00	12.55	0.00	87.90
12:00 hrs.	100.45	09/29/93	0.00	12.75	0.00	87.70
14:30 hrs.	100.45	09/29/93	0.00	12.72	0.00	87.73
MW-1	100.45	09/30/93	0.00	12.40	0.00	88.05
	100.45	10/07/93	0.00	12.79	0.00	87.66
	100.45	10/22/93	0.00	13.51	0.00	86.94
	100.45	12/21/93	0.00	14.59	0.00	85.86
	100.45	01/25/94	0.00	15.46	0.00	84.99
12:00 hrs.	100.45	01/28/94	0.00	15.38	0.00	85.07
2:00 hrs.	100.45	01/28/94	0.00	15.38	0.00	85.07
2:30 hrs.	100.45	01/28/94	0.00	15.38	0.00	85.07
	100.45	02/03/94	0.00	15.65	0.00	84.80
	100.45	02/04/94	0.00	15.70	0.00	84.75
	100.45	02/11/94	0.00	15.93	0.00	84.52
	100.45	02/18/94	0.00	15.87	0.00	84.58
	100.45	03/21/94	0.00	16.48	0.00	83.97
	100.45	04/15/94	0.00	16.54	0.00	83.91
	100.45	05/31/94	0.00	15.37	0.00	85.08
	100.45	06/30/94	0.00	14.78	0.00	85.67
	100.45	07/08/94	0.00	14.71	0.00	85.74
	100.45	07/19/94	0.00	14.62	0.00	85.83
09:30	100.45	08/15/94	0.00	14.92	0.00	85.53
11:50	100.45	08/15/94	0.00	14.92	0.00	85.53
	100.45	08/31/94	0.00	14.91	0.00	85.54
	100.45	10/31/94	0.00	13.92	0.00	86.53
	100.45	11/17/94	0.00	13.83	0.00	86.62
	100.45	12/27/94	0.00	14.94	0.00	85.51
	100.45	01/16/95	0.00	15.22	0.00	85.23
	100.45	02/09/95	0.00	17.74	0.00	82.71
	100.45	03/09/95	0.00	16.51	0.00	83.94
	100.45	04/06/95	0.00	16.24	0.00	84.21
	100.45	05/11/95	0.00	15.52	0.00	84.93
	100.45	06/20/95	0.00	14.78	0.00	85.67
	100.45	07/31/95	0.00	13.82	0.00	86.63
	100.45	08/29/95	0.00	13.62	0.00	86.83
	100.45	09/21/95	0.00	14.11	0.00	86.34
	100.45	10/03/95	0.00	14.44	0.00	86.01
MW-2	100.77	10/23/89	0.00	19.23	0.00	81.54
	100.77	12/15/89	0.00	20.14	0.00	80.63
	100.77	01/08/90	0.00	20.40	0.00	80.37
	100.77	02/05/90	0.00	20.93	0.00	79.84
	100.77	03/13/90	0.00	21.30	0.00	79.47
	100.77	03/29/90	0.00	20.87	0.00	79.90
	100.77	04/24/90	0.00	21.18	0.00	79.59

TABLE 2

GROUNDWATER ELEVATION DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
*Resurvey	100.74	05/03/90	0.00	21.48	0.00	79.26
	100.74	05/15/90	0.00	20.89	0.00	79.85
	100.74	06/06/90	0.00	20.62	0.00	80.12
	100.74	06/12/90	0.00	19.92	0.00	80.82
	100.74	06/15/90	0.00	19.85	0.00	80.89
	100.74	06/29/90	0.00	18.93	0.00	81.81
	100.74	07/06/90	0.00	18.63	0.00	82.11
	100.74	07/13/90	0.00	18.39	0.00	82.35
	100.74	07/20/90	0.00	18.15	0.00	82.59
	100.74	08/22/90	0.00	16.93	0.00	83.81
MW-2	100.74	09/10/90	0.00	17.00	0.00	83.74
	100.74	10/10/90	0.00	17.13	0.00	83.61
	100.74	11/06/90	0.00	17.81	0.00	82.93
	100.74	01/14/91	0.00	19.00	0.00	81.74
	100.74	02/05/91	0.00	19.50	0.00	81.24
	100.74	03/13/91	0.00	19.92	0.00	80.82
	100.74	04/04/91	0.00	19.51	0.00	81.23
	100.74	05/10/91	0.00	19.30	0.00	81.44
	100.74	06/16/91	0.00	17.38	0.00	83.36
	100.74	07/03/91	0.00	16.55	0.00	84.19
	100.74	08/06/91	0.00	16.29	0.00	84.45
	100.74	09/09/91	0.00	16.23	0.00	84.51
	100.74	09/10/91	0.00	16.36	0.00	84.38
	100.74	10/08/91	0.00	15.68	0.00	85.06
	100.74	11/19/91	0.00	16.30	0.00	84.44
	100.74	12/26/91	0.00	16.03	0.00	84.71
	100.74	01/13/92	0.00	15.94	0.00	84.80
	100.74	02/10/92	0.00	16.20	0.00	84.54
	100.74	03/13/92	0.00	15.65	0.00	85.09
	100.74	04/20/92	0.00	15.30	0.00	85.44
	100.74	05/11/92	0.00	14.85	0.00	85.89
	100.74	06/12/92	0.00	15.00	0.00	85.74
	100.74	09/10/92	0.00	14.70	0.00	86.04
*Resurvey	100.77	12/23/92	0.00	15.40	0.00	85.37
	100.77	03/09/93	0.00	16.96	0.00	83.81
	100.77	06/10/93	0.00	14.90	0.00	85.87
	100.77	07/19/93	0.00	12.85	0.00	87.92
	100.77	07/28/93	0.00	12.99	0.00	87.78
	100.77	09/17/93	0.00	13.49	0.00	87.28
12:00 hrs.	100.77	09/29/93	0.00	13.73	0.00	87.04
14:30 hrs.	100.77	09/29/93	0.00	13.70	0.00	87.07
	100.77	09/30/93	0.00	13.37	0.00	87.40
	100.77	10/07/93	0.00	13.78	0.00	86.99
	100.77	10/22/93	0.00	14.69	0.00	86.08
	100.77	12/21/93	0.00	15.67	0.00	85.10

TABLE 2

GROUNDWATER ELEVATION DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
	100.77	01/25/94	0.00	16.61	0.00	84.16
12:00 hrs.	100.77	01/28/94	0.00	16.50	0.00	84.27
2:00 hrs.	100.77	01/28/94	0.00	16.50	0.00	84.27
2:30 hrs.	100.77	01/28/94	0.00	16.50	0.00	84.27
	100.77	02/03/94	0.00	16.86	0.00	83.91
	100.77	02/04/94	0.00	16.99	0.00	83.78
	100.77	02/11/94	0.00	17.17	0.00	83.60
	100.77	02/18/94	0.00	17.11	0.00	83.66
	100.77	03/21/94	0.00	17.74	0.00	83.03
	100.77	04/15/94	0.00	17.94	0.00	82.83
	100.77	05/31/94	0.00	16.53	0.00	84.24
	100.77	06/30/94	0.00	15.95	0.00	84.82
	100.77	07/08/94	0.00	15.86	0.00	84.91
MW-2	100.77	07/19/94	0.00	15.76	0.00	85.01
09:30	100.77	08/15/94	0.00	16.00	0.00	84.77
11:50	100.77	08/15/94	0.00	16.00	0.00	84.77
	100.77	08/31/94	0.00	14.92	0.00	85.85
	100.77	10/31/94	0.00	14.97	0.00	85.80
	100.77	11/17/94	0.00	13.75	0.00	87.02
	100.77	12/27/94	0.00	14.91	0.00	85.86
	100.77	01/16/95	0.00	15.56	0.00	85.21
	100.77	02/09/95	0.00	18.07	0.00	82.70
	100.77	03/09/95	0.00	17.88	0.00	82.89
	100.77	04/06/95	0.00	16.73	0.00	84.04
	100.77	05/11/95	0.00	15.64	0.00	85.13
	100.77	06/20/95	0.00	14.69	0.00	86.08
	100.77	07/31/95	0.00	14.32	0.00	86.45
	100.77	08/31/95	0.00	13.78	0.00	86.99
	100.77	09/21/95	0.00	13.72	0.00	87.05
	100.77	10/03/95	0.00	13.94	0.00	86.83
MW-3	101.05	10/23/89	0.00	20.77	0.00	80.28
	101.05	12/15/89	21.54	22.35	0.81	78.70
	101.05	01/08/90	22.07	22.47	0.40	78.58
	101.05	02/05/90	22.53	22.91	0.38	78.14
	101.05	03/13/90	22.91	23.37	0.46	77.68
	101.05	03/29/90	22.82	23.14	0.32	77.91
	101.05	04/24/90	22.99	23.39	0.40	77.66
*Resurvey	101.05	05/03/90	22.99	23.30	0.31	77.75
	101.05	05/15/90	22.71	22.92	0.21	78.13
	101.05	06/06/90	21.33	22.60	1.27	78.45
	101.05	06/12/90 ^	22.22	23.00	0.78	78.05
	101.05	06/15/90 ^	21.20	21.74	0.54	79.31
	101.05	06/29/90 ^	19.39	20.08	0.69	80.97
	101.05	07/06/90	19.67	19.70	0.03	81.35

TABLE 2

GROUNDWATER ELEVATION DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
	101.05	07/13/90	0.00	19.41	0.00	81.64
	101.05	07/20/90	0.00	19.22	0.00	81.83
	101.05	08/22/90	0.00	18.04	0.00	83.01
	101.05	09/10/90	0.00	18.27	0.00	82.78
	101.05	10/10/90	0.00	18.49	0.00	82.56
	101.05	11/06/90	0.00	19.24	0.00	81.81
	101.05	01/14/91	20.50	20.58	0.08	80.47
	101.05	02/05/91	21.00	21.05	0.05	80.00
	101.05	03/13/91	21.66	21.68	0.02	79.37
	101.05	04/04/91	0.00	21.28	0.00	79.77
	101.05	05/10/91	0.00	20.42	0.00	80.63
	101.05	06/16/91	0.00	18.26	0.00	82.79
	101.05	07/03/91	0.00	17.62	0.00	83.43
	101.05	08/06/91	0.00	17.36	0.00	83.69
	101.05	09/09/91	0.00	17.51	0.00	83.54
	101.05	09/10/91	0.00	17.67	0.00	83.38
	101.05	10/08/91	0.00	16.96	0.00	84.09
	101.05	11/19/91	0.00	17.81	0.00	83.24
	101.05	12/26/91	0.00	17.38	0.00	83.67
	101.05	01/13/92	0.00	17.39	0.00	83.66
MW-3	101.05	02/10/92	0.00	17.65	0.00	83.40
	101.05	03/13/92	0.00	17.28	0.00	83.77
	101.05	04/20/92	0.00	16.57	0.00	84.48
	101.05	05/11/92	0.00	16.04	0.00	85.01
	101.05	06/12/92	0.00	16.42	0.00	84.63
	101.05	09/10/92	0.00	16.00	0.00	85.05
*Resurvey	101.04	12/23/92	0.00	16.61	0.00	84.43
	101.04	03/09/93	0.00	18.38	0.00	82.66
	101.04	06/10/93	0.00	16.02	0.00	85.02
	101.04	07/19/93	0.00	13.79	0.00	87.25
	101.04	07/28/93	0.00	14.12	0.00	86.92
	101.04	09/17/93	0.00	14.71	0.00	86.33
12:00 hrs.	101.04	09/29/93	0.00	14.97	0.00	86.07
14:30 hrs.	101.04	09/29/93	0.00	15.52	0.00	85.52
	101.04	09/30/93	0.00	15.48	0.00	85.56
	101.04	10/07/93	0.00	15.08	0.00	85.96
	101.04	10/22/93	0.00	16.86	0.00	84.18
	101.04	12/21/93	0.00	17.17	0.00	83.87
	101.04	01/25/94	0.00	18.04	0.00	83.00
12:00	101.04	01/28/94	0.00	17.94	0.00	83.10
02:00	101.04	01/28/94	0.00	18.28	0.00	82.76
02:30	101.04	01/28/94	0.00	18.30	0.00	82.74
	101.04	02/03/94	0.00	19.02	0.00	82.02
	101.04	02/04/94	0.00	19.15	0.00	81.89
	101.04	02/11/94	0.00	19.34	0.00	81.70

TABLE 2

GROUNDWATER ELEVATION DATA
Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
	101.04	02/18/94	0.00	19.37	0.00	81.67
	101.04	03/21/94	0.00	19.90	0.00	81.14
	101.04	04/15/94	0.00	20.43	0.00	80.61
	101.04	05/31/94	0.00	18.52	0.00	82.52
	101.04	06/30/94	0.00	17.88	0.00	83.16
	101.04	07/08/94	0.00	17.78	0.00	83.26
	101.04	07/19/94	0.00	17.70	0.00	83.34
09:30	101.04	08/15/94	0.00	17.34	0.00	83.70
11:50	101.04	08/15/94	0.00	17.35	0.00	83.69
	101.04	08/31/94	0.00	17.51	0.00	83.53
	101.04	10/31/94	0.00	16.66	0.00	84.38
	101.04	11/17/94	0.00	16.93	0.00	84.11
	101.04	12/27/94	0.00	18.04	0.00	83.00
	101.04	01/16/95	0.00	18.41	0.00	82.63
	101.04	02/09/95	0.00	18.84	0.00	82.20
	101.04	03/09/95	0.00	19.84	0.00	81.20
	101.04	04/06/95	0.00	19.81	0.00	81.23
	101.04	05/11/95	0.00	19.08	0.00	81.96
	101.04	06/20/95	0.00	18.20	0.00	82.84
	101.04	07/31/95	0.00	16.21	0.00	84.83
	101.04	08/31/95	0.00	15.78	0.00	85.26
	101.04	09/21/95	0.00	18.00	0.00	83.04
	101.04	10/03/95	0.00	17.76	0.00	83.28
MW-4	100.68	10/23/89				
	100.68	12/15/89				
	100.68	01/08/90				
	100.68	02/05/90				
	100.68	03/13/90				
	100.68	03/29/90				
	100.68	04/24/90				
	100.68	05/03/90	0.00	23.93	0.00	76.75
	100.68	05/15/90				
	100.68	06/06/90				
	100.68	06/12/90				
	100.68	06/15/90				
	100.68	06/29/90				
	100.68	07/06/90				
	100.68	07/13/90	0.00	19.82	0.00	80.86
	100.68	07/20/90	0.00	19.65	0.00	81.03
	100.68	08/22/90	0.00	18.60	0.00	82.08
	100.68	09/10/90	0.00	18.94	0.00	81.74
	100.68	10/10/90	0.00	19.22	0.00	81.46
	100.68	11/06/90	0.00	19.99	0.00	80.69
	100.68	01/14/91	0.00	21.30	0.00	79.38

TABLE 2

GROUNDWATER ELEVATION DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
	100.68	02/05/91	0.00	21.83	0.00	78.85
	100.68	03/13/91	0.00	22.35	0.00	78.33
	100.68	04/04/91	0.00	22.21	0.00	78.47
	100.68	05/10/91	0.00	21.14	0.00	79.54
	100.68	06/16/91	0.00	18.53	0.00	82.15
	100.68	07/03/91	0.00	18.14	0.00	82.54
	100.68	08/06/91	0.00	18.10	0.00	82.58
	100.68	09/09/91	0.00	18.35	0.00	82.33
	100.68	09/10/91	0.00	18.40	0.00	82.28
	100.68	10/08/91	0.00	17.76	0.00	82.92
	100.68	11/19/91	0.00	17.70	0.00	82.98
	100.68	12/26/91	0.00	18.10	0.00	82.58
	100.68	01/13/92	0.00	18.18	0.00	82.50
	100.68	02/10/92	0.00	18.50	0.00	82.18
	100.68	03/13/92	0.00	17.88	0.00	82.80
	100.68	04/20/92	0.00	17.22	0.00	83.46
	100.68	05/11/92	0.00	16.63	0.00	84.05
	100.68	06/12/92	0.00	17.19	0.00	83.49
	100.68	09/10/92	0.00	16.84	0.00	83.84
*Resurvey	100.66	12/23/92	0.00	17.42	0.00	83.24
	100.66	03/09/93	0.00	19.19	0.00	81.47
	100.66	06/10/93	0.00	16.20	0.00	84.46
	100.66	07/19/93	0.00	14.42	0.00	86.24
	100.66	07/28/93	0.00	14.90	0.00	85.76
	100.66	09/17/93	0.00	15.57	0.00	85.09
12:00 hrs.	100.66	09/29/93	0.00	15.81	0.00	84.85
14:30 hrs.	100.66	09/29/93	0.00	15.78	0.00	84.88
	100.66	09/30/93	0.00	15.49	0.00	85.17
	100.66	10/07/93	0.00	15.96	0.00	84.70
	100.66	10/22/93	0.00	16.96	0.00	83.70
MW-4	100.66	12/21/93	0.00	18.07	0.00	82.59
	100.66	01/25/94	0.00	18.89	0.00	81.77
12:00 hrs.	100.66	01/28/94	0.00	18.80	0.00	81.86
2:00 hrs.	100.66	01/28/94	0.00	18.80	0.00	81.86
2:30 hrs.	100.66	01/28/94	0.00	18.80	0.00	81.86
	100.66	02/03/94	0.00	19.14	0.00	81.52
	100.66	02/04/94	0.00	19.15	0.00	81.51
	100.66	02/11/94	0.00	19.40	0.00	81.26
	100.66	02/18/94	0.00	19.40	0.00	81.26
	100.66	03/21/94	0.00	19.88	0.00	80.78
	100.66	04/15/94	0.00	20.15	0.00	80.51
	100.66	05/31/94	0.00	18.47	0.00	82.19
	100.66	06/30/94	0.00	19.93	0.00	80.73
	100.66	07/08/94	0.00	17.90	0.00	82.76
	100.66	07/19/94	0.00	17.79	0.00	82.87

TABLE 2

GROUNDWATER ELEVATION DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.	
	09:30	100.66	08/15/94	0.00	18.17	0.00	82.49
	11:50	100.66	08/15/94	0.00	18.17	0.00	82.49
		100.66	08/31/94	0.00	18.39	0.00	82.27
		100.66	10/31/94	0.00	16.56	0.00	84.10
		100.66	11/17/94	0.00	16.87	0.00	83.79
		100.66	12/27/94	0.00	18.23	0.00	82.43
		100.66	01/16/95	0.00	18.72	0.00	81.94
		100.66	02/09/95	0.00	19.15	0.00	81.51
		100.66	03/09/95	0.00	19.95	0.00	80.71
		100.66	04/06/95	0.00	19.61	0.00	81.05
		100.66	05/11/95	0.00	18.51	0.00	82.15
		100.66	06/20/95	0.00	17.83	0.00	82.83
		100.66	07/31/95	0.00	16.93	0.00	83.73
		100.66	08/31/95	0.00	16.59	0.00	84.07
		100.66	09/21/95	0.00	17.54	0.00	83.12
		100.66	10/03/95	0.00	17.78	0.00	82.88
MW-5		102.13	12/23/92	0.00	17.03	0.00	85.10
		102.13	03/09/93	0.00	18.73	0.00	83.40
		102.13	06/10/93	0.00	16.53	0.00	85.60
		102.13	07/19/93	0.00	14.40	0.00	87.73
		102.13	07/28/93	0.00	14.62	0.00	87.51
		102.13	09/17/93	0.00	15.15	0.00	86.98
		102.13	09/20/93				
		102.13	09/27/93				
	12:00 hrs.	102.13	09/29/93	0.00	15.41	0.00	86.72
	14:30 hrs.	102.13	09/29/93	0.00	15.43	0.00	86.70
		102.13	09/30/93	0.00	15.28	0.00	86.85
		102.13	10/07/93	0.00	15.10	0.00	87.03
		102.13	10/22/93	0.00	16.67	0.00	85.46
		102.13	12/08/93				
		102.13	12/21/93	0.00	17.54	0.00	84.59
		102.13	01/25/94	0.00	18.45	0.00	83.68
	12:00 hrs.	102.13	01/28/94	0.00	18.35	0.00	83.78
	2:00 hrs.	102.13	01/28/94	0.00	18.37	0.00	83.76
	2:30 hrs.	102.13	01/28/94	0.00	18.37	0.00	83.76
		102.13	02/03/94	0.00	18.91	0.00	83.22
MW-5		102.13	02/04/94	0.00	19.05	0.00	83.08
		102.13	02/11/94	0.00	19.25	0.00	82.88
		102.13	02/18/94	0.00	19.26	0.00	82.87
		102.13	03/21/94	0.00	19.81	0.00	82.32
		102.13	04/15/94	0.00	20.15	0.00	81.98
		102.13	05/31/94	0.00	18.61	0.00	83.52
		102.13	06/30/94	0.00	17.91	0.00	84.22
		102.13	07/08/94	0.00	17.72	0.00	84.41

TABLE 2

GROUNDWATER ELEVATION DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
	102.13	07/19/94	0.00	17.73	0.00	84.40
09:30	102.13	08/15/94	0.00	17.77	0.00	84.36
11:50	102.13	08/15/94	0.00	17.78	0.00	84.35
	102.13	08/31/94	0.00	17.78	0.00	84.35
	102.13	10/31/94	0.00	16.82	0.00	85.31
	102.13	11/17/94	0.00	16.87	0.00	85.26
	102.13	12/27/94	0.00	18.17	0.00	83.96
	102.13	01/16/95	0.00	18.44	0.00	83.69
	102.13	02/09/95	0.00	18.97	0.00	83.16
	102.13	03/09/95	0.00	19.88	0.00	82.25
	102.13	04/06/95	0.00	19.64	0.00	82.49
	102.13	05/11/95	0.00	18.85	0.00	83.28
	102.13	06/20/95	0.00	17.99	0.00	84.14
	102.13	07/31/95	0.00	16.49	0.00	85.64
	102.13	08/31/95	0.00	16.14	0.00	85.99
	102.13	09/21/95	0.00	17.22	0.00	84.91
	102.13	10/03/95	0.00	17.40	0.00	84.73
RW-1	100.61	12/23/92	0.00	16.00	0.00	84.61
	100.61	03/09/93	0.00	17.92	0.00	82.69
	100.61	06/10/93	0.00	15.54	0.00	85.07
	100.61	07/19/93	0.00	13.82	0.00	86.79
	100.61	07/28/93	0.00	14.13	0.00	86.48
	100.61	09/17/93	0.00	14.74	0.00	85.87
	100.61	09/20/93	0.00	16.13	0.00	84.48
	100.61	09/27/93	0.00	14.12	0.00	86.49
12:00 hrs.	100.61	09/29/93	0.00	14.94	0.00	85.67
14:30 hrs.	100.61	09/29/93	0.00	25.40	0.00	75.21
	100.61	09/30/93	0.00	25.64	0.00	74.97
	100.61	10/07/93	0.00	15.10	0.00	85.51
	100.61	10/22/93	0.00	25.72	0.00	74.89
	100.61	12/08/93	0.00	16.65	0.00	83.96
	100.61	12/21/93	0.00	16.92	0.00	83.69
	100.61	01/25/94				
12:00 hrs.	100.61	01/28/94	0.00	17.71	0.00	82.90
2:00 hrs.	100.61	01/28/94	0.00	27.20	0.00	73.41
2:30 hrs.	100.61	01/28/94	0.00	27.35	0.00	73.26
	100.61	02/03/94	0.00	28.20	0.00	72.41
	100.61	02/04/94	0.00	27.05	0.00	73.56
	100.61	02/11/94	0.00	27.35	0.00	73.26
	100.61	02/18/94	0.00	28.35	0.00	72.26
	100.61	03/21/94	0.00	27.07	0.00	73.54
	100.61	04/15/94	0.00	28.62	0.00	71.99
	100.61	05/31/94	0.00	28.58	0.00	72.03
	100.61	06/30/94	0.00	26.96	0.00	73.65

TABLE 2**GROUNDWATER ELEVATION DATA**
Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)

WELL #	ELEVATION	DATE	D.T.P	D.T.W	P.T.	W.T.E.
RW-1	100.61	07/08/94	0.00	26.20	0.00	74.41
	100.61	07/19/94	0.00	25.98	0.00	74.63
	100.61	08/15/94				
	100.61	08/15/94	0.00	13.90	0.00	86.71
	100.61	08/31/94	0.00	17.39	0.00	83.22
	100.61	10/31/94	0.00	26.18	0.00	74.43
	100.61	11/17/94	0.00	26.80	0.00	73.81
	100.61	12/27/94	0.00	25.86	0.00	74.75
	100.61	01/16/95	0.00	16.22	0.00	84.39
	100.61	02/09/95	0.00	27.63	0.00	72.98
	100.61	03/09/95	0.00	26.58	0.00	74.03
	100.61	04/06/95	0.00	26.30	0.00	74.31
	100.61	05/11/95	0.00	27.31	0.00	73.30
	100.61	06/20/95	0.00	26.58	0.00	74.03
	100.61	07/31/95	0.00	14.32	0.00	86.29
	100.61	08/31/95	0.00	15.55	0.00	85.06
	100.61	09/21/95	0.00	26.52	0.00	74.09
100.61	10/03/95	0.00	26.65	0.00	73.96	

Explanation:

All measurments are in feet (ft).

D.T.P - Depth-to-Product

D.T.W - Depth-to-Water

P.T. - Product Thickness

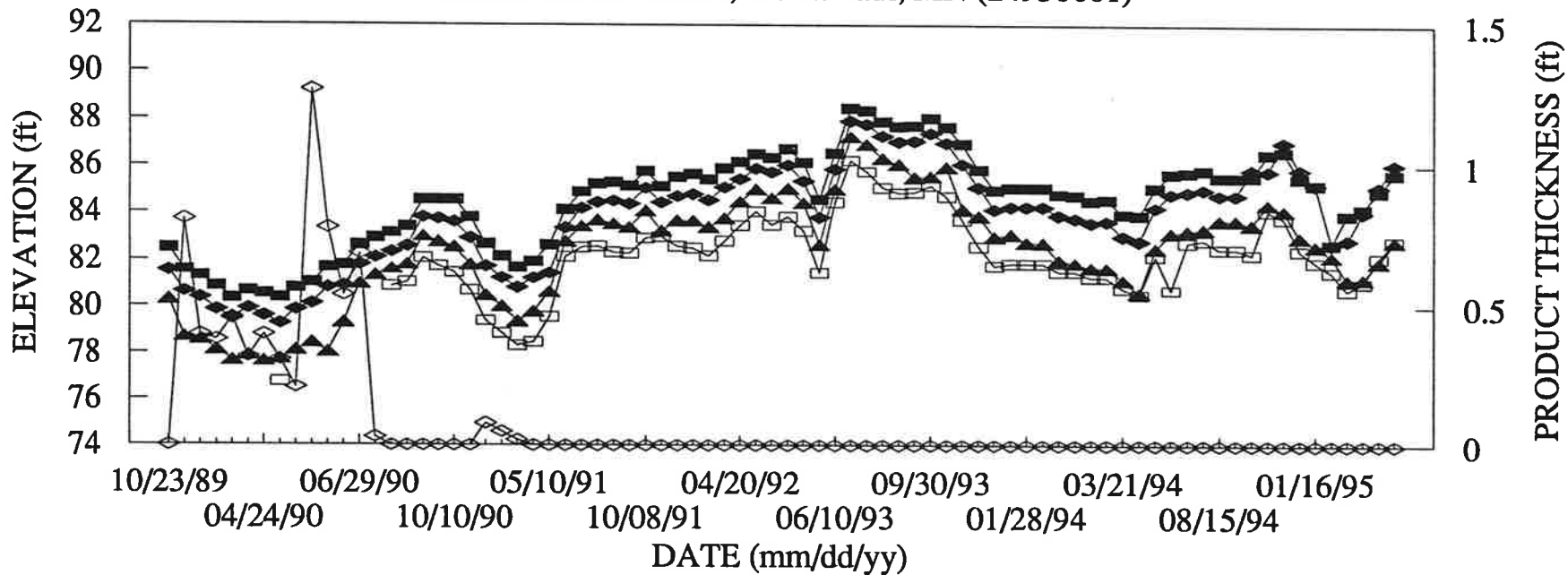
W.T.E - Water-Table-Elevation

^ - Data corrected for possible base measurement error.

DAHL

GROUNDWATER ELEVATIONS/PRODUCT THICKNESS

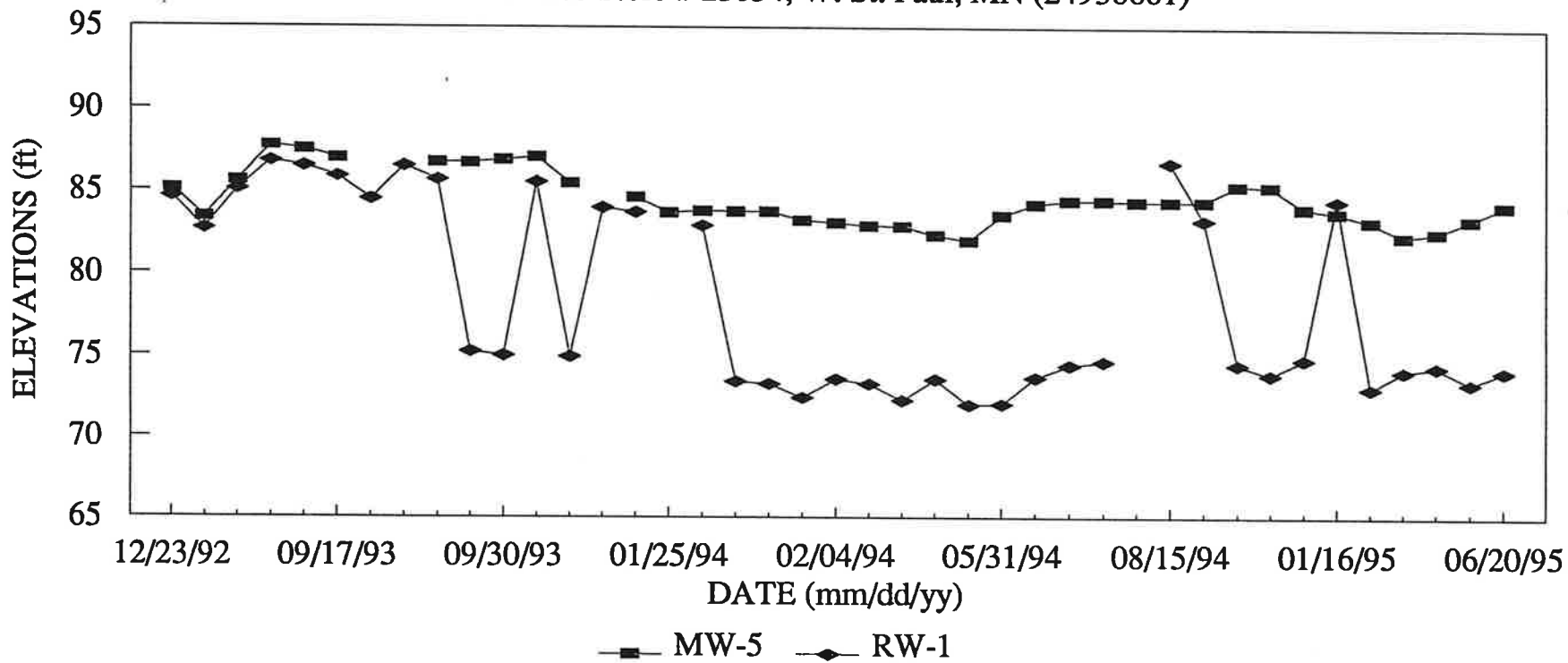
Conoco Store # 23034, W. St. Paul, MN (24930601)



- MW-1
 - ◆— MW-2
 - ▲— MW-3
 - MW-4
 - ◇— MW-3, product thickness
- 0601WTE.ALL

GROUNDWATER ELEVATIONS, MW-5 & RW-1

Conoco Store # 23034, W. St. Paul, MN (24930601)



0601MW5.RW1

TABLE 10

DISSOLVED OXYGEN DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

DATE	TIME	MW-1	MW-2	MW-3	MW-4	MW-5	SVV-1	SVV-2	SVV-3	SVV-4	SVV-5	SVV-6	SVV-7	SVV-8	SVV-9	SVV-10	SVV-11
07/08/94		2	1.5	2.1	3	6.5	7.5	7.5	1.8	1.4	2.2	2.6	2	1.9	2	*	1.8
08/15/94	09:30	0.6	0.6	1	2.5	2.5	7	6.5	1	*	1.5	6.2	2	1	1.5	*	1.5
08/15/94	11:50	0.7	0.7	1	2.6	2.7	7.2	6.5	1	*	1.5	6.5	2.1	1	1.5	*	1.4
01/16/95		*	1	*	*	*	1	7.8	*	4	6.2	1.1	1	0.8	*	*	1
03/09/95		0.5	0.4	0.5	0.5	1.3	*	*	*	2.4	*	*	*	*	*	*	*
04/06/95		*	*	*	*	*	*	10	2.8	*	1.6	*	*	*	*	*	*
05/11/95		*	*	*	*	*	3.6	9.6	2.1	2.6	9.2	3.8	0.6	1.6	4.2	2.1	2.4
06/20/95		1.5	1.2	1.4	1.8	1.5	1.6	8.2	0.7	2.8	1.4	0.8	1	1	1.2	1	0.9
08/02/95		0.9	0.8	1	1.2	1.4	1	6	0.6	2.2	1.4	1	1.2	0.8	1	1	0.8
08/29/95		1.4	1.5	1.6	1.6	4.2	2.6	6.4	3.1	2.2	3.2	1.3	1.6	1.3	6.2	1.6	1.3
09/21/95		1.2	1.2	1.4	1.5	2.8	2.8	6.8	4	3	3.8	2	2	1.5	6	2	1.2
10/03/95		0.6	1.4	1.1	1.4	1.5	0.7	3.6	0.9	1	*	*	*	*	*	*	*

Explanation:

Measurements in mg/l

** = Data not collected*

CAD SYSTEM MONITORING WORKSHEET

Fact sheet #11

Minnesota Pollution Control Agency

LUST Cleanup Program

April 1993

This worksheet documents ongoing system emissions and efficiency, in part to fulfill U.S. Environmental Protection Agency (EPA) requirements. Submit this document with the "Site Monitoring Worksheet" (fact sheet #7) in lieu of quarterly progress reports.

For several remedial technologies, you are asked to provide contaminant mass removal rates in terms of gallons/day. To aid you in calculating these values, we provide a standard equation and have calculated the gallon/kilogram (gal/kg) values for various petroleum products. Please use these values in your calculations:

Product	gal/kg
gasoline	0.37
kerosene, JP4	0.33
fuel oil #1, diesel	0.31
fuel oil #2	0.30
fuel oil #4	0.29

Date Form Completed: 11-2-95

FREE PRODUCT RECOVERY SYSTEMS

Attach a table of free product thickness in all monitoring and recovery wells

(to 0.1 feet).

Free product recovery rate: gallons/day
Total product recovered to date: gallons

GROUND WATER PUMP-OUT SYSTEMS

Influent/Effluent concentrations

Table 3 Attach a table of cumulative ground water influent and effluent discharge concentrations (in parts per billion).

0.24 gallons per minute
Amount of water table drawdown: 1 feet

Contaminant mass removal

Estimated contaminant mass removal rate: 0.015 gallons/day
Estimated contaminant mass removal to date: 9.78 gallons

Operating parameters Pumping rate: 5 gallons/minute

9,78
596.89

SOIL VENTING SYSTEMS

Emission concentrations

Table 6 Attach a table including field screening results for each vapor extraction point.

Table 7 Attach a table of soil vent system emissions concentrations. The table should include all analytical samples taken since system startup. The samples should be collected from a sampling port located before the blower. Samples should be analyzed for benzene, ethyl benzene, toluene and xylene (BETX) using EPA Method 18.

Operating parameters

Extraction airflow rate: 32 standard cubic feet/minute (scfm)

Table 5 Attach a table of cumulative vacuum data from vent points and monitoring points.

Bioactivity measurements

Attach a table of cumulative extraction system CO₂ and O₂ concentrations.

Contaminant mass removal:

Estimated contaminant mass removal rate: kg/day x gal/kg 0.57 gal/day
Estimated contaminant mass removal to date: 596.89 gallons

SOIL VENTING/AIR SPARGING SYSTEMS

(Complete the soil venting systems section above for all air sparge/soil venting combination systems)

Table 9 Attach a table of air injection rates for each sparge point in the system.

Total air injection rate: 10.6 scfm
Total air removal rate: 32 scfm

TOTAL SITE CONTAMINANT MASS REMOVAL

Fill out this section if ground water pump-out is used in combination with a soil venting system or a soil venting/air sparging system.

Total estimated contaminant mass removal rate for the site: 0.616 gallons/day
Total estimated contaminant mass removal to date for the site: 366.36 gallons

SYSTEM CHANGES

Use this space to describe in detail any changes in system operation or configuration that were made during this reporting period (attach additional pages if needed). Also explain any periods during which the system was not operating.

The groundwater treatment system was down for maintenance purposes for a period during this quarter. All systems are currently operating.

RECOMMENDATIONS

Use this space to detail any recommendations for modifying the corrective action system operation or configuration (attach additional pages if needed):

DAHL will continue with the current monitoring schedule.

TABLE 3

INFLUENT/EFFLUENT ANALYTICAL DATA

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

	DATE	B	E	T	X	THG/GRO	MTBE	COD (ppm)	TSS (ppm)
Influent	10/15/93	730	530	3700	3900	14000	ND		
	10/22/93	1100	440	4200	4600	16000	ND		
	02/04/94	120	14	270	600	2900	ND		
	03/21/94	56	ND	50	230	910	ND		
	06/30/94	ND	ND	ND	ND	190	ND		
	12/27/94	970	280	700	1200	7000	ND		
	03/09/95	510	170	740	1300	9200	ND		
	06/20/95	390	41	270	990	11000	ND		
	09/21/95	545	420	423	1910	7840	<50		
Effluent	10/15/93	ND	ND	21	30	210	ND		
	10/22/93	8	ND	32	47	310	ND		
	02/04/94	ND	ND	ND	ND	ND	ND	7	21
	02/11/94	ND	ND	ND	5	ND	ND	ND	26
	03/21/94	ND	ND	ND	ND	ND	ND	31	ND
	04/15/94	ND	ND	ND	ND	63	ND	27	ND
	06/01/94	ND	ND	ND	ND	ND	ND	100	12
	06/30/94	ND	ND	ND	ND	ND	ND	68	10
	07/19/94	ND	ND	ND	ND	ND	ND	61	ND
	10/31/94	ND	ND	ND	6	60	ND	ND	6
	11/17/94	ND	ND	ND	7	50	ND	39	4
	12/27/94	ND	ND	ND	ND	35	ND	85	20
	01/16/95	ND	ND	1.7	ND	11	ND	50	10
	02/09/95	ND	ND	ND	8.4	92	ND	490	ND
	03/09/95	2.3	ND	ND	20	160	ND	ND	ND
	04/08/95	ND	ND	ND	2.8	ND	ND	74	ND
	05/11/95	ND	ND	ND	3.6	46	ND	50	ND
	06/20/95	ND	ND	ND	28	ND	ND	ND	ND
	09/21/95	ND	ND	ND	6.7	ND	ND	53	7.2
10/03/95	ND	ND	1.1	ND	ND	ND	30	17.6	

Explanation:

All values are expressed in ug/L which is equivalent to parts-per-billion (ppb) unless otherwise specified.

B = benzene

E = ethyl benzene

T = toluene

X = xylenes

THG = total hydrocarbons as gasoline

GRO = gasoline range organics

MTBE = methyl-tert-butyl ether

TABLE 5

VACUUM DATA from SOIL VAPOR VENTS

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

DATE	SVV-1	SVV-2	SVV-3	SVV-4	SVV-5	SVV-6	SVV-7	SVV-8	SVV-9	SVV-10	SVV-11	SVP-1(W)	SVP-1(E)	SVP-2(W)	SVP-2(E)	SVP-3(W)	SVP-3(E)	SVP-4(W)	SVP-4(E)
02/03/94	-23	-23	-24	-22	-19	-30	-21	-20	-24	-23	-23	-3.5	-6	-2.5	-0.7	-4	-4	-3.8	-3.6
02/04/94	-22	-20	-25	-23	-20	-19	-30	-19	-25	-24	-23	-4.6	-3.2	0	-2	-3.5	-3.5	-3.2	-3.2
02/11/94	-47	-47	-39	-46	-47	-18	-50	-51	-30	-24	-45	-1	-2.6	-0.6	0	-0.41	-0.85	-3.1	-2.9
02/18/94	-30	-40	-46	-20	-44	-24	-41	-22	-49	-21	-12	-0.07	12	-0.54	-0.52	*	*	*	*
03/21/94	-48	-48	-48	-48	-26	-10	-45	-48	-35	-20	-14	-1.2	-1.4	-0.62	-0.61	-0.66	-0.28	-2.9	-3.1
04/15/94	-10	-9	-15	-11	-22	-7	-30	-60	-19	-22	-14	-1.1	-1.2	0	-0.42	-0.22	-0.54	-2.5	-2.9
05/31/94	-46	-46	-39	-46	-50	-46	-40	-51	-39	-50	-42	-4.3	-4.8	-0.22	-3.1	-5.4	-3.4	-4	-4.1
06/30/94	-45	-47	-40	-49	-51	-46	-22	-52	-38	-51	-44	-3.8	-2.8	-2.7	0.03	-4.5	0	-2.2	-2.3
07/08/94	-43	-47	-20	-46	-28	-46	-19	-15	-48	-8	-43	-2.1	-2.2	-3	0	0	-4.6	-2.1	-2.1
08/15/94	-42	-48	-17	-44	-12	-44	-17	-31	-48	-14	-44	-3.9	-2.5	-2.4	0	-4.5	0	-2.4	-2.2
08/15/94	-42	-48	-17	-44	-12	-44	-17	-31	-48	-14	-44	-4	-2.8	-2.5	-0.1	-4.5	0	-2.4	-2.5
08/31/94	-20	-20	-20	-20	-20	-30	-20	-20	-20	-20	-20	-2.5	0	18	-1	-2.2	0	-1.8	-1.6
10/31/94	-21	-25	-24	-26	-25	-34	-41	-28	-29	-25	-19	-2.6	-0.05	-1.7	0	0	-2.4	0	-0.9
11/17/94	-22	-24	-22	-22	-38	-29	-44	-25	-20	-15	-15	-2	-0.02	-0.4	-0.02	-0.04	-1.6	-0.49	-0.48
12/27/94	-18	-24	-24	-18	-29	-34	-42	-11	-10	-12	-16	0	3.1	3.4	0	8.2	-2.2	-0.72	-0.74
01/16/95	-35	-39	-36	-20	-30	-13	-52	-4	-10	-16	-11	*	*	2.8	-1.6	-2.6	0	-0.08	-0.03
02/09/95	-30	-26	-36	-22	-32	-50	-50	-4	-7	-18	-8	*	*	*	*	*	*	*	*
03/09/95	SYSTEM SHUT DOWN																		
04/06/95	-26	-14	-26	-25	-27	-16	-16	-15	-20	-20	-19	-3.9	-4.5	-1.7	-1.5	-2.3	-1.8	-5	-4.4
05/11/95	-30	-15	-28	-28	-28	-26	-18	-16	-21	-22	-20	-3.8	-3.2	-1.4	-1.2	-1.8	-1	-4.8	-4
06/20/95	-24	-25	-16	-15	-15	-29	-24	-16	-18	-14	-20	-0.08	0.02	-1.6	1	0.02	-0.12	-0.16	-0.16
07/31/95	-34	-28	-20	-29	-27	-37	-33	-20	-34	-30	-30	-2.4	-0.4	-0.78	0.7	0	1.9	-1.4	0
08/31/95	-40	-44	-30	-36	-30	-41	-39	-38	-32	-27	-36	-1	0	0.16	0.3	0	-0.02	0	-0.49
09/21/95	-18	0	-10	-11	0	-13	-15	-10	-9	-2	-8	-0.8	0	-0.1	0.18	0	0	0	-0.4
10/03/95	-18	-15	-13	-12	-13	-16	-20	-28	-15	-14	-15	NA	NA	NA	NA	NA	NA	NA	NA

Readings are measured in Inches of Water Column (IWCG)

* - indicates measurement not taken

TABLE 6

FID READINGS from SOIL VAPOR VENTS

Conoco Store # 23034

1126 South Robert St., W. St. Paul, Minnesota (24930601)

DATE	SVV-1	SVV-2	SVV-3	SVV-4	SVV-5	SVV-6	SVV-7	SVV-8	SVV-9	SVV-10	SVV-11	SVP-1(W)	SVP-1(E)	SVP-2(W)	SVP-2(E)	SVP-3(W)	SVP-3(E)	SVP-4(W)	SVP-4(E)
02/03/94	2800	10000	5000	1000	10000	180	290	150	800	10000	10000	10000	10000	10000	10000	10000	10000	30	50
02/04/94	400	10000	800	400	10000	290	250	110	330	10000	10000	8000	8500	10000	10000	10000	10000	20	35
02/11/94	325	3600	500	225	9500	250	240	65	130	2000	2000	3000	3200	10000	10000	7000	7500	38	42
02/18/94	300	10000	2000	175	10000	500	225	210	150	3000	9500	42	45	80	1250	*	*	*	*
03/21/94	120	1000	4200	900	10000	3500	700	16	190	10000	10000	125	600	10000	150	10000	10000	20	50
04/15/94	150	3200	400	45	4000	70	200	14	18	1200	1250	*	*	*	*	*	*	*	*
05/31/94	40	1100	55	35	475	12	75	125	16	175	200	10	25	7	8	8	7	5	5
06/30/94	50	1200	38	10	400	10	50	80	10	175	175	7	25	18	8	12	15	6	6
07/08/94	40	500	12	12	150	10	30	50	5	135	90	15	20	30	1000	20	0	5	6
08/15/94	40	450	20	10	350	20	33	19	25	58	60	15	40	30	12	15	20	10	10
08/15/94	40	450	20	10	350	20	33	19	25	58	60	10	35	30	10	15	18	6	6
08/31/94	80	1200	200	250	450	10	18	14	12	48	95	22	70	10000	80	40	28	14	20
10/31/94	45	550	45	50	200	15	30	25	22	50	65	14	14	24	260	24	10	9	10
11/17/94	25	230	50	42	100	4	10	3	6	15	25	60	140	5100	9000	1000	18	5	4
12/27/94	16	375	68	60	100	12	15	10	8	36	30	75	200	10000	10000	1750	280	12	15
01/16/95	60	490	90	90	160	10	50	80	10	60	60	*	*	*	*	*	*	*	*
02/09/95	40	600	60	45	280	75	48	40	50	50	65	*	*	*	*	*	*	*	*
03/09/95	SYSTEM SHUT DOWN																		
04/06/95	100	700	125	65	350	30	35	14	20	100	150	30	25	450	1000	32	55	16	21
05/11/95	100	400	100	70	210	18	30	11	20	32	75	25	20	400	850	26	40	12	20
06/20/95	125	600	170	90	310	70	45	40	30	72	87	20	20	450	650	50	65	17	20
07/31/95	100	580	86	40	350	2	6	2	5	26	25	66	98	260	450	1000	18	2	1
08/31/95	150	700	90	38	650	75	27	30	39	36	20	45	120	660	600	10000	200	15	14
10/03/93	200	275	110	40	160	7	16	8	8	20	32	40	100	600	550	10000	180	20	22
09/21/95	55	300	35	21	160	17	7	7	10	14	14	NA	NA	NA	NA	NA	NA	NA	NA

EXPLANATION:

Readings are measured in parts-per-million (ppm)

* - indicates measurement not taken

TABLE 7

SOIL VENT SYSTEM ANALYTICAL DATA
Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)

DATE	B	E	T	X	THG/GRO
02/04/94	21	24	63	73	3900
02/11/94	8.7	17	36	56	2000
02/18/94	7.7	23	46	77	2200
03/21/94	6.9	11	30	36	2400
06/30/94	9.6	26	68	120	1400
08/31/94	0.21	0.28	0.99	1.1	39
12/27/94	1.8	3.4	15	12	430
06/20/95	1.6	1.5	1.7	14	290
09/21/95	1.8	6.1	7.7	25	570

EXPLANATION:

B=benzene

E=ethyl benzene

T=toluene

X=xylene

THG/GRO=total hydrocarbons as gasoline/gasoline range organics

All values are in parts-per-billion (ppb) unless otherwise specified.

DAHL

TABLE 9

FLOW / PRESSURE MEASUREMENTS AT SPARGE POINT

*Conoco Store # 23034
1126 South Robert St., W. St. Paul, Minnesota (24930601)*

DATE	SCFM	PSI
08/15/94	2	8.8
08/31/94	2	9
11/17/94	2.5	9.5
12/27/94	2.5	9
02/09/95	2.5	9.2
03/09/95	OFF	OFF
04/06/95	3.5	8.2
05/11/95	2.5	8.2
06/20/95	3.2	9.5
08/31/95	3.5	10
09/21/95	4	11.4
10/03/95	10.6	4.0

Explanation:

*SCFM = standard cubic feet per minute
PSI = pounds per square inch*

DAHL



September 27, 1995

Mr. Mike Watson *
Dahl and Associates
4390 McMenemy Road
St. Paul, MN 55127

SUBJECT: 24930601
LEGEND No. 95-2158

1.0 INTRODUCTION

LEGEND TECHNICAL SERVICES, INC. (LEGEND) received one charcoal tube sample from a representative of Dahl and Associates on September 22 , 1995. The parameters and analytical results are listed on the attached table.

2.0 SAMPLE IDENTIFICATION

LABORATORY NO.	CLIENT IDENTIFICATION
SN95-44661	SVS Stack

3.0 METHODOLOGY

Charcoal Tube

The charcoal tube contents were desorbed using carbon disulfide. The solution was analyzed using an HP 5890 gas chromatograph equipped with a flame ionization detector. Compounds were identified by retention times and quantified by comparison to known compounds using an HP Chemserver laboratory data system.

4.0 CASE NARRATIVE


The sample was taken on September 21, 1995 and was received in acceptable condition.

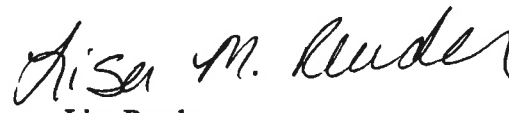
5.0 REMARKS

The sample was consumed in the analysis.

Submitted by,

LEGEND TECHNICAL SERVICES, INC.


Chris Bremer
Laboratory Manager


Lisa Reuder
Chemist

CB/LR/mv

LEGEND TECHNICAL SERVICES, INC.

TABLE #1
LEGEND No. 95-2158

DAHL AND ASSOCIATES, INC.

PETROLEUM VOLATILE ORGANIC COMPOUNDS

Compound	SVS Stack Front ($\mu\text{g}/\text{tube}$)	SVS Stack Back ($\mu\text{g}/\text{tube}$)	Method Blank ($\mu\text{g}/\text{tube}$)	PQL ($\mu\text{g}/\text{tube}$)
Total hydrocarbons as gasoline	5,700	< 50	< 50	50
Benzene	18	< 4.0	< 4.0	4.0
Toluene	77	< 4.0	< 4.0	4.0
Ethyl benzene	61	< 4.0	< 4.0	4.0
Total xylenes	250	< 8.0	< 8.0	8.0
DATE ANALYZED:	9/23/95	9/23/95	9/23/95	

< = Less than number shown

PQL = Practical quantitation limit

330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

LAB
METRO
FAX

(612) 689-2175
(612) 444-9270
(612) 689-3660



MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156

October 16, 1995

Mike Watson
Dahl & Associates
4390 McMenemy Road
St. Paul, MN 55127

Project ID: 2493 0601
Chain of Custody: 14677
Date Sampled: 10-03-95
Date Received: 10-04-95
Date Analyzed: See below
Matrix: Water
Sample Identification:
Lab ID: 95-08379 Effluent

Samples were analyzed for TPH as Gasoline by the Wisconsin Modified GRO procedure. The results are reported on the following page.

Sincerely,

Chad Holzsnagel 10/16

Chad Holzsnagel
Chemist

Deb Marlton 10/16

Deb Marlton
Biologist

MW

MIDWEST ANALYTICAL SERVICES

Page 2
COC 14677

Date Analyzed: 10-09-95						
Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)
Method						
Detection Limit	10.0	1.0	1.0	1.0	3.0	0.1

Sample Number

95-08379 Effluent	BDL	BDL	1.1	BDL	BDL	BDL
----------------------	-----	-----	-----	-----	-----	-----

BDL = Below Detection Limit

Lab ID:	95-08379 Effluent	Date Analyzed
COD (mg/L)	30	10-10-95
TSS (mg/L)	17.6	10-05-95

SOUTH ROBERT STREET

DAIRY QUEEN

BUTLER AVENUE

BUILDING

NANCY RADDATZ DANCE

STOFFEL'S CHIRO

NORTH

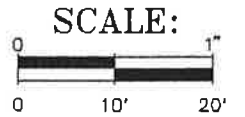


EXPLANATION

NOTE :
This drawing (including property lines, structures, and locations of buried utilities) is not exact. For precise locations, consult a registered land surveyor and appropriate utility company.

⊙ MW- MONITORING WELL

GROUNDWATER GRADIENT DATA:
* BASED ON DATA COLLECTED ON 10/03/95
AVERAGE GRADIENT=1.3 x 10⁻² ft/ft



4390 McMenemy Road
Saint Paul, MN. 55127
Phone (612)490-2905
FAX (612)490-3777

DAHL
& ASSOCIATES, INC.
Environmental Consultants, Contractors & Engineers

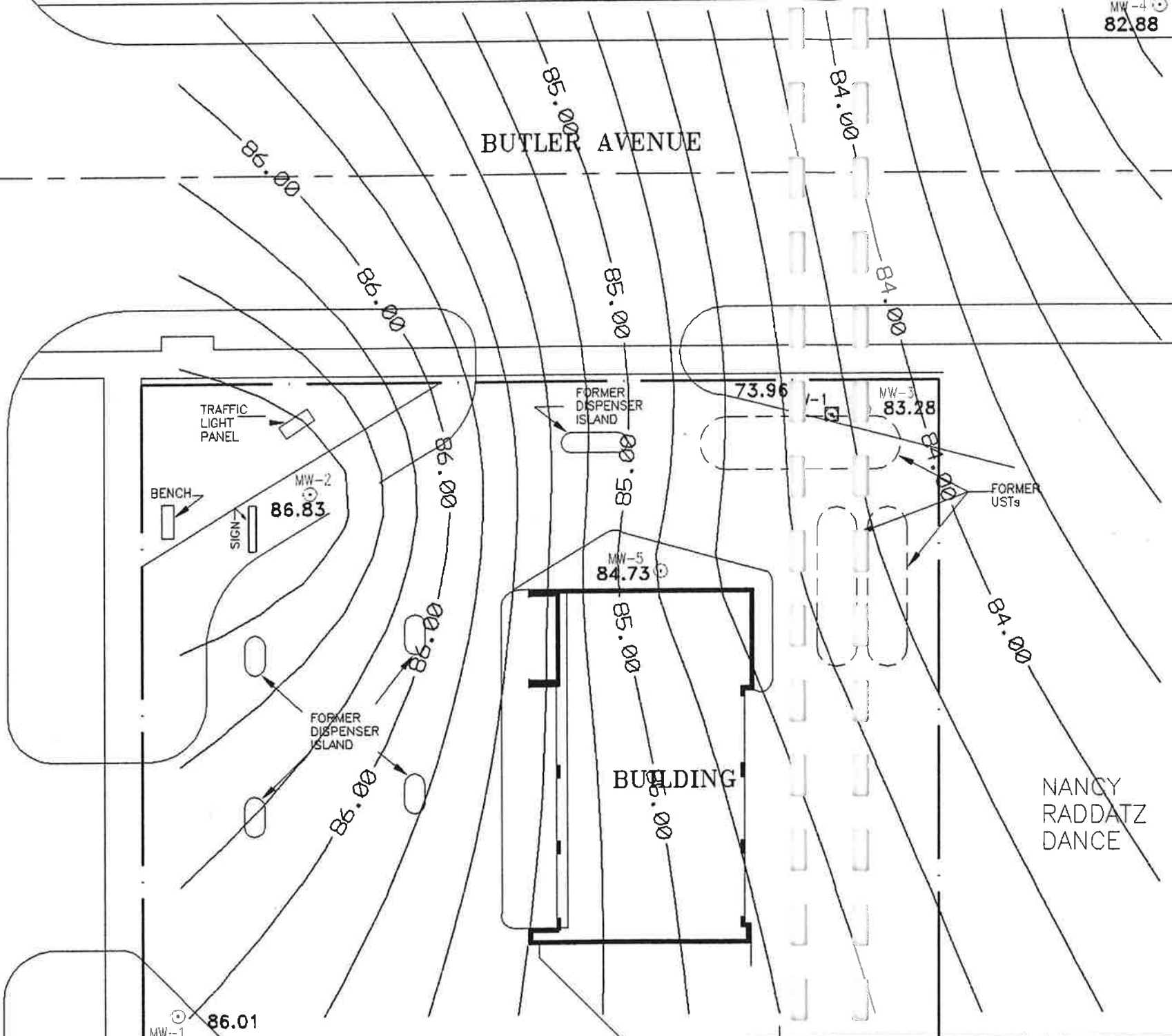
DAHL STD NO: B-00-B

GROUNDWATER GRADIENT 10/03/95

1126 ROBERT STREET SOUTH
WEST ST. PAUL, MINNESOTA

PLOT DATE 11/08/95 AutoCAD FILE NAME 0601-151 PLOT SCALE 1" = 20'

DATE DRAWN	07/24/95
DRAWN BY	JACOB STALLONE
APPROVED BY	
DRAWING NUMBER	B- 15 -1
PROJECT NUMBER	VEMN0601
FIGURE NUMBER	



MW-1 86.01

MW-2 86.83

MW-5 84.73

MW-3 83.28

MW-4 82.88

73.96