

DAHL

& ASSOCIATES, INC.

Environmental Consultants, Contractors & Engineers

July 25, 1995

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

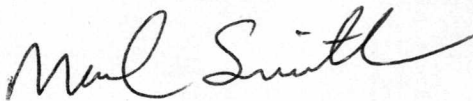
RE: Fact Sheets 7 & 11, Conoco Store #23034, 1126 South Robert, West St. Paul,
Minnesota LEAK#00000858

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
Project Manager

MPS

enclosures

cc: Mr. Jeff Smail, Conoco Inc.

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WASTE DIVISION

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WASTE DIVISION



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 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	
	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

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	100.45	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
	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	
*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

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-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
	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

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-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
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
	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

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-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	
	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	
MW-4	100.68	10/23/89					
	100.68	12/15/89					
	100.68	01/08/90					

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-4	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
	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	

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-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
	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
	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

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-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	
	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	
	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		

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	06/30/94	0.00	26.96	0.00	73.65
	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

Explanation:

All measurments are in feet (ft).

D.T.P - Depth-to-Product

D.T.W - Depth-to-Water

P.T. - Product Thickness

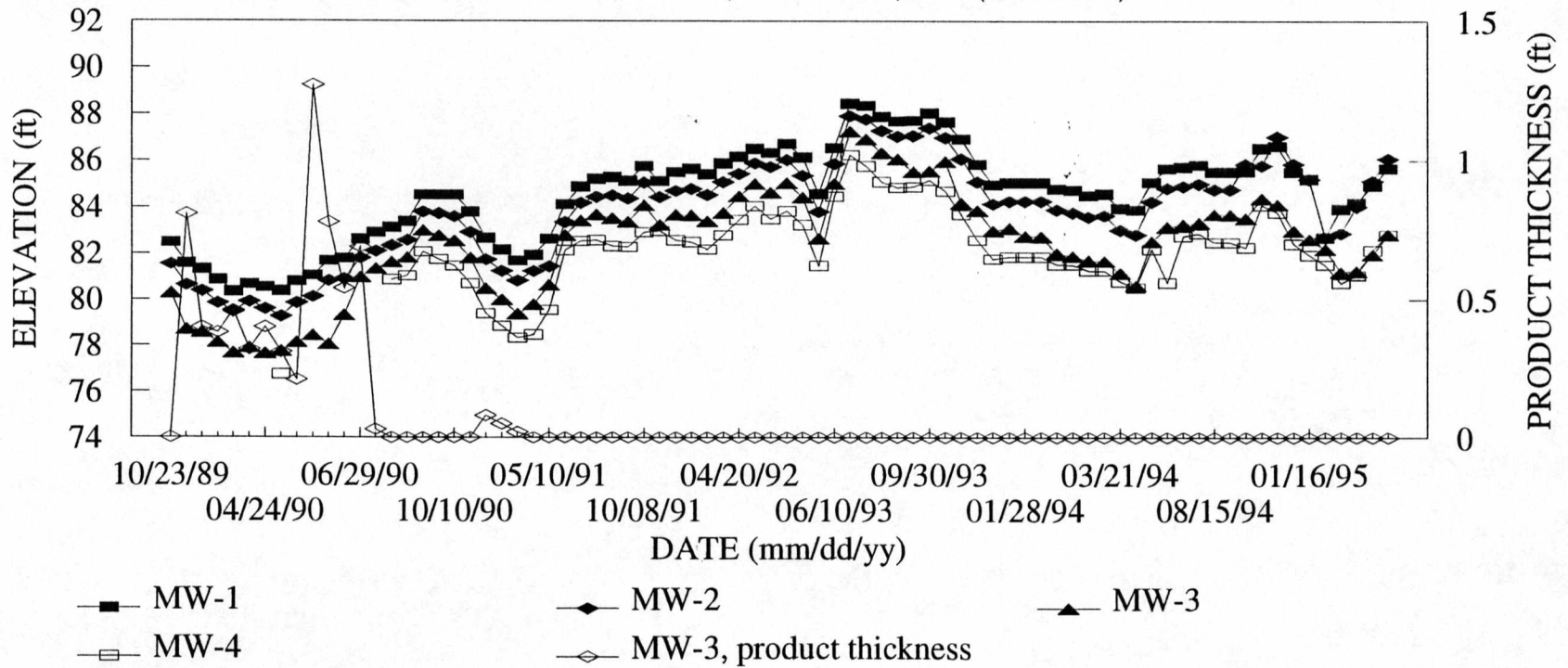
W.T.E - Water-Table-Elevation

^ - Data corrected for possible base measurement error.

DAHL

GROUNDWATER ELEVATIONS/PRODUCT THICKNESS

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

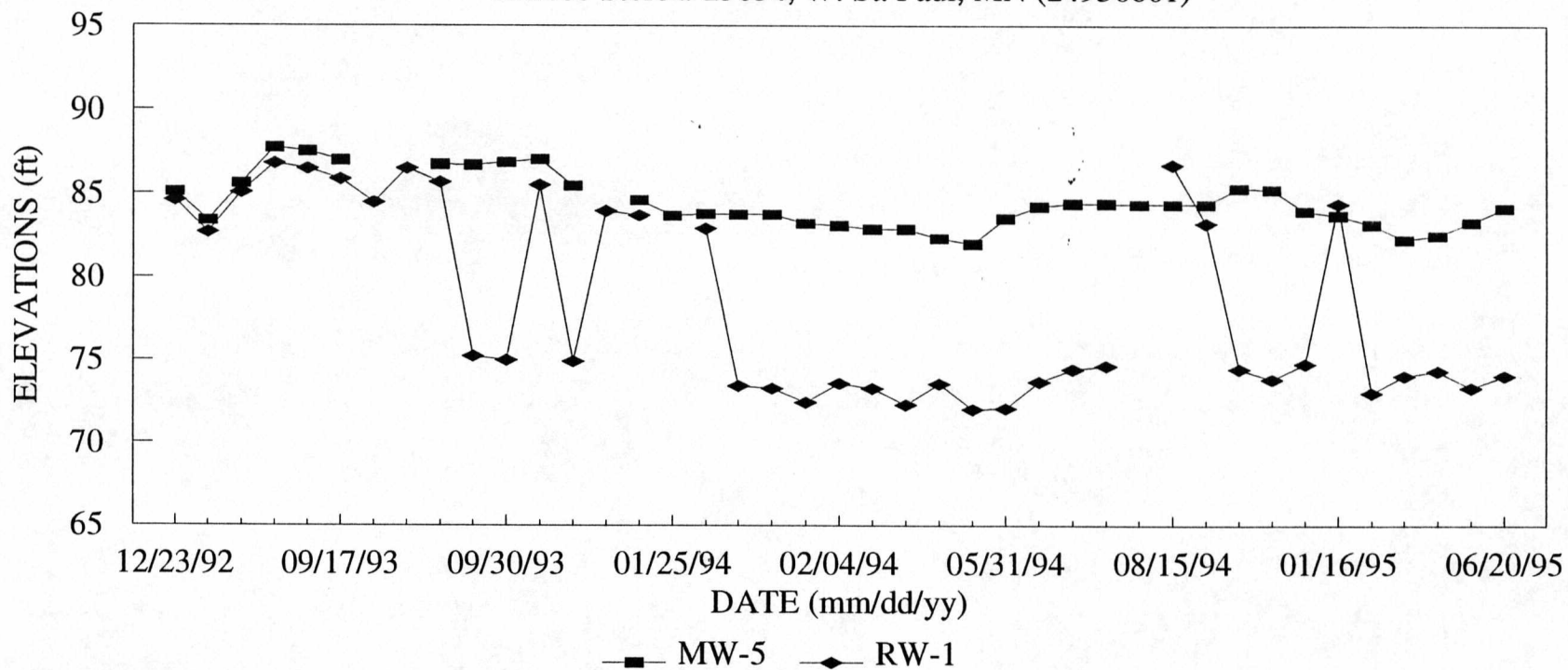


0601WTE.ALL

■ MW-1 ◆ MW-2 ▲ MW-3
□ MW-4 ◇ MW-3, product thickness

GROUNDWATER ELEVATIONS, MW-5 & RW-1

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



0601MW5.RW1

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	
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	
MW-3	05/03/90						
	09/10/90	9700	2000	23000	16000	82000	1500
	03/13/91	9200	3900	23000	26000	110000	2600
	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	

TABLE 1

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

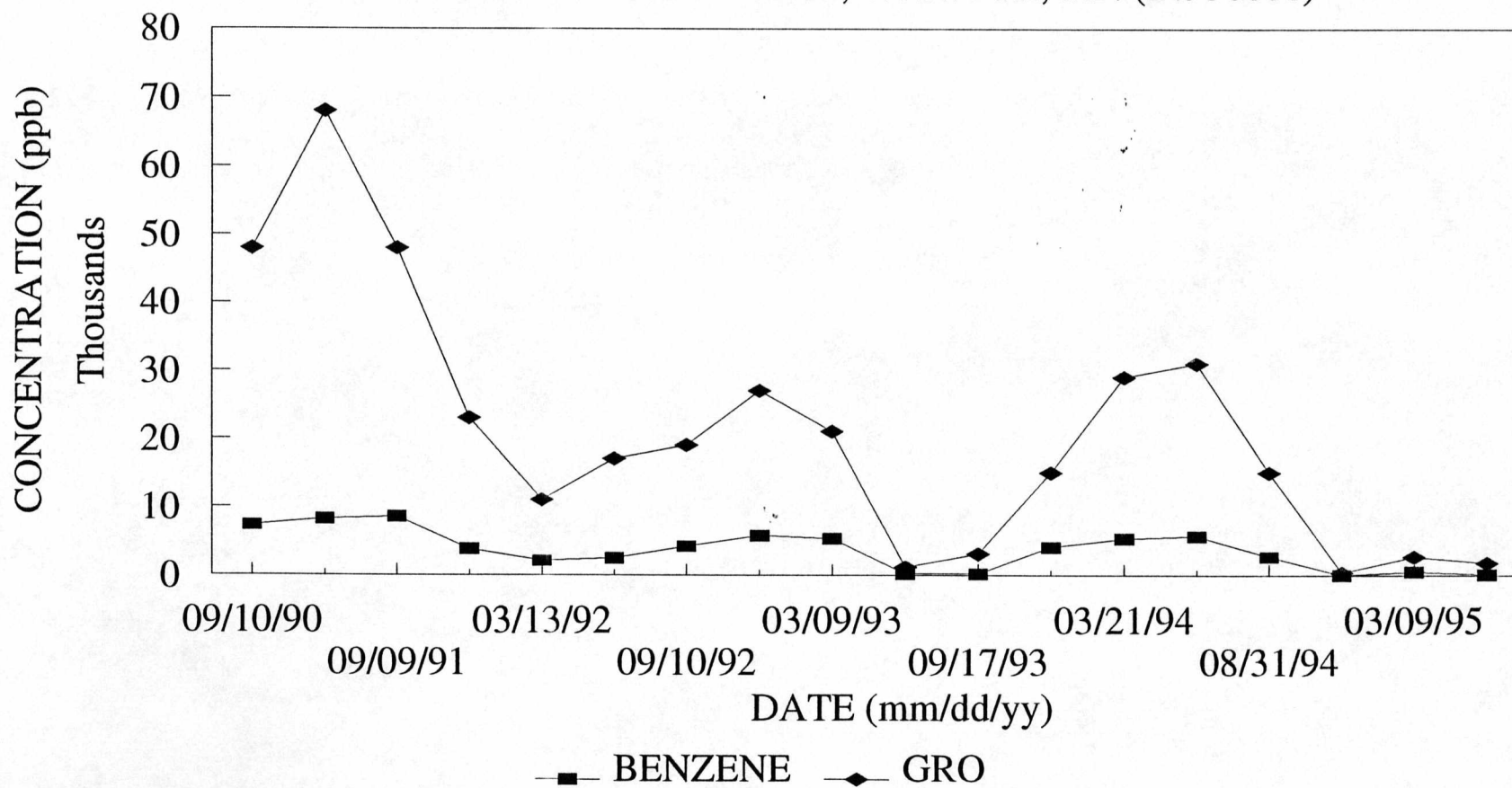
WELL #	DATE	B	E	T	X	THG/GRO	MTBE
	08/31/94	3100	1800	3100	7900	28000	ND
	12/27/94	ND	ND	ND	ND	ND	ND
	03/09/95	3100	3000	1000	11000	53000	ND
	06/20/95	2000	3100	230	9300	43000	ND
MW-4	05/03/90	ND	ND	ND	2	41	ND
	09/10/90	ND	ND	ND	ND	19	ND
	03/13/91	ND	ND	ND	1	40	ND
	09/09/91	ND	ND	ND	ND	ND	16
	12/26/91	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
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
	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

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

GROUNDWATER ANALYTICAL DATA MW-2

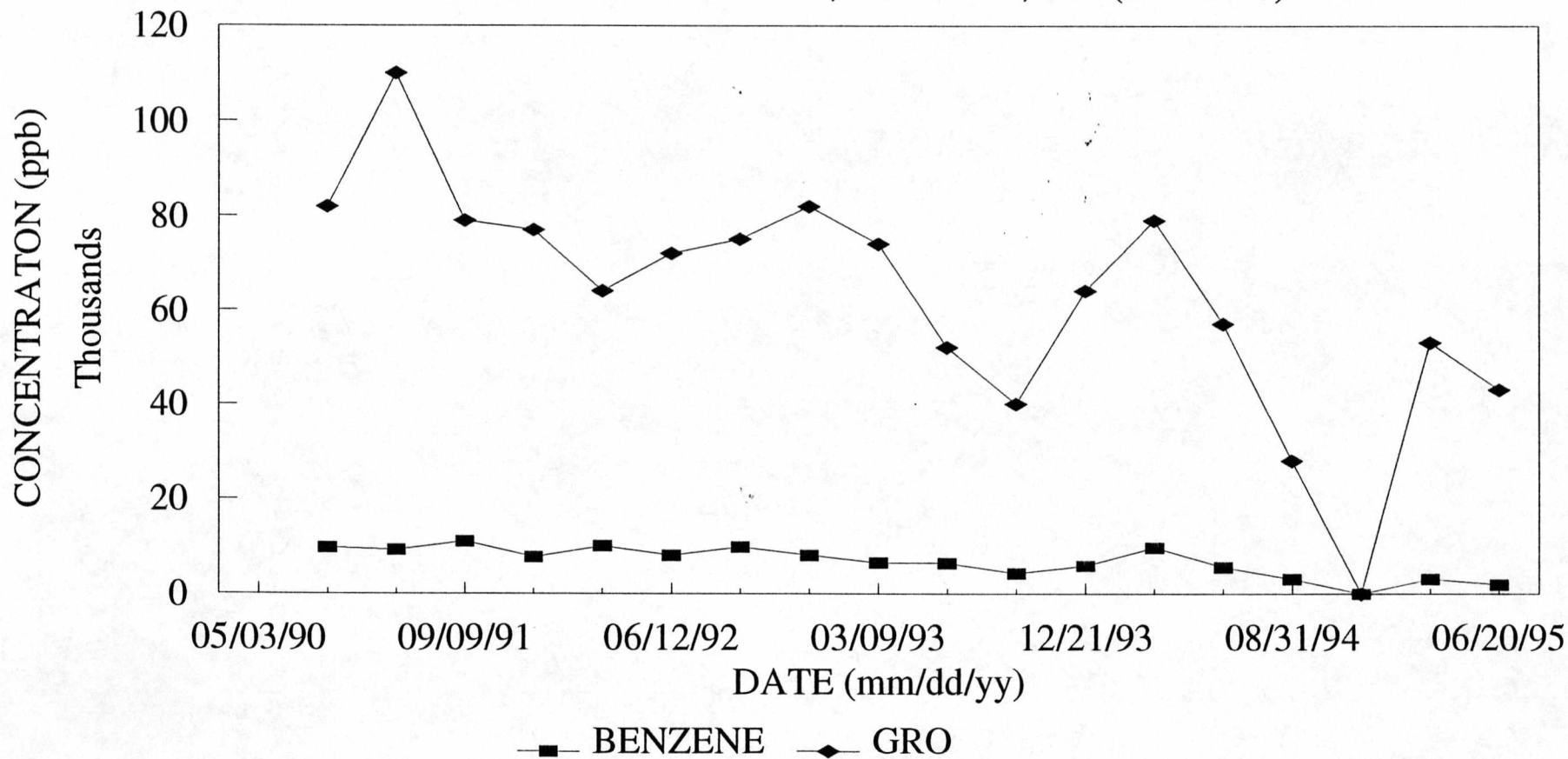
Conoco Store # 23034, W. St. Paul, MN (24930601)



0601LABANAL

GROUNDWATER ANALYTICAL DATA MW-3

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



0601LABANAL2

TABLE 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

Explanation:
 Measurements in mg/l

DAHL

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: 7-24-95

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).

5 gallons per minute

Amount of water table drawdown: 1 feet

Contaminant mass removal

Estimated contaminant mass removal rate: 0.013 gallons/day

Estimated contaminant mass removal to date: 7.32 gallons

Operating parameters Pumping rate: 5 gallons/minute

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: **34** 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 **0.68** gal/day
Estimated contaminant mass removal to date: **340.74** 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: **3.2** scfm
Total air removal rate: **66** 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: **0.691** gallons/day Total estimated contaminant mass removal to date for the site: **348.06** gallons

CAD System Monitoring Worksheet
Page 3
April 1993

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 system was down in March 1995, for maintenance. Upon completion of maintenance, the system has remained operational.

RECOMMENDATIONS

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

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		
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	

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

DAHL

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

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

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 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

Readings are measured in Inches of Water Column (IWCG)

* - indicates measurement not taken

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

Explanation:

SCFM = standard cubic feet per minute

PSI = pounds per square inch

DAHL



July 5, 1995

Mr. Mike Watson
Dahl and Associates, Inc.
4390 McMenemy Street
St. Paul, MN 55127

SUBJECT: 2493 0601
LEGEND No. 95-1352

1.0 INTRODUCTION

LEGEND TECHNICAL SERVICES, INC. (LEGEND) received one charcoal tube sample from a representative of Dahl and Associates, Inc. on June 23, 1995. The parameters and analytical results are listed in the attached table.

2.0 SAMPLE IDENTIFICATION

LABORATORY NO.	CLIENT IDENTIFICATION
SN95-40666	Stack Effluent

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

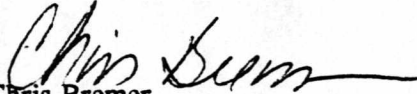
The sample was taken on June 20, 1995 and was received in acceptable condition.

5.0 REMARKS

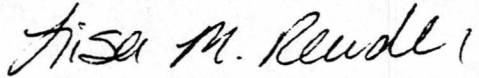
The sample was consumed in the analysis.

Submitted by,

LEGEND TECHNICAL SERVICES, INC.


Chris Bremer
Laboratory Manager

CB/LR/mv


Lisa Reuder
Chemist

LEGEND TECHNICAL SERVICES, INC.

TABLE #1
LEGEND No. 95-1352

DAHL AND ASSOCIATES, INC.

PETROLEUM VOLATILE ORGANIC COMPOUNDS - AIR

Compound	Stack Effluent Front ($\mu\text{g}/\text{tube}$)	Stack Effluent Back ($\mu\text{g}/\text{tube}$)	Method Blank ($\mu\text{g}/\text{tube}$)	PQL ($\mu\text{g}/\text{tube}$)
Total hydrocarbons as gasoline	2,900	<50	<50	50
Benzene	16	<4.0	<4.0	4.0
Toluene	17	<4.0	<4.0	4.0
Ethyl benzene	15	<4.0	<4.0	4.0
Total xylenes	140	<8.0	<8.0	8.0
DATE ANALYZED:	7/2/95	7/2/95	7/2/95	

< = Less than number shown

PQL = Practical quantitation limit



REPORT OF LABORATORY ANALYSIS

April 21, 1995

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

RE: PACE Project No. 950407.542
Client Reference: 24930601 CONOCO-ROBERT

Dear Mr. Watson:

Enclosed is the report of laboratory analyses for samples received April 08, 1995.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul D. Ernst".

Paul D. Ernst
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

Dahl & Associates
 4390 McMenemy
 St. Paul, MN 55127

April 21, 1995
 PACE Project Number: 950407542

Attn: Mr. Mike Watson

Client Reference: 24930601

PACE Sample Number: 10 0089745
 Date Collected: 04/06/95
 Time Collected: 13:45
 Date Received: 04/08/95
 Client Sample ID: Effluent

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
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INORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Chemical Oxygen Demand	mg/L	50	ND	04/13/95
Solids, Total Suspended	mg/L	10	ND	04/12/95

ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Total hydrocarbons as gasoline	ug/L	10	32	04/16/95
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VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			16APR95 H	04/16/95
Benzene	ug/L	1.0	ND	04/16/95
Toluene	ug/L	1.0	ND	04/16/95
Ethylbenzene	ug/L	1.0	ND	04/16/95
Xylenes	ug/L	2.0	2.8	04/16/95
Methyl tert-butyl ether	ug/L	4.0	ND	04/16/95
Fluorobenzene (Surrogate)	%		101	04/16/95

These data have been reviewed and are approved for release.

Paul D. Ernst
 Project Manager



REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
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FOOTNOTES
for page 1

April 21, 1995
PACE Project Number: 950407542

Client Reference: 24930601

ND Not detected at or above the PRL.
PRL PACE Reporting Limit



REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
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QUALITY CONTROL DATA

April 21, 1995
PACE Project Number: 950407542

Client Reference: 24930601

Chemical Oxygen Demand
Batch: 10 67028
Samples: 10 0089745

METHOD BLANK:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Method</u>
Chemical Oxygen Demand	mg/L	50	Blank ND

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>100089117</u>	<u>Spike</u>	<u>Spike</u>	<u>Spike</u>	<u>RPD</u>
					<u>Recv</u>	<u>Dupl</u>	
Chemical Oxygen Demand	mg/L	50	74	250	101%	101%	0%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference</u>	<u>Recv</u>
			<u>Value</u>	
Chemical Oxygen Demand	mg/L	50	300	105%



REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
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QUALITY CONTROL DATA

April 21, 1995
PACE Project Number: 950407542

Client Reference: 24930601

Solids, Total Suspended
Batch: 10 66954
Samples: 10 0089745

METHOD BLANK AND SAMPLE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Method</u> <u>Blank</u>	<u>100086819</u>	<u>Duplicate</u> <u>of</u> <u>10 0086819</u>	<u>RPD</u>
Solids, Total Suspended	mg/L	10	ND	ND	ND	NC

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Reference</u> <u>Value</u>	<u>Recy</u>
Solids, Total Suspended	mg/L	10	87	106%



REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
Page 5

QUALITY CONTROL DATA

April 21, 1995
PACE Project Number: 950407542

Client Reference: 24930601

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 67140
Samples: 10 0089745

METHOD BLANK:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Method Blank</u>
Date Analyzed			16APR95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		119

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>100090549</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Spike Dupl Recv</u>	<u>RPD</u>
Benzene	ug/L	1.0	ND	100	104%	105%	1%
Toluene	ug/L	1.0	ND	100	104%	105%	1%
Ethylbenzene	ug/L	1.0	ND	100	104%	105%	1%
Xylenes	ug/L	2.0	ND	300	106%	107%	1%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	107%	107%	0%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	107%	107%	0%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference Value</u>	<u>Recv</u>
Benzene	ug/L	1.0	100	100%
Toluene	ug/L	1.0	100	100%
Ethylbenzene	ug/L	1.0	100	100%
Xylenes	ug/L	2.0	300	102%
1,3,5-Trimethylbenzene	ug/L	1.0	100	103%
1,2,4-Trimethylbenzene	ug/L	1.0	100	104%
Methyl tert-butyl ether	ug/L	4.0	100	114%
Gasoline Range Organic Compounds	ug/L	50	1000	92%



REPORT OF LABORATORY ANALYSIS

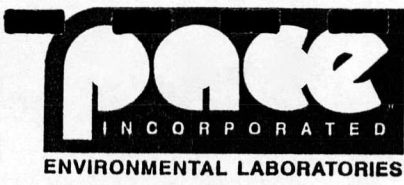
Mr. Mike Watson
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FOOTNOTES
for pages 3 through 5

April 21, 1995
PACE Project Number: 950407542

Client Reference: 24930601

NC No calculation due to value below detection limit.
ND Not detected at or above the PRL.
PRL PACE Reporting Limit
RPD Relative Percent Difference



207262

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client Dahl & Associates
 Address 4390 McMenemy St.
St. Paul, MN. 55127
 Phone (612) 490-2905

Report To: Mike Watson
 Bill To: Dahl
 P.O. # / Billing Reference _____
 Project Name / No. 24930601

Pace Client No. _____
 Pace Project Manager _____
 Pace Project No. 980407042
 *Requested Due Date: _____

Sampled By (PRINT): J. Howard
 Sampler Signature [Signature] Date Sampled 4-6-95

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES					ANALYSES REQUEST						REMARKS	
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	HCL	BTEX	MTBE	THG	TSS	CO ₂			
1	EFFLUENT	15:15	H ₂ O	8974.5	5	1	1				X	X	X	X				
2																		
3																		
4																		
5																		
6																		
7																		
8																		

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
OUT / DATE	RETURNED / DATE							
				1	<u>J. Howard</u>	<u>P. MacKeever</u> / Pace	4/7/95	15:30

Additional Comments

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS



201262

MW

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client Dahl & Associates
 Address 4390 McMenemy St.
St. Paul, MN. 55127
 Phone (612) 490-2905

Report To: Mike Watson
 Bill To: Dahl
 P.O. # / Billing Reference _____
 Project Name / No. 24930601

Pace Client No. _____
 Pace Project Manager _____
 Pace Project No. _____
 *Requested Due Date: _____

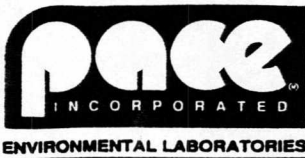
Sampled By (PRINT): J. Howard

Sampler Signature [Signature] Date Sampled 4-6-95

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES					ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	HCL		
1	Effluent	15:30	H ₂ O		5	1				3	XXXXXX	
2												
3												
4												
5												
6												
7												
8												

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
OUT / DATE	RETURNED / DATE							
				1	<u>J. Howard</u>	<u>M. MacKever</u> Pace	<u>4/7/95</u>	<u>15:30</u>

Additional Comments



REPORT OF LABORATORY ANALYSIS

May 30, 1995

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

RE: PACE Project No. 950515.515
Client Reference: 2493 0601

Dear Mr. Watson:

Enclosed is the report of laboratory analyses for samples received May 12, 1995.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

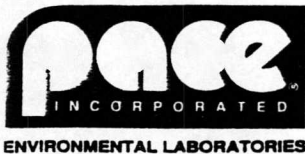
Sincerely,

A handwritten signature in black ink, appearing to read "Paul D. Ernst".

Paul D. Ernst
Project Manager

Enclosures

Handwritten initials "MS" in black ink, with a flourish extending to the right.



REPORT OF LABORATORY ANALYSIS

Dahl & Associates
4390 McMenemy
St. Paul, MN 55127

May 30, 1995
PACE Project Number: 950515515

Attn: Mr. Mike Watson

Client Reference: 2493 0601

PACE Sample Number: 10 0133396
Date Collected: 05/11/95
Time Collected: 14:30
Date Received: 05/12/95
Client Sample ID: Effluent

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
------------------	--------------	------------	----------------------

INORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Chemical Oxygen Demand	mg/L	50	ND	05/17/95
Solids, Total Suspended	mg/L	10	ND	05/16/95

ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			23MAY95 I	05/23/95
Benzene	ug/L	1.0	ND	05/23/95
Toluene	ug/L	1.0	ND	05/23/95
Ethylbenzene	ug/L	1.0	ND	05/23/95
Xylenes	ug/L	2.0	3.6	05/23/95
Total hydrocarbons as gasoline	ug/L	10	46	05/23/95
Methyl tert-butyl ether	ug/L	4.0	ND	05/23/95
Fluorobenzene (Surrogate)	%		99.2	05/23/95

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager



ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
Page 2

FOOTNOTES
for page 1

May 30, 1995
PACE Project Number: 950515515

Client Reference: 2493 0601

ND Not detected at or above the PRL.
PRL PACE Reporting Limit



ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
Page 3

QUALITY CONTROL DATA

May 30, 1995
PACE Project Number: 950515515

Client Reference: 2493 0601

Chemical Oxygen Demand
Batch: 10 68548
Samples: 10 0133396

METHOD BLANK:

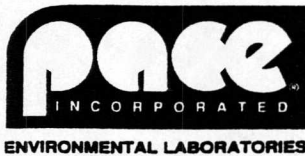
<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Method Blank</u>
Chemical Oxygen Demand	mg/L	50	ND

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>100130079</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Spike Dupl Recv</u>	<u>RPD</u>
Chemical Oxygen Demand	mg/L	50	ND	250	92%	90%	2%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Reference Value</u>	<u>Recv</u>
Chemical Oxygen Demand	mg/L	50	300	92%



REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
Page 4

QUALITY CONTROL DATA

May 30, 1995
PACE Project Number: 950515515

Client Reference: 2493 0601

Solids, Total Suspended
Batch: 10 68555
Samples: 10 0133396

METHOD BLANK AND SAMPLE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Method</u>	<u>100128953</u>	<u>Duplicate of</u>	<u>10 0128953</u>	<u>RPD</u>
Solids, Total Suspended	mg/L	10	ND	50	53		6%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference Value</u>	<u>Recv</u>
Solids, Total Suspended	mg/L	10	34.6	80%



REPORT OF LABORATORY ANALYSIS

Mr. Mike Watson
Page 5

QUALITY CONTROL DATA

May 30, 1995
PACE Project Number: 950515515

Client Reference: 2493 0601

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 68885
Samples: 10 0133396

METHOD BLANK:

Parameter	Units	PRI	Method Blank
Date Analyzed			23MAY95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		99.7

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRI	100135224	Spike	Spike Recy	Spike Dupl Recy	RPD
Benzene	ug/L	1.0	1.8	100	87%	95%	9%
Toluene	ug/L	1.0	1.9	100	86%	94%	9%
Ethylbenzene	ug/L	1.0	ND	100	86%	95%	10%
Xylenes	ug/L	2.0	ND	300	89%	97%	9%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	88%	96%	9%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	86%	94%	9%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRI	Reference Value	Recy
Benzene	ug/L	1.0	100	100%
Toluene	ug/L	1.0	100	99%
Ethylbenzene	ug/L	1.0	100	99%
Xylenes	ug/L	2.0	300	101%
1,3,5-Trimethylbenzene	ug/L	1.0	100	100%
1,2,4-Trimethylbenzene	ug/L	1.0	100	98%
Methyl tert-butyl ether	ug/L	4.0	100	103%
Gasoline Range Organic Compounds	ug/L	50	1000	99%



ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

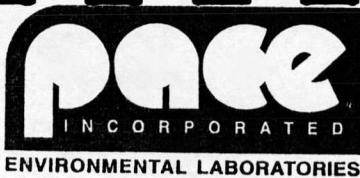
Mr. Mike Watson
Page 6

FOOTNOTES
for pages 3 through 5

May 30, 1995
PACE Project Number: 950515515

Client Reference: 2493 0601

ND Not detected at or above the PRL.
PRL PACE Reporting Limit
RPD Relative Percent Difference



207813

MS

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client Dahl & Associates

Report To: Mike Watson

Pace Client No. _____

Address 4390 McMenemy Rd.

Bill To: Dahl

Pace Project Manager _____

St. Paul, MN 55127

P.O. # / Billing Reference _____

Pace Project No. 980515575

Phone (612) 490-2905

Project Name / No. 24930601

*Requested Due Date: _____

Sampled By (PRINT): J. Howard

Sampler Signature _____ Date Sampled _____

J. Howard 5/11/95

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES					ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	HCL		
1	EFFLUENT	H ³⁰	H ₂ O	3339.0	511					3	XXXXX	
2												
3												
4												
5												
6												
7												
8												

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
OUT / DATE	RETURNED / DATE							
				1	<u>J. Howard</u>	<u>M. MacKeever / Pace</u>	<u>5/12/95</u>	<u>16:00</u>
					<u>Dahl</u>	<u>1 pm</u>	<u>5/12/95</u>	<u>1700</u>

Additional Comments



REPORT OF LABORATORY ANALYSIS

July 07, 1995

Ms. Marge Free
Dahl & Associates
4390 McMenemy Road
St. Paul, MN 55127

RE: PACE Project No. 950622.525
Client Reference: 2493 0601

Dear Ms. Free:

Enclosed is the report of laboratory analyses for samples received June 22, 1995.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Paul D. Ernst".

Paul D. Ernst
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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

July 07, 1995
PACE Project Number: 950622525

Attn: Ms. Marge Free

Client Reference: 2493 0601

PACE Sample Number: 10 0178152
Date Collected: 06/20/95
Time Collected: 15:30
Date Received: 06/22/95
Client Sample ID: MW-1

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
------------------	--------------	------------	----------------------

ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			UP	
			30JUN95	I 07/01/95
Benzene	ug/L	1.0	ND	07/01/95
Toluene	ug/L	1.0	ND	07/01/95
Ethylbenzene	ug/L	1.0	ND	07/01/95
Xylenes	ug/L	2.0	ND	07/01/95
Gasoline Range Organic Compounds	ug/L	50	ND	07/01/95
Methyl tert-butyl ether	ug/L	4.0	ND	07/01/95
Fluorobenzene (Surrogate)	%		88.3	07/01/95



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 2

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

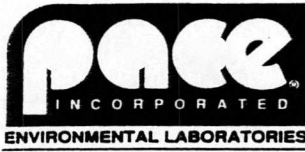
PACE Sample Number: 10 0178160
Date Collected: 06/20/95
Time Collected: 15:45
Date Received: 06/22/95
Client Sample ID: MW-2

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
Date Analyzed			01JUL95 H 07/01/95
Benzene	ug/L	2.0	170 07/01/95
Toluene	ug/L	2.0	240 07/01/95
Ethylbenzene	ug/L	2.0	59 07/01/95
Xylenes	ug/L	4.0	480 07/01/95
Gasoline Range Organic Compounds	ug/L	100	1800 07/01/95
Methyl tert-butyl ether	ug/L	8.0	ND 07/01/95
Fluorobenzene (Surrogate)	%		87.5 07/01/95



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 3

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PACE Sample Number: 10 0178179
Date Collected: 06/20/95
Time Collected: 16:00
Date Received: 06/22/95
Client Sample ID: MW-3

Parameter Units PRI DATE ANALYZED

ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			29JUN95 H	06/29/95
Benzene	ug/L	50	2000	06/29/95
Toluene	ug/L	50	230	06/29/95
Ethylbenzene	ug/L	50	3100	06/29/95
Xylenes	ug/L	100	9300	06/29/95
Gasoline Range Organic Compounds	ug/L	2500	43000	06/29/95
Methyl tert-butyl ether	ug/L	200	ND	06/29/95
Fluorobenzene (Surrogate)	%		94.3	06/29/95



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 4

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PACE Sample Number: 10 0178187
Date Collected: 06/20/95
Time Collected: 16:30
Date Received: 06/22/95
Client Sample ID: MW-4

Parameter Units PRI DATE ANALYZED

ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			30JUN95 I	07/01/95
Benzene	ug/L	1.0	ND	07/01/95
Toluene	ug/L	1.0	ND	07/01/95
Ethylbenzene	ug/L	1.0	ND	07/01/95
Xylenes	ug/L	2.0	ND	07/01/95
Gasoline Range Organic Compounds	ug/L	50	ND	07/01/95
Methyl tert-butyl ether	ug/L	4.0	ND	07/01/95
Fluorobenzene (Surrogate)	%		88.1	07/01/95



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 5

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PACE Sample Number: 10 0178195
Date Collected: 06/20/95
Time Collected: 16:30
Date Received: 06/22/95
Client Sample ID: MW-5

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			30JUN95 I	07/01/95
Benzene	ug/L	1.0	ND	07/01/95
Toluene	ug/L	1.0	ND	07/01/95
Ethylbenzene	ug/L	1.0	ND	07/01/95
Xylenes	ug/L	2.0	ND	07/01/95
Gasoline Range Organic Compounds	ug/L	50	ND	07/01/95
Methyl tert-butyl ether	ug/L	4.0	ND	07/01/95
Fluorobenzene (Surrogate)	%		90.0	07/01/95



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 6

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PACE Sample Number: 10 0178225
Date Collected: 06/20/95
Time Collected: 10:15
Date Received: 06/22/95
Client Sample ID: Effluent

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>DATE ANALYZED</u>
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INORGANIC ANALYSIS

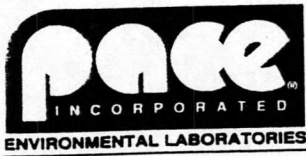
INDIVIDUAL PARAMETERS

Chemical Oxygen Demand	mg/L	50	ND	06/30/95
Solids, Total Suspended	mg/L	10	ND	06/26/95

ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Date Analyzed			02JUL95 I	07/02/95
Benzene	ug/L	1.0	ND	07/02/95
Toluene	ug/L	1.0	ND	07/02/95
Ethylbenzene	ug/L	1.0	ND	07/02/95
Xylenes	ug/L	2.0	ND	07/02/95
Total hydrocarbons as gasoline	ug/L	10	28	07/02/95
Methyl tert-butyl ether	ug/L	4.0	ND	07/02/95
Fluorobenzene (Surrogate)	%		88.4	07/02/95



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 7

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PACE Sample Number:
Date Collected:
Time Collected:
Date Received:
Client Sample ID:
Parameter

10 0178241
06/20/95
10:00
06/22/95
Influent

Units PRI DATE ANALYZED

ORGANIC ANALYSIS

VOLATILE PETROLEUM RELATED COMPOUNDS

Parameter	Units	PRI	DATE ANALYZED
Date Analyzed			03JUL95 H 07/03/95
Benzene	ug/L	5.0	390 07/03/95
Toluene	ug/L	5.0	270 07/03/95
Ethylbenzene	ug/L	1.0	41 07/03/95
Xylenes	ug/L	10	990 07/03/95
Total hydrocarbons as gasoline	ug/L	50	11000 07/03/95
Methyl tert-butyl ether	ug/L	20	ND 07/03/95
Fluorobenzene (Surrogate)	%		96.5 07/03/95

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 8

FOOTNOTES
for pages 1 through 7

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

ND Not detected at or above the PRL.
PRL PACE Reporting Limit
UP Unidentified peaks present in chromatogram of this sample.



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 9

QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

Chemical Oxygen Demand
Batch: 10 70683
Samples: 10 0178225

METHOD BLANK AND SAMPLE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Method</u>	<u>100178225</u>	<u>Duplicate</u>	<u>RPD</u>
Chemical Oxygen Demand	mg/L	50	<u>Blank</u>	<u>Effluent</u>	of <u>10 0178225</u>	<u>NC</u>
			ND	ND	ND	

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>100176990</u>	<u>Spike</u>	<u>Spike</u>	<u>Spike</u>	<u>RPD</u>
Chemical Oxygen Demand	mg/L	50	230	200	<u>Recv</u>	<u>Dupl</u>	<u>Recv</u>
					86%	83%	4%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Reference</u>	<u>Recv</u>
Chemical Oxygen Demand	mg/L	50	<u>Value</u>	<u>Value</u>
			300	99%



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 10

QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

Solids, Total Suspended
Batch: 10 70494
Samples: 10 0178225

METHOD BLANK AND SAMPLE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Method</u>	<u>Blank</u>	<u>100178381</u>	<u>Duplicate of</u>	<u>10 0178381</u>	<u>RPD</u>
Solids, Total Suspended	mg/L	10	ND	ND	ND	ND	ND	NC

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference Value</u>	<u>Recv</u>
Solids, Total Suspended	mg/L	10	79.4	94%



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
Page 11

QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 70668
Samples: 10 0178179

METHOD BLANK:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Method Blank</u>
Date Analyzed			29JUN95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		107

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>100175030</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Spike Dupl</u>	<u>RPD</u>
Benzene	ug/L	1.0	64	100	84%	70%	18%
Toluene	ug/L	1.0	17	100	92%	83%	10%
Ethylbenzene	ug/L	1.0	110	100	83%	65%	24%
Xylenes	ug/L	2.0	110	300	88%	77%	13%
1,3,5-Trimethylbenzene	ug/L	1.0	16	100	88%	79%	11%
1,2,4-Trimethylbenzene	ug/L	1.0	110	100	78%	69%	12%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference Value</u>	<u>Recv</u>
Benzene	ug/L	1.0	100	99%
Toluene	ug/L	1.0	100	100%
Ethylbenzene	ug/L	1.0	100	100%
Xylenes	ug/L	2.0	300	103%
1,3,5-Trimethylbenzene	ug/L	1.0	100	104%
1,2,4-Trimethylbenzene	ug/L	1.0	100	104%
Methyl tert-butyl ether	ug/L	4.0	100	94%
Gasoline Range Organic Compounds	ug/L	50	1000	109%



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
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QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 70757
Samples: 10 0178160

METHOD BLANK:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Method Blank</u>
Date Analyzed			01JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		91.0

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>100174688</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Dupl Recv</u>	<u>RPD</u>
Benzene	ug/L	1.0	ND	100	100%	99%	1%
Toluene	ug/L	1.0	2.0	100	98%	97%	1%
Ethylbenzene	ug/L	1.0	ND	100	100%	99%	1%
Xylenes	ug/L	2.0	3.8	300	102%	101%	1%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	102%	103%	1%
1,2,4-Trimethylbenzene	ug/L	1.0	1.1	100	101%	101%	0%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Reference Value</u>	<u>Recv</u>
Benzene	ug/L	1.0	100	86%
Toluene	ug/L	1.0	100	91%
Ethylbenzene	ug/L	1.0	100	93%
Xylenes	ug/L	2.0	300	96%
1,3,5-Trimethylbenzene	ug/L	1.0	100	95%
1,2,4-Trimethylbenzene	ug/L	1.0	100	95%
Methyl tert-butyl ether	ug/L	4.0	100	83%
Gasoline Range Organic Compounds	ug/L	50	1000	83%



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
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QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 70779
Samples: 10 0178241

METHOD BLANK:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Method Blank</u>
Date Analyzed			02JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		103

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>100178624</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Spike Dupl Recv</u>	<u>RPD</u>
Benzene	ug/L	1.0	ND	100	101%	99%	2%
Toluene	ug/L	1.0	ND	100	101%	99%	2%
Ethylbenzene	ug/L	1.0	ND	100	102%	100%	2%
Xylenes	ug/L	2.0	ND	300	105%	103%	2%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	104%	103%	1%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	103%	103%	0%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRI</u>	<u>Reference Value</u>	<u>Recv</u>
Benzene	ug/L	1.0	100	105%
Toluene	ug/L	1.0	100	106%
Ethylbenzene	ug/L	1.0	100	106%
Xylenes	ug/L	2.0	300	110%
1,3,5-Trimethylbenzene	ug/L	1.0	100	110%
1,2,4-Trimethylbenzene	ug/L	1.0	100	110%
Methyl tert-butyl ether	ug/L	4.0	100	98%
Gasoline Range Organic Compounds	ug/L	50	1000	88%



REPORT OF LABORATORY ANALYSIS

Ms. Marge Free
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QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015

Batch: 10 70787
Samples: 10 0178225

METHOD BLANK:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Method Blank</u>
Date Analyzed			02JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		88.6

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>100181188</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Spike Dupl Recv</u>	<u>RPD</u>
Benzene	ug/L	1.0	ND	100	94%	93%	1%
Toluene	ug/L	1.0	ND	100	94%	93%	1%
Ethylbenzene	ug/L	1.0	ND	100	93%	93%	0%
Xylenes	ug/L	2.0	ND	300	96%	95%	1%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	96%	95%	1%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	95%	93%	2%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference Value</u>	<u>Recv</u>
Benzene	ug/L	1.0	100	102%
Toluene	ug/L	1.0	100	101%
Ethylbenzene	ug/L	1.0	100	100%
Xylenes	ug/L	2.0	300	103%
1,3,5-Trimethylbenzene	ug/L	1.0	100	103%
1,2,4-Trimethylbenzene	ug/L	1.0	100	102%
Methyl tert-butyl ether	ug/L	4.0	100	107%
Gasoline Range Organic Compounds	ug/L	50	1000	104%



REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

VOLATILE PETROLEUM RELATED COMPOUNDS

Batch: 10 70736
Samples: 10 0178152, 10 0178187, 10 0178195

METHOD BLANK:

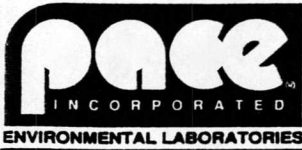
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Date Analyzed			30JUN95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		88.9

SPIKE AND SPIKE DUPLICATE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>100179124</u>	<u>Spike</u>	<u>Spike Recv</u>	<u>Spike Dupl Recv</u>	<u>RPD</u>
Benzene	ug/L	1.0	ND	100	87%	96%	10%
Toluene	ug/L	1.0	ND	100	86%	95%	10%
Ethylbenzene	ug/L	1.0	ND	100	85%	94%	10%
Xylenes	ug/L	2.0	ND	300	88%	96%	9%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	87%	97%	11%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	86%	94%	9%

LABORATORY CONTROL SAMPLE:

<u>Parameter</u>	<u>Units</u>	<u>PRL</u>	<u>Reference Value</u>	<u>Recv</u>
Benzene	ug/L	1.0	100	93%
Toluene	ug/L	1.0	100	92%
Ethylbenzene	ug/L	1.0	100	91%
Xylenes	ug/L	2.0	300	94%
1,3,5-Trimethylbenzene	ug/L	1.0	100	93%
1,2,4-Trimethylbenzene	ug/L	1.0	100	92%
Methyl tert-butyl ether	ug/L	4.0	100	93%
Gasoline Range Organic Compounds	ug/L	50	1000	99%



REPORT OF LABORATORY ANALYSIS

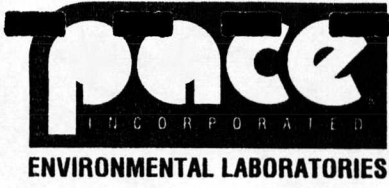
Ms. Marge Free
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FOOTNOTES
for pages 9 through 15

July 07, 1995
PACE Project Number: 950622525

Client Reference: 2493 0601

NC No calculation due to value below detection limit.
ND Not detected at or above the PRL.
PRL PACE Reporting Limit
RPD Relative Percent Difference



281743

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client Dahl 9 Associates
 Address 4390 McMenemy Rd.
St. Paul MN 55127
 Phone (612) 490-2905

Report To: Mike Watson
 Bill To: Dahl 9 Assoc
 P.O. # / Billing Reference _____
 Project Name / No. 2493 0601

Pace Client No. _____
 Pace Project Manager _____
 Pace Project No. 950622525
 *Requested Due Date: _____

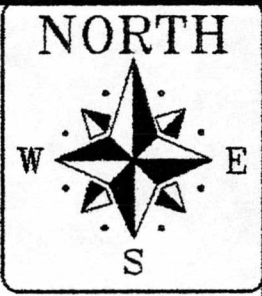
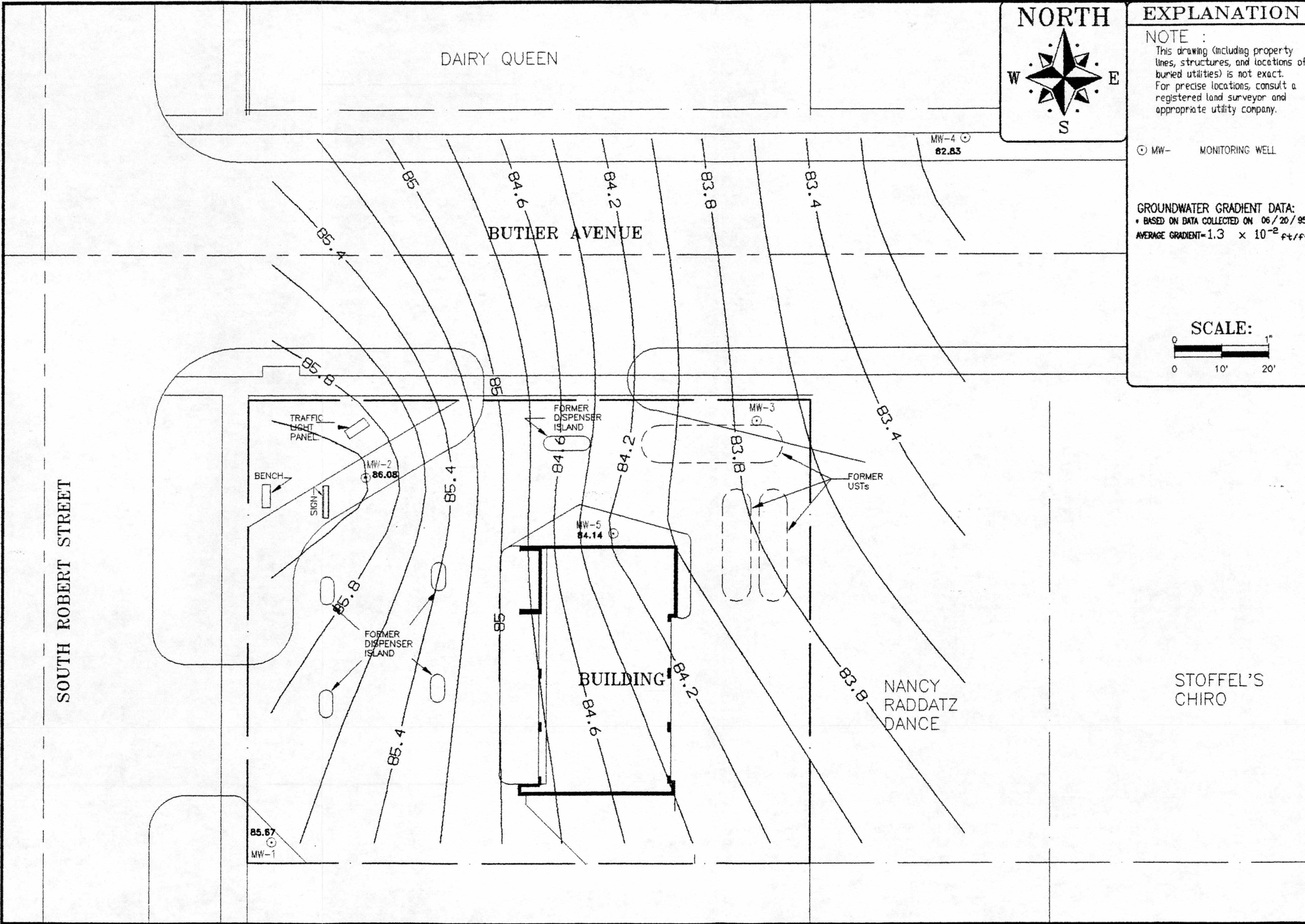
Sampled By (PRINT): Dan Madsen
 Sampler Signature Dan Madsen Date Sampled 6/20/95

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES					ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	HCl		
1	MW# 1	3:30 6/20/95	H ₂ O	17815.2	3					X	X	
2	MW# 2	3:45		17816.0	}					X	X	
3	MW# 3	4:00		17817.9						X	X	
4	MW# 4	4:15		17818.7						X	X	
5	MW# 5	4:30		17819.5						X	X	
6	Effluent	10:15		17822.5		5	X	X			X	X
7	Influent	10:00		17824.1	3				X	X		
8												

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
		OUT/DATE	RETURNED/DATE					
				1-7	Dan Madsen DAHR	Carolyne Thant Pace	6/20/95	1300

Additional Comments

SEE REVERSE SIDE FOR INSTRUCTIONS

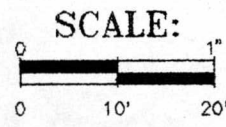


EXPLANATION

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 06/20/95
 AVERAGE GRADIENT = 1.3×10^{-2} ft/ft



4390 McMenamy 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 06/20/95

1126 ROBERT STREET SOUTH
 WEST ST. PAUL, MINNESOTA

AutoCAD FILE NAME 0601-15H
 PLOT DATE 07/24/95 PLOT SCALE 1" = 20'

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